gnuplot 5.0

An Interactive Plotting Program

Thomas Williams & Colin Kelley

Version 5.0 organized by: Ethan A Merritt and many others

Major contributors (alphabetic order):
Christoph Bersch, Hans-Bernhard Bröker,
John Campbell, Robert Cunningham,
David Denholm, Gershon Elber,
Roger Fearick, Carsten Grammes,
Lucas Hart, Lars Hecking, Péter Juhász,
Thomas Koenig, David Kotz,
Ed Kubaitis, Russell Lang, Timothée Lecomte,
Alexander Lehmann, Jérôme Lodewyck,
Alexander Mai, Bastian Märkisch,
Ethan A Merritt, Petr Mikulík,
Carsten Steger, Shigeharu Takeno,
Tom Tkacik, Jos Van der Woude,
James R. Van Zandt, Alex Woo, Johannes Zellner
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Mailing list for comments: `gnuplot-info@lists.sourceforge.net`
Mailing list for bug reports: `gnuplot-bugs@lists.sourceforge.net`
Web access (preferred): `http://sourceforge.net/projects/gnuplot`

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Part I
Gnuplot

Cx: n8 " (Copyright)

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```
     AUTHORS
             Original Software:
                Thomas Williams,  Colin Kelley.
             Gnuplot 2.0 additions:
                Russell Lang, Dave Kotz, John Campbell.
             Gnuplot 3.0 additions:
                Gershon Elber and many others.
             Gnuplot 4.0 and 5.0 additions:
                See list of contributors at head of this document.
```

(0J2<$*$*$^$+$JLu; Lu$O@5$7$/$J$$$+bCNl$^$;sN$G>\$7$/$O>e5-$N86J8$rEv$?$CF/$@$5$$!#Lu<T$O@UG$$r;}A^$;$s!#)

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3N%=%U%H%&%'%"H=$NIUB0J8=q$N;HMQ!"J#@=!"G[I[$N5v2D$O!">e5-$NCx:n8"(copyright) I=<($,!"A4FNJ#@=J*$K=q$+lF$$k3H!"$*$h$SCx:n8"I=<($H3N5vBzJ8$NN>J}$,$=$N;Y1gJ8=q$K=q$+lF$$k3H$r>r7o$H7?>e$G!"$3$NJ8=q$KhjJ]>Z5l$^$9!#

3N%=%U%H%&%'%"$N=$@5bG'ail$F$$$^$9!#$7$+$7!"=$@5$r4^$'A4%=!<%9%3!<%I$NG[I[$N8"Mx$OG'ail^$;$s!#=$@5$O%j%j!<%9HGKBP9$k%Q%C%A$N7A$GG[I[$7J1lPJj$^$;$s!#=$@5$5$l$?%=!<%9$r%3%s%Q%$%k$7$F:n$il?%P%$%J%j$NG[I[$O!"0J2<$N>r7o$N85$GG'ail^$9:

1. %j%j!<%9HG$+$i$N%=!<%9$N=$@5ItJ,$r!"%Q%C%A$N7A$G%P%$%J%j$H6&$KG[I[$9k3$H
2. %Y!<%9HJ$k%j%j!<%9HG$H6hJL9k$?$a$K!"$=$N%P!<%8%g%sHV9f$KFCJL$J%P!<%8%g%s;XDj;R$rIU2C9k3H
3. $=$N=$@5HG$N%5%]!<%HMQ$K!"$"J?$NL>A0$H%"%/%;%92DG=$J%"%I%l%9$H$rDs6!$9k3$H
4. %Y!<%9HJ$k%=%U%H%&%'%"$N;HMQ$K4X$7FO!"2f!9$NO"Mm>pJs$rJ];}$7B3$1k3$H

% j% j! <% 9HG$N%=! <% 9% 3! <% I$r! "% Q% C% A$N7A$G$N%=! <% 9$N=$@5$H0l=o$KG [I [$ 9k 3HO! "% P% $% J% jG [I [$K4X$ 9$k >r9 ` 2 $+$i 4 $^$G$N>r7o$N85$G5v$ 5l^$ 9! #

$ 3$N%=% U% H% &% ’% "$O "$"$k$,$^$^" Ds6 !$ 5$ l! "E,MQ2DG=$ JK !N’$G5v$ a$ i$ l$ kHOO$NJ]>Z$ rI=L@$"$ k$ $$OOE< ($ 7 F $$O$ $$^$;$ s! #

```
Cx<T
        % *% j% 8% J% k% =% U% H% &% ’% ":
           Thomas Williams,  Colin Kelley.
        Gnuplot 2.0 DI2C:
           Russell Lang, Dave Kotz, John Campbell.
        Gnuplot 3.0 DI2C:
           Gershon Elber $H$=$NB>$N?M! 9! #
        Gnuplot 4.0, 5.0 DI2C:
           $ 3$NJ8=q$N@hF,$N4sM?<T (contributors) $N0lMw;2>H! #
```

O8aK (Introduction)

gnuplot $O! "%]! <% ?% V% k$ J% 3% ^% s% IF~NOJ}<0$N% 0% i% U% f! <% F% #% j% F% #$G! "Linux, OS/2, MS Windows, OSX, VMS, $=$NB>B?$/$N% W% i% C% H% [! <% ’>e$ GF0: n$ 7$ ^$ 9! #% =! <% 9% 3! <% I$ K$ OCx: n8 "$,$ "$ j$ ^$ 9$,! "L5NA$ GG [I [$ 5$ l F $$ ^$ 9 ($ 9$ J$ o$ A! "$=$ l$ KBP2A$ r; YJ’$ &I,MW$ O$ "$ j$ ^$;$ s)! #85$O! "2 J3X<T$ d3X@8$,?t3X4X?t$ d&G! <% ?$ J$ I$ r BPOCE*$ KI=< ($ G$ -$ k$ h$ &: n$ i$ l$?$ N$ G$ 9$,! "8=:_$ ^$ G$ K! "Nc$ ($ P Web % 9% /% j% W% H$ J$ I! "B?$/$ NHsBPOC7?$ NMx MQ$ b% 5%]! <% H$ 9$ k$ h$ &$ K@ .D 9$ 7$ F$ $$ ^$ 9! #$ 3$ l$ O! "Nc$ ($ P Octave N h$ &$ K% 5! <% I% Q! <% F% #$ N% "% W% j% 1! <% 7% g % s$ NIA2h% (% s% 8% s$ H$ 7$ F$ b; H$ o$ l$ F$ $$ ^$ 9! #gnuplot $O! "1986 h j% 5%]! <% H$ H3hH/$ J3+H/$,9T$ o$ l$ F$ $$ ^$ 9! #

gnuplot $O! "2 <!85! "$^$?$O3 <!85$N! "B?$/$N<dN ‘$N% 0% i% U$ r% 5%]! <% H$ 7$ F$ $$ ^$ 9: @^@~% 0% i% U! "E@% 0% i% U! "K@ % 0% i% U! "Ey9b@~! "% Y% /% H% k> llA2h! "6JLL! "$=$ 7$ F$=$ l$ i$ K4XO "$ 9$ k$ 5$ ^$ 6$ ^$ JJ8; zNsEy! #$=$ 7$ F$ 5$ i$ K$ $$/$D $+$ NFCJL$ JIA2h7?$ b% 5%]! <% H$ 7$ F$ $$ ^$ 9! #

gnuplot $OB?$/$N0 [$ J$ k=PNO$ r% 5%]! <% H$ 7$ F$ $$ ^$ 9: BPOC7?% 9% /% j! <% s=PNO7A<0 (% ^% &% 9$ d% [% C% H% -! <F~NO$ b2D G=)! "% Z% s% W% m% C% ?$ d8=:_$ N% W% j% s% ?$ X$ ND>@\=PNO! "$^$?$ OB?$/$ N% U% !% $% k7A<0$ X$ N=PNO (eps, emf, fig, jpeg, LaTeX, pdf, png, postscript, ...)! #gnuplot $O! "MF0W$ K?7$ 7$ $=PNO7A<0$ rDI2C$ 9$ k$ h$ &3HD% $ 9$ k$ 3$ H$,$ G$ -$ ^ $ 9! #:G6aDI2C$ 5$ l$?BPOC7?=PNO7A<0$ K$ O! "wxWidgets (J#?t$ N% W% i% C% H% [! <% ‘$ GMxMQ2DG=), Qt $ r85$ K$ 7$?$ b$ N $,$ "$ j$ ^$ 9! #svg $d HTML5 canvas =PNO7A<0$ rMxMQ$ 9$ l$ P! "% 0% i% U$ r Web % Z! <% 8Fb$ K% ^% &% 9MxMQ2DG=$ J7A$ G Kd$ a9~$ s$ @=PNO$ r@8@.$ 9$ k$ 3$ H$ b$ G$ -$ ^$ 9! #

gnuplot $N% 3% ^% s% I8@8l$ OBgJ8; z> .J8; z$ r6hJIL$ 7$ ^$ 9! #$ 9$ J$ o$ A! "> .J8; z$ G=q$ +$ l$?% 3% ^% s% I$ d4X?tL>$ O! "$= $ l$ i$ rBgJ8; z$ G=q$ $$?$ b$ N$ H$ OF1$ 8$ G$ O$ "$ j$ ^$;$ s! #$ $$:$ l$ N% 3% ^% s% I$ b! "$ "$ $$ ^$ $$ 5$ NL5$ 8B$ j$ K$ *$ $$ F>J N,$ 9$ k$ 3$ H$,$ G$ -$ ^$ 9! #l 9TCf$ K$ O%;%_% 3% m% s (;) $G6h@Z$ C$ FJ#?t$ N% 3% ^% s% I$ r=q$ /$ 3$ H$,$ G$ -$ ^$ 9! #J8; zNs$ O C10l0zMQId! "$ "$ k$ $$ OFs=E0zMQId$ N$ I$ A$ i$ +$ G=q$ -; O$ a$ ^$ 9$,! "N><T$ K$ OHyL/$ J0c$ $$,$ "$ j$ ^$ 9 (>\:Y$ O! "0J 2<;2>H **syntax (p. 45)**)! #Nc

```
set title "My First Plot";  plot 'data';  print "all done!"
```

% 3% ^% s% I$ O! "U#?t9T$ K$ ^$?$,$ k$ 3$ H$,$ G$ -$ ^$ 9! #$=$ N>19g$ O! ":G=*9T0J30$ NA4$ F$ N9T$ N9TKv$ K% P% C% /% 9% i% C% 7% e (\) $r=q$/I,MW$,$ "$ j$ ^$ 9! #% P% C% /% 9% i% C% 7% e$ OI,$:3F9T*:G8e* $NJ8; z$ G$ J$/$ F$ O$ J$ j$ ^$;$ s! #$=$ N7k2L$ H$ 7 $F% P% C% /% 9% i% C% 7% e$ H! "$=$ l$ KB3$/2~9TJ8; z$,B8:_$ 7$ J$ +$ C$?$ +$ N$ h$ &$ K07$ o$ l$ ^$ 9! #$ D$ ^$ j! "2~9TJ8; z$,% 9 % Z! <% 9$ NLr$ r$ 9$ k$ 3$ H$ b$ "$ j$ ^$;$ s$ 7! "2~9T$ K$ h$ C$ F% 3% a% s% H$,=*N;$ 9$ k$ 3$ H$ b$ "$ j$ ^$;$ s! #$ G$ 9$ +$ iJ#?t9T K ^$?$,$ k9T$ N@hF,$ r% 3% a% s% H% "% &% H$ 9$ k$ H! "$=$ N% 3% ^% s% IA4BN$,% 3% a% s% H% "% &% H$ 5$ l$ k$ 3$ H$ K$ J$ j$ ^$ 9 (0J 2<;2>H **comments (p. 24)**)! #$ J$ *Cm0U$ 7$ ^$ 9$,! "$ b$ 7! "J#?t9T$ N% 3% ^% s% I$ N$ I$ 3$ +$ G% (% i! <$,5/$ -$?$ H$ -! " %Q! <% 5$ O$ =$ N>l=j$ r@53N$ K$ O; X< ($ 9$ k$ 3$ H$,$ G$ -$ ^$;$ s$ 7! "$ ^$?! "@5$ 7$ $9T$ K; X< ($ 9$ kI,MW$ b$ J$ $$ G$ 7$ g$ &! #

$ 3$N% I% -% e% a% s% H$ K$ *$ $$ F! "Cf3g8L ({}) $O>JN,2DG=$ J0z?t$ rI=$ 9$ b$ N$ H$ 7! "=DK@ (|) $O! "8_$ $$ KGSB>E*$ J0z?t $r6h@Z$ k$ b$ N$ H$ 7$ ^$ 9! #**gnuplot** $N% -! <% o! <% I$ d **help** K *$ 1$ k9 ‘L\L>$ O! "5U0zMQId (!.)! "$ ^$?$ O2DG=$ J>19g K O**boldface** (B@; z) $GI=$ 7$ ^$ 9! #3Q3g8L (<>) $O! "$=$ l$ KBP1~$ 9$ k$ b$ N$ KCV$ -4 9$ ($ i$ l$ k$ Y$ -$ b$ N$ rI=$ 7$ ^ $ 9! #B?$/$ N>19g! "% *% W% 7% g% s$ N0z?t$ K$ O! "$=$ l$,>JN,$ 5$ l$ k$ H% G% U%)% k% H$ NCM$,; HMQ$ 5$ l$ ^$ 9! #$ 7$ +$ 7! "$ 3$ l $ i$ N>19g! "I,$:$ 7$ b3Q3g8L$,Cf3g8L$ G0O$ ^$ l$ F=q$ +$ l$ F$ $$ k$ o$ 1$ G$ O$ "$ j$ ^$;$ s! #

$ "$ k9 ‘L\$ K$ D$ $$ F$ N% X% k% W$,I,MW$ J$ H$ -$ K$ O! "**help** $KB3$ 1$ F$=$ N9 ‘L\L>$ rF~NO$ 7$ F2<$ 5$ $! #$ ^$?$ OC1$ K **help ?** G b% X% k% W$ N9 ‘L\$ N% a% K% e! <$,8=$ o$ l$ ^$ 9! #

BgNL$N%0%i%U%5%s%W%k$,!"0J2<$N Web %Z!<%8$K$"$j$^$9!#

http://www.gnuplot.info/demo/

%3%^%s%I%i%$%s+$i5/F0$9$kH-$O!"0J2<$N=q<0$,;H$($^$9!#

```
gnuplot {OPTIONS} file1 file2 ...
```

$3$3$G file1, file2 Ey$O!"**local** %3%^%s%I$G<h$j9~$`$N$HF1Ey$NF~NO%U%!%$%k(%9%/%j%W%H%U%!%$%k) $G$9!#X11 %Y!<%9$N%7%9%F%`$G$O!"0J2<$N=q<0$,;H$($^$9!#

```
gnuplot {X11OPTIONS} {OPTIONS} file1 file2 ...
```

>\:Y$O!"X11 $N%I%-%e%a%s%H!"$*hS0J2<;2>H: **x11 (p. 248)**!#

gnuplot $KM?$($k%*%W%7%g%s$O!"%3%^%s%I9TNI3$KCV$$$F$b9=$$$^$;$s!#%U%!%$%k$O;XDj7?=g$K<B9T$5$l!"F1MM$K-e %*%W%7%g%sGG0U%N%3%^%s%I$rM?$($k3$HbG$-$^$9!#Nc:

```
gnuplot   file1.in   -e "reset"   file2.in
```

FCJL$J%U%!%$%kL>"-" $O!"I8=`F~NO$+$iFI$^$;$k$N$K;H$$^$9!#**gnuplot** $O:G8e$N%U%!%$%k$r=hM}$7=*$o$k$H=*N;$7$^$9!#FI$_9~$^$;$k%U%!%$%k$r0l$D$b;XDj$7$J$>l9g$O!"**gnuplot** $OI8=`F~NO$+iNBPOCF~NO$r<h$j$^$9!#>\:Y$O!"0J2<;2>H: **batch/interactive (p. 22)**!#gnuplot MQ$N%*%W%7%g%s$K$D$$$F$O!"0J2<$Nh&K7$F0lMw$r8+k3H,G-$^$9:

```
gnuplot --help
```

>\:Y$O0J2<;2>H: **command line options (p. 22)**!#

BPOC7?IA2h%&%#%s%I%&GN:n6HCf$O!"'h' rBGD$H%[%C%H%-!<(**hotkeys**) $H%^%&%95!G=(**mousing**) $K4X$9$k%X%k%W$r8+k3H,G-$^$9!#**seeking-assistance** $N%;%/%7%g%s$O!"5iJk>pJs$d%X%k%W!"FAQ $rC5$9<j3]jrM?$($F$/$lkG7g$&!#

C5$7=P$9<j=u$1 (Seeking-assistance)

8x<0$N gnuplot Web %Z!<%8$O0J2<K"j^$9!#

http://www.gnuplot.info

=u1r5aakA0$K!"%U%!%$%k FAQ.pdf $+!"$^$?$O>e$N Web %5%$%H$N

FAQ (EY!9J9$+$l$k<ALd; Frequently Asked Questions) $N0lMw

$r%A%"%C%/$7F/$@$5$$!#

gnuplot %f!<%6H7FN<j=u1,I,MWJi!"0J2<$N%K%e!<%9%0%k!<%W$rMxMQ7F$/$@$5$$!#

```
comp.graphics.apps.gnuplot
```

gnuplot %a!<%j%s%0%j%9%HXNEj9F$NJ}K!$K4X7F$O!"SouceForge K"$k gnuplot $N3+H/ Web %5%$%H

http://sourceforge.net/projects/gnuplot

$r;2>H$7F/$@$5$$!#

gnuplot %a!<%j%s%0%j%9%H$K%a!<%k$r=q$/A0$K!":G=iK=$N%a!<%j%s%0%j%9%H$K;22C9kI,MW$,$"k3HKCm0U7F$/$@$5$$!#3l$O!"%9%Q%`$NNL$r8:$i$9$3Hr0];}9k$?$aKI,MWG$9!#

%a!<%j%s%0%j%9%H%a%s%P!<$X%N%a!<%k%"%I%l%9:

```
gnuplot-info@lists.sourceforge.net
```

%P%0%j%]!<%H!"%=!<%9$N2~NIEy$O0J2<$N trackers $K upload 7F$/$@$5$$:

```
http://sourceforge.net/projects/gnuplot/support
```

$?$@$7!"%j%]!<%H$rAw$kA0$K!"$"$J$?$,%j%]!<%H7h$&$H7F$$k%P%0$,!"$h$j?7$7$$HG$G4{$K=$@5$5lF$$$J$$$+%A%"%C%/7F$/$@$5$$!#

3+H/HG$K4X$9$k%a!<%j%s%0%j%9%H:

```
gnuplot-beta@lists.sourceforge.net
```

2?$+<ALd$rEj9F9kH-$O!"$"J?,%j%]!<%H7F$$k gnuplot $N%P!<%8%g%s!"=PNO7A<0!"%*%Z%l!<%F%#%s%0%7%9%F%`!"$H$$C$?A4$F$N>pJs$r4^$`h&K7F/$@$5$$!#=$NLdBj$r0z$-5/$3$9!V>.$5$$!W%9%/%j%W%H$,$"lPJ*NI$$G$9!#=$N>l9g!"%G!<%?%U!%$%k$N%W%m%C%Hhj$b4X?t$N%W%m%C%H$NJ}$,hjNI$$G$9!#

%P!<%8%g%s 5 GN?7$7$5!G= (New features in version 5)

* @~$NE@@~/GK@~%Q%?!<%s$O!"8=:_$O@~$NB>$NB0@-$HF'HN)$K;XDj$G$-$^$9!#0J2<;2>H: **dashtype (p. 38)**, **set dashtype (p. 116)**, **set linetype (p. 135)**!#

* J8;z$N=q<0@)8f$O!"2<IU$-!"eIU$-!"%U%)%s%H%5%$:!"$=$NB>0JA0M-8z$@C?bN$K2C$(!":#$CB@;zBN(bold) $H<PBN(italic) %U%)%s%H@_Dj$b%5]!<%H$7$F$$$^$9!#$3$N%b!<%I(3HD%J8;z=hM}) $O!"8=:_$O%G%U%)%k%H$GM-8z$HJC$F$$$^$9!#0J2<;2>H: **enhanced text (p. 25)**!#

* BPOC7?=PNO7A<0$O!"%O%$%Q!<%F%-%9%H%i%Y%k$r%5]!<%H$7$F$$$^9,!"3l$O%^%&%9$,$=$N%i%Y%k$N%j%s%/E@e$K$"$kH-KN$_8=$lkbNG$9!#

* ?7$7$:BI87O(EY!"J,!"IC)!#0J2<;2>H: **set xtics geographic (p. 180)**!#

* <4$N8+=P$7$N%G%U%)%k%H=q<0MQ$N"% h" (LaTeX 7O=PNO7A<0GO"$%h$")!#3N=q<0$OC $NI8=\=q<0$N%g $K;w$F$$$^9,!";X?tItJ,$,$"$k>l9g$K$O!"$=l,>eIU$-J8;z$H7F=q$+$lk3H,0c$$$^$9!#Nc$($P!"1.2E05 GJ$/!"1.2 x 10^5 HJj^$9!#

* %9%/%j%W%HFb$G!"%$%s%i%$%s%G!<%?$rL>A0IU$-$N%G!<%?%V%m%C%/H7$FJB8$77+jJV7IA2hG-kh$&$K!#0J2<;2>H: **inline data (p. 88)**!#

* 32-bit $N%"%k%U%!CM+RGB ?'I=5-(#AARRGGBB) $r%5]!<%H!#0J2<;2>H:**colorspec (p. 37)**!#

* hsv2rgb(H,S,V) $H$$&JQ494X?tKh$jHSV ?'6u4V$r%5]!<%H!#

* Bh2<4(x2, y2) $O!"BP1~4X?t$Khj!"Bh1<4$K8GDj$G$-$^$9!#:G$bC1=cJN$O!"$3lKhjBh1<4$H2<4$N<4$NHC0O$r0lCW5;k3HG$9!#$h$j0lHL$K!"3lKh$jHs@~7A$J<4$rDj5A$G$-$kh&KJj^9,!"3l$^$GO=Nh$&$J3H$OBP?t<4$7$+$G$-$^$;$sG7$?!#0J2<;2>H: **set link (p. 136)**!#

* plot %3%^%s%I$N3F4X?t$K%*%W%7%g%sH7$FIA2hHC0O$rA0CV;XDjG-$^$9!#3l$O!"plot A4BN$NHC0OKO1F6A$;$:!"$=$N4X?t$N%G!<%?$r%5%s%W%j%s0$9$kHC0OG7$+$"j^$;$s!#0J2<;2>H: **plot (p. 80)**, **piecewise.dem (p. ??)**!#

* 30It%i%$%V%i%jlibcerf $,MxMQ2DG=$G$"$l$P!"$=lOJ#AG?t3X4X?tcerf, cdawson, erfi, faddeeva, $*$h$SVoigt %W%m%U%!%$%kVP(x,sigma,gamma) $rDs6!$9kN$K;H$ol^$9!#

* %3%^%s%I **import** $O!"30It6&M-%*%V%8%'%/%H(%5]!<%H$O%*%Z$l!<%F%#%s%0%7%9%F%`0MB8) $,Ds6!$9$k4X?t$K%f!<%6Dj5A4X?tL>$r3d$jEvF^$9!#E,Ev$J30It6&M-%*%V%8%'%/%H$r:n$k$?$a$N%F%s%W%l!<%H%X%C%@%U%!%$%k!"%5%s%W%k%=!<%9!"makefile JI$,demo NCfK$"j^$9!#

* BPOC:n6H$NMzNr0lMwFb$ND>A0$N%3%^%s%I$O!"HV9f$G:F<B9T$G$-$^$9!#Nc$($P **history !5** $O!"**history** $N0lMwFb$N5HV$N%3%^%s%I$r:F<B9T7^$9!#

* %S%C%H%7%U%H1i;;R>> $H<<!#

* ?7$7$$IA2h%9%?%$%k **with parallelaxes**!"**with table**!"$*$h$SEy9b@~$N%i%Y%kIU$1!#

* gnuplot $N%7'%k8F$S=P7G gnuplot %9%/%j%W%H$K%Q%i%a!<%?$rEO$;$^$9!#gnuplot -c scriptfile.gp ARG1 ARG2 ARG3 ...

* ?75,%3%^%s%I **set minussign** $H **set micro**!#$3li$O!"Ii$NId9f$NI=<(($N:]$K%O%$%U%s(-) GJ$/0u;zJ8;z$H7F$N!V%^%$%J%95-9f!W(!]) $r;H$&h&!"$*$h$S2J3XE*A0CVC10LI=<(($N:]$K"u" NBeojK!V%^%$%/%m5-9f!W(&L) $r;H$&h&!"gprintf() %k!<%A%s$K;X<($7$^$9!#3l$O!"<4$N9o$_%i%Y%k$H!"L@<(E*$Kgprintf() $r;H$C$F:n$il?J8;zNsKN$_1F6A$rM?$($^$9!#$3li$NI=8=$N$?a$K=PNO5l$k%P%$%HNs$O!"8=:_$Nencoding $K0MB8$7$^$9!#%3%^%s%I **set minus** $O!"version 5.0 %Q%C%A%l%Y%k5 $G:G=i$K8=$l!"$^$@;n83CJ3,$NbN$G$9(;EMM$N:Y$+$$ItJ,$OJQ99$N2DG=@-$"$j)!#

?7$7$%3%^%s%I (New commands)

- `import f(x) from "plugin.so"` # 6&M-%i%$%V%i%j$+$i4X?t$rFI$_9~$_
- `set history {quiet|numers} {full|trim}` # history %3%^%s%I=PNO$N@)8f
- `history !N` # 0JA0$N%3%^%s%I$rHV9f$G:F<B9T
- `plot <datafile> skip N` # %F%-%9%H%G!<%?@hF,?t9T$r%9%-%C%W
- `plot ... smooth mcsplines` # %G!<%?$K1h$&C1D43 <!%9%W%i%$%s
- `reset session` # 8=:_$N:n6H$N=i4|>uBV$rI|5"

- set arrow <tag> from <start> length <len> angle <ang>
- set colorsequence default|classic|podo # 0J8e$NIA2hMWAG$G;HMQ9k?'
- set monochrome # @~<oNULJ@_DjK!
- set dashtype <tag> <dash-spec> # %f!<%6Dj5AGK@~%Q%?!<%s
- set link x2 via f(x) inverse g(x) # Hs@~7A<4%9%1!<%k$r2DG=$K
- set fit quiet|results|brief|verbose # fit =PNONL$N@)8f
- set contours; splot ... with labels # ?tCMGNEy9b@~$N%i%Y%k
- set style textbox # J8;zNsMWAG$K3OOH$rD1$k
- set view map {scale} # 3D <MlFIA2h$N%j%5%$%:$,2DG=$K
- set multiplot {next|previous} # <+F0%l%$%"%&%H3J;RFb$G$N0\F0
- set minussign # %O%$%U%s$GJ/%^%$%J%9$r;HMQ
- set micro # "u" GJ$/%^%$%/%mJ8;z$r;HMQ

%P!<%8%g%s 5 GNUQ99 (Changes in version 5)

%P!<%8%g%s 5 $GF3F~$5l?0J2<$NUQ99$O!"A0NHGNgnuplot MQ$N%9%/%j%W%H$N5sF0rUQ($k2DG=@~$,$"$j$^$9!#

* NaN $d!"@5$7$/$J$$%G!<%?Ns?t!"$^$?$OB>$NM=4|7J$$$bNr4^$`F~NO%G!<%?$N=hM}$N2~NI!#Nc($d?^)KD$$F$O!"0J2<;2>H: **missing (p. 117)**!#

* ;~4V:BI8$O!"I8=`E*$JUnix %(%]%C%/(1970G/1 7n1 F|)$+$i$NIC?t$H7FFbIt$GJ]B8$7$^$9!#0JA0NHGNgnuplot GO!"UL$N%(%]%C%/(2000G/1 7n1 F|)$rFbIt$G;HMQ7F$$$^7?!#3NUQ99$O!"gnuplot $N30$G:nil$?ICC10L$N%G!<%?KhCFL7=b$,$b$?$i5l$kLdBj$r2r7h7^$9!#%s%s%9%H!<%k$5lF$$k8D!9$Ngnuplot $,$IAi$N%(%]%C%/$r;HMQ7F$$k$+$K$D$$F$O!"%3%^%s%I **print strftime("%F",0)** GCNk3H$,$G$-$^$9!#8=:_$O!";~4V$O/$J$/$H$b%_%jIC$N@:EY$GJ]B8$5l^$9!#

* 4X?t **timecolumn(N,"timeformat")** $O!"8=:_$O2DN0z?t$r;}$A$^$9!#?7$7$$2$DL\$N0z?tOI$N%G!<%?<4$H$b4XO"$7F*i:!"hCF3lKhj4X?t **timecolumn** $r!"x $dy<4$K;XDj9kNH$O0c$&7A<0$NF|;~%G!<%?$NFI$_9~$_$K;H($kh&KJj^$9!#$3$N5!G=$O!"<!$N%3%^%s%INs$K<hCFUQoj$^$9: **set xdata time; set timefmt "timeformat"**!#3l$O!"U#?t$N%U%!%$%k$+$i0[$J$k=q<0$NF|;~%G!<%?rFIs$G!"$=lirAH_9go;$F1$D$N%0%i%U$K9k3H$r2DG=$K7^$9!#

* %3%^%s%I **set [axis]range** $N%-!<%o!<%I **reverse** $O!"<+F0=L<\(autoscaling)$KN_1F6A$7!"**set xrange [0:1]** Nh$&$J%3%^%s%I$NOUL#$r5UK7$?$j$B>$NUQ99$r9T$C$?$jO7$^$;$s!#$3Nh$&$J>l9g$Kx<4$NJ}8~$r5U8~$-K7$?$1lP!"BeojK **set xrange [1:0]** H7F/$@$5$$!#

* %3%^%s%I **call** $O!"JQ?t72ARGC, ARG0, ..., ARG9 $rDs6!$9kh$&<BAu$5lF$$$^$9!#ARG0 $O!"<B9T$9$k%9%/%j%W%HL>$r;X7^$9!#ARG1$+$iARG9$OJ8;zNsJQ?tKJkN$G!"D>@\;2>H$9k+!"$^$?ONo(@ARG1 Nh$&$K%^%/%mE83+5;$?$bNr;2>H9k3H$,$G$-$^$9!#call $N8E$$%Q%i%a!<%?;2>H7A<0$0 ... 9O8=:_$OHs?d>)$G$9!#

* %*%W%7%g%s smooth $Nkdensity $N!"bandwidth $NDI2C;XDj$G$O!"%G!<%?Ns$+iGJ/1 DN%-!<%o!<%I7FCM$r<h$j$^$9!#0J2<;2>H:**smooth kdensity (p. 90)**!#

* **unset xrange** ($*$h$SB>$N<4$NHOOO$b)$O!"85$N%G%U%)%k%H$NHOOO$rI|5"7^$9!#

* **unset terminal** $O!"gnuplot 3+;O;~$N=PNO7A<0$rI|5"$7$^$9!#

Hs?d>)$J=q<0 (Deprecated syntax)

0JA0NHGG;Hol$F$$$?$$/D+$N=q<0$Ognuplot 4 $GHs?d>)$HJj$^$7$?$,!"8eJ}8_49@~$r;}$?$;$k$?a$N%3%s%Q%$%k;~$N%*%W%7%g%s,MQOU5lF$$$^$9!#8E$$=q<0$N%5%]!<%H$OO:o=|5l$F$$$^$9!#

gnuplot 4 GOHs?d>)$G!"%P!<%8%g%s 5 GO:o=|:

```
set title "Old" 0,-1
set data linespoints
plot 1 2 4              # y=1 $G$N?eJ?@~
```

8=:_$NF1Ey$N5!G=:

```
TITLE = "New"
set title TITLE offset char 0, char -1
set style data linespoints
plot 1 linetype 2 pointtype 4
```

%P!<%8%g%s5 GO–enable-backwards-compatibility $G9=C[$5$1$?>19g$r=|$-Hs?d>)($@$,$^$@;H$($k):

```
if (defined(VARNAME)) ...
set style increment user
plot 'file' thru f(x)
call 'script' 1.23 ABC
   (in script:  print $0, "$1", "number of args = $#")
```

8=:_$NF1Ey$N5!G=:

```
if (exists("VARNAME")) ...
set linetype
plot 'file' using 1:(f(column(2)))
call 'script' 1.23 "ABC"
   (in script:  print ARG1, ARG2, "number of args = ", ARGC
```

%G%b!"%M%C%H>e$N%5%s%W%k (Demos and Online Examples)

gnuplot $NG[I[J*$N **demo** %G%#%l%/%H%jFbKO!"B?$/$N%5%s%W%k$,<}$ai1$F$$$^$9!#$3$1$i$N%5%s%W%k$N png, svg, canvas =PNO7A<0Kh$k=PNO$r!"0J2<$N%M%C%H>e$G8+k3HbG-$^$9:

http://gnuplot.info/demos

$=$3GO!"3F%G%b$r:n@.$9$k%3%^%s%I$,%0%i%UNNYj$KI=<($5$1$^$9$7!"$=$Ngnuplot %9%/%j%W%H$r%@%&%s%m!<%I$9k3HbG-$^$9NG!"$=$1$rJ]B8$7F1MM$N%0%i%U$r:n@.9k3H$,$G$-$^$9!#

%P%C%A/BPOC7?A`:n (Batch/Interactive)

gnuplot $OB?$/$N%7%9%F%`>e$G!"%P%C%A=hM}7A<0!"$"$k$$$OBPOC7?NIAi$N7A<0$G$b<B9T$G$-!"$=1irAH_9go;k3Hb2DG=$G$9!#

%3%^%s%I%i%$%s0z?t$O!"%W%m%0%i%`$X$N%*%W%7%g%s(J8;z-$G;O$^$k)$+!"**gnuplot** %3%^%s%I$r4^$`%U%!%$%k$NL>A0G"kH2r<a$5$1$^$9!#-e "command" $N7A<0$N%*%W%7%g%s$O!"gnuplot %3%^%s%I$r6/@)E*$K<B9T$5$;!"3F%U%!%$%kH3$N%3%^%s%IJ8;zNs$O!";XDj$5$1$?=g$K<B9T$5$1$^$9!#FCJL$J%U%!%$%kL>"-"$O!"%3%^%s%I$rI8=`F~NO$+$iFI$_9~$`3H$r0UL#$7$^$9!#:G8e$N%U%!%$%k$r<B9T$7$?8e$K **gnuplot** $O=*N;$7$^$9!#FI$_9~$^$;$k%U%!%$%k!"$*hS%3%^%s%IJ8;zNs$r;XDj$7J+C?>19g$O!"**gnuplot** $OI8=`F~NO$+iNBPOC7?$NF~NO$r<u$1IU$1$^$9!#

exit $H **quit** OIAi$b8=:_$N%3%^%s%I%U%!%$%k$r=*N;$7!"$^$@A4FN%U%!%$%k,=*CF$$$J1l$P!"<!$N%U%!%$%k$r **load** 9kNK;Ho1$^$9!#

Nc:

BPOC$r3+;O$9$k:

```
gnuplot
```

2 DN%3%^%s%I%U%!%$%k"input1", "input2" $r;H$C$F%P%C%A=hM}$r9TJ&:

```
gnuplot input1 input2
```

=i4|2=%U%!%$%k"header" $N8e!"BPOC7?%b!<%I$r5/F0$7!"$=$N8eJL$N%3%^%s%I%U%!%$%k"tailer" $r<B9T$9$k:

```
gnuplot header - trailer
```

%3%^%s%I%i%$%s$+$i **gnuplot** %3%^%s%I$rD>@\M?$(!"=*N;8e$K%9%/%j!<%s>e$K%0%i%U$,;Dkh$&$K%*%W%7%g%s "-persist" $r;H$&:

```
gnuplot -persist -e "set title 'Sine curve'; plot sin(x)"
```

%U% !%$%k$N%3%^%s%I$r<B9T$9$kA0$K!"%f!<%6Dj5AJQ?t a $Hs $r%;%C%H$9$k:

```
gnuplot -e "a=2; s='file.png'" input.gpl
```

%-%c%s%P%9%5%$%: (Canvas size)

gnuplot $NOJA0$NHGGO!"**set size** NCMr!"=PNC9kIA2hNN0h(%-%c%s%P%9) $N%5%$%:$r@)8f$9kNKb;HCF $$?=PNO7A<0b"j^7?$,!"$9YF$N=PNO7A<0$,$=$&$@$C$?$o1GO"j^$;$sG7$?!#$3$NL\E*$N$?a$K **set size** $r;HMQ$9k3HO%P!<%8%g%s 4.2 $GHs?d>)$HJj!"8=:_O[HsIN=PNO7A<0$,0J2<$N%k!<%k$K=>$$$^$9:

set term <terminal_type> size <XX>, <YY> $O!"=PNC%U%!%$%k$N%5%$%:!"$^$?$O"%-%c%s%P%9" $N%5%$%:$r@)8f$7$^$9!#%G%U%)%k%HGO!"%0%i%UO=$N%-%c%s%P%9A4BN$KIA2h5l$^$9!#

set size <XX>, <YY> $O!"IA2h<+BN$r%-%c%s%P%9N%5%$%:$KBP7FAjBPE*$K?-=L$5$;$^$9!#1 hj>.$5$$?-=LCM$r;XDj$9kH!"%0%i%U$C%-%c%s%P%9A4BN$rKda:!"1 hjBg$-$$?-=LCM$r;XDj$9kH!"%0%i%U$N0lItJ,$N$_$,%-%c%s%P%9A4BN$K9g$&h&$KIA2h$5l^$9!#1 hjBg$-$$?-=LCM$r;XDj$9kH!"$"$k=PNO7A<0GOLdBj$,5/$3k+b7lJ$$$3HKCm0U7F$/$@$5$$!#

3N%k!<%k$K1h$oJ<gJNc30$O PostScript %I%i%$%P$G!"%G%U%)%k%H$G$O JA0$NHGNHF1$8?6Iq$$r7^9,!">-Mh$O PostScript %I%i%$%P$bF1MM$K%G%U%)%k%H$N?6Iq$$rJQ9$9$k3HKJkG7g$&!#

Nc:

```
set size 0.5, 0.5
set term png size 600, 400
set output "figure.png"
plot "data" with lines
```

3N%3%^%s%I$O!"I}600 %T%/%;%k!"9b$5400 %T%/%;%k$N=PNO%U%!%$%k"figure.png" $r@8@.$7$^$9!#%0%i%U$O%-%c%s%P%9$NCf$N:82<$KCV$+$l$^$9!#3l$O!"multiplot %b!<%I,>o$K9TCF$-$?J}K!$HL7=b$7$^;$s!#

%3%^%s%I%i%$%sJT=8 (Command-line-editing)

%3%^%s%I%i%$%s$G$NJT=85!G=$H%3%^%s%I%R%9%Hj$N5!G=$O!"30It$N GNU readline %i%$%V%i%j$+30It$N BSD libedit %i%$%V%i%j!"$^$?OAH$_9~$^$l$F$$$kF1EyNbNN$$:l+$r;H$C$F%5]!<%H$7$F$$$^9!#3NA*Br$O!" gnuplot $N%3%s%Q%$k;~$N configure $N%*%W%7%g%s$G9T$$^9!#

AH$_9~$_$N readline HG$N>19g$NJT=8%3%^%s%I$O0J2<NDLj$G9$,!"DEL %-!<$K4X$9$kF0:n$O%7%9%F%'$K0MB8$9k3HKCm0U7F$/$@$5$$!#GNU readline %i%$%V%i%j$H BSD libedit %i%$%V%i%j$K4X7F$O!"$=$l<+?H$N%I%-%e%a%s%H$r;2>H$7F/$@$5$$!#

%3%^%s%I9TJT=8%3%^%s%I	
J8;z	5!G=
	9TJT=8
^B	1 J8;zA0XLa9
^F	1 J8;z@h$X?J$a$k
^A	9T$N@hF,$X0\F0
^E	9T$N:G8e$X0\F0
^H	D>A0$NJ8;z$r:o=|
DEL	8=:_$NJ8;z$r:o=|
^D	8=:_0LCV$NJ8;z$r:o=|!"6u9TJiEOF
^K	8=:_0LCV$+$i9TKv$^$G:o=|
^L, ^R	2ul?I=<($N9T$r:FI=<(
^U	9TA4BN$N:o=|
^W	D>A0$NC18l$r:o=|
	MzNr
^P	A0$NMzNr$X0\F0
^N	<!$NMzNr$X0\F0

%3%a%s%H (Comments)

%3%a%s%H5−9f # $O! "%3%^%s%I9TCf$N$ [HsII3KGb=q$/$3H,G−$^$9! #3NH− **gnuplot** $O! "$=$N9T $N;D$j$NItJ,$rL5;k7^$9! #$?$@$7! "5−9f # $O0zMQIdFb$GO3$N8z2L$,$"$j$^$;$s! #%3%a%s%H9T$,'\' $G=* oC$F$$$k>19g! "<!$N9T$O%3%a%s%H$N0lIt$H7F07olk3HKCm0U7F$/$@$5$$! #

%G! <%?%U%!%$%k$KBP9k%3%a%s%HJ8;z$N;XDj$K$D$$$F$O! "0J2<;2>H: **set datafile commentschars (p. 118)**! #

:BI87O (Coordinates)

%3%^%s%I **set arrow**, **set key**, **set label**, **set object** $O%0%i%U>e$NG$0U$N0lCV$,;XDj$G$−$^$9! #$=$N0lCV$O 0J2<$N=q<0$G;XDj7^$9:

```
{<system>} <x>, {<system>} <y> {,{<system>} <z>}
```

3F:BI87O;XDj<system> KO! "**first**, **second**, **graph**, **screen**, **character** $N$$:l+$,F~$j$^$9! #

first $O:8$H2<$N<4$GDj5A5l$k x,y (3D $N>19g$Oz $b) $N:BI87O$r;HMQ7^$9! #**second** $Ox2, y2 <4(>e$Hl& $N<4) $r;HMQ$7$^$9! #**graph** $O%0%i%UIA2hNN0hFb$NAjBPE*0lCV$r;XDj$7! ":82<$,0,0 $G1&>e$,1,1 (splot $N >19g$O%0%i%UIA2hNN0hFb$N:82<$,0,0,0 $G! "EZBf$N0lCVOIiNz NCMr;HMQ7^$9! #0J2<;2>H: **set xyplane (p. 181)**) HJj^$9! #**screen** $OI=<(HC0CFb(HC0CA4BN$G$"$j! "**set size** $GA*Br$5lk0lItJ,GO$"$j$^$;$s) $r;XDj$7! ":82<$,0,0 $G1&>e$,1,1 HJj^$9! #**character** $O! "2hLINN0h$N:82<(screen 0,0) $+$i$N! "J8;z$N I}! "J8;z$N9b$5GN0lCV$rM?$($^$9! #hC$F! "**character** :BI8$O! "A*Br5l$?%U%)%s%H$N%5%$%:$K0MB8$7$^$9! #

x $N:BI87O$,;XDj5l$F$$J$>19g$O **first** $,;H$ol^$9! #y $N:BI87O$,;XDj5l$F$$J$>19g$Ox KBP9$k :BI87O$,;HMQ5l$^$9! #

M?$($k:BI8$,@dBPE*$J0lCVGOJ/$FAjBPE*$JCMG"$k>19g$b$"$j$^$9(Nc$($P **set arrow** ... **rto** $N2HVL\ $N?tCM)! #$=N[HsI,! "M?$($il??tCM$r:G=i$N0lCVKBP9$k:9$H7F;H$$^$9! #M?$(il$?:BI8$,BP?t<4 FbK"$k>19g$O! "$=$NAjBPE*JCMOG\N(H7$F2r<a$5l^$9! #Nc$($P

```
set logscale x
set arrow 100,5 rto 10,2
```

$O! "x <4$,BP?t<4$Gy <4$,@~7A$N<4$JNG! "100,5 $N0lCV$+$i1000,7 $N0lCV$X$NLp0u$r=q$/$3HKJj$^$9! #

0l$D($"$k$$O$=$l0J>e) $N<4$,;~4V<4G"$k>19g! "**timefmt** $N=q<0J8;zNs$K=>CF! "0zMQId$G0O$^l?;~4V J8;zNs$GE,@Z$J:BI8$r;XDj$9kI,MW,$"$j$^$9! #0J2<;2>H: **set xdata (p. 174)**, **set timefmt (p. 170)**! #$^ $?! "**gnuplot** $O@0?tI=5−$bG'aF$$F! "$=$N>19g$=$N@0?t$O1970 G/1 7n1 F|$+iNIC?t$H2r<a$5l^$9! #

J8;zNs%G! <%? (Datastrings)

%G! <%?%U%!%$%k$K$O! "%[%o%$%H%9%Z! <%9(6uGr$d%?%V) $r4^$^$J$$G$0U$N0u;z2DG=$JJ8;zNs! "$"$k$$$O2 =E0z MQId$G0O$^l?G$0U$NJ8;zNs(%[%o%$%H%9%Z! <%9,4^$^lF$bNI$$)! "$N$$:l+$N7A$+iJ$kJ8;zNs%G! <%?r ;}$?$;$k3H$b2DG=$G$9! #%G! <%?%U%!%$%k$K<!$Nh&$J9T$,4^$^$l$F$$$k>19g! "$=$l$O4 DNNs$r4^$_! "3 Ns L\$,%F%−%9%HItJ,G"kH8+J5l^$9:

```
1.000 2.000 "Third column is all of this text" 4.00
```

%F%−%9%HItJ,$O2 <!85$d3 <!85IA2hFbGNc($P0J2<$Nh&$K;HMQ$5l^$9:

```
plot 'datafile' using 1:2:4 with labels
splot 'datafile' using 1:2:3:4 with labels
```

%F%−%9%HItJ,$NNs%G! <%?$O1 $D! "$^$?$OJ#?t$NIA2h<4$NL\@9jN%i%Y%kH7$F;HMQ$G$−$^$9! #<!$NNc$O! "F~NO %G! <%?$N3 NsL\$H4 NsL\$r(X,Y) :BI8H7$F<h$j=P$7! "$=li$NE@$NNs$r7k$V@~J,$rIA2h$7$^$9! #7+$7$3 $N>19ggnuplot $O! "x <4$K1hCFI8=E*$K4V$N6u$$??t;z%i%Y%kND$$?L\@9$j9o$_rD1kNGOJ$/! "F~ NO%G! <%?%U%!%$%k$N1 9IL\$NX :BI8$N0lCV$K! "L\@9$j9o$_$HJ8;zNs$r x <4$K1h$CFD1F9T$−$^$9! #

```
set xtics
plot 'datafile' using 3:4:xticlabels(1) with linespoints
```

F~NO%G! <%?NNsN:G=i$N% (%s%H%j($9JoANsN8+=P$7) $r%F%-%9%HItJ,$H2r<a9kb&0lDN%*%W%7%g%s$, $"$j! "$=$l$O%F%-%9%HItJ,$r! "$=$NIA2h7?Ns$N%G! <%?$NK^Nc(key) $N%?%$%H%kItJ,H7$F;HMQ$7$^$9! #K!$N Nc$O! "@hF,$N9T$N2 NsL\$NItJ,$rK^Nc%\%C%/%9Fb$N%?%$%H%k$r@8@.9kNK;HMQ$7! "$=$N8e$NNs$N2,4 NsL\$O MW5a5l$?6J@~$rIA2h9kNK=hM}5l$^$9:

```
plot 'datafile' using 1:(f($2)/$4) with lines title columnhead(2)
```

JL$NNc:

```
plot for [i=2:6] 'datafile' using i title "Results for ".columnhead(i)
```

3NNs$N@hF,9T$NMxMQ$O! "**set key autotitle columnhead** $G<+F02=$5l^$9! #0J2<;2>H: **labels (p. 59)**, **using xticlabels (p. 94)**, **plot title (p. 99)**, **using (p. 92)**,**key autotitle (p. 131)**! #

3HD%J8;zNs=hM}%b! <%I (Enhanced text mode)

B?$/$N=PNO7A<0$,! "3HD%J8;zNs=hM}%b! <%I (enhanced text mode) $r%5%]! <%H$7$F$$$^$9! #$3lO! "J8;zNs$K DI2C$N=q<0>pJsrKda3_$^$9! #Nc$($P "x^2" $O x $N<+>h$r! "DL>o2f! 9$,8+$k>eIU$-$N2 $,$D$$$?7A$G=q $-=P$7$^$9! #3N%b! <%I$O! "=PNO7A<0$N@_Dj;~$K%G%U%)%k%H$H7FA*Br5l$^$9$,! "$=$N8e$G'set termoption [no]enhanced" $r;H$CF=$N5!G=$rM-8z/L58zKbG-$^$9$7! ""set label 'x_2' noenhanced" Nh$&$K8D! 9$N J8;zNs$KE,MQ9k3HbG$-$^$9! #

3HD%J8;zNs@)8f5-9f			
@)8f5-9f	Nc	7k2L	@bL@
^	a^x	a^x	>eIU$-J8;z
_	a_x	a_x	2<IU$-J8;z
@	a@^b_{cd}	a^b_{cd}	6u%\%C%/%9(I}$,$J$$)
&	d&{space}b	d␣␣␣␣␣b	;XDj7?D9$5$N%9%Z! <%9$rA^F~
~	~a{.8-}	$\tilde{a}$	'a' $N>e$K'-' $r! "8=:_$N%U%)%s%H%5 %$%:$N.8 G\;}$A>e$2$?0ILCV$K=E$M=q$-
	{/Times abc}	abc	Times %U%)%s%H! ":#$N%5%$%:$Gabc $r=PNO
	{/Times*2 abc}	abc	Times %U%)%s%H! ":#$NG\$N%5%$%:$Gabc
	{/Times:Italic abc}	*abc*	Times %U%)%s%H! "%$%?%j%C%/BN$Gabc
	{/Arial:Bold=20 abc}	**abc**	Arial %U%)%s%H! "B@;z! "%5%$%:20 $Gabc

=q<0@)8fJ8;z$O! "$=lKB3$/1J8;z! "$^$?$OCf%+%C%3$G0O$^l?bNKE,MQ5l^$9! #Cf%+%C%3Fb$K$O! "Nc$($P 2^{10} Nh$&$JDI2C$N=q<0J8;zNs$NJJ8;zNs$+! "$^$?$O%U%)%s%H$NB0@-$rJQ99$9$kDI2C@)8fJ8;zNs$rF~ lk3H$,$G$-$^$9! #0J2<$NNcO=$NCf%+%C%3$NF~$l;R$r<(7F$$$F! "%\!<%kIBNNA $K%$%?%j%C%/BN$N2<IU $-$NE:;zi$,$D$$$?bN,! "$$:lb8=:_$N%U%)%s%H$GIA$+$l$^$9! #3NNc$N:Normal $r<h$k$H! "2<IU$-$NE:;z$O%\!<%kIBNG$+$D%$%?%j%C%/BN$KJj$^$9! #

```
    {/:Bold A_{/:Normal{/:Italic i}}}
```

%U%)%s%H;XDj$O! "3+$-Cf%+%C%3'{' $ND>8e$KB3$/'/' N9$0<!$K=q$+JllP! V$$$1$^$;$s! W#

6u%\%C%/%9(phantom box) $Oa@^b_c $N>eIU$-J8;z$H2<IU$-J8;z$rB7$(kH$-$KM-MQG9$,! "J8;z$K"%/%; %s%H5-9f$r=E$M$k>19g$K$O&$^$/F/$-$^$;$s! #8e<T$NL\E*N?aK$O! "?'! 9$J"%/%;%s%Hd=$NB>$N%@%$%"%/ %j%F%#%+%k%^! <%/$N$"$kB?/$NJ8;z$r;}D%(%s3! <%I(Nc$($Piso_8859_1 $dutf8) $r;HMQ$9$kJ}$,$$$$G7$g $&! #0J2<;2>H: **set encoding (p. 121)**! #$=$N%\%C%/%9%O%9Z! <%7%s%0$,9T$Jol$J$$N$G! "%\%C%/%9Fb($D $^$jj@ $N8e$m) $N>eIU$-J8;z$d2<IU$-J8;z$rC;$/=PNO9kNKE,$7F$$$^$9! #

$"$kJ8;zNs$HF1$8D9$5$N%9%Z! <%9$rJ8;z'&' $r;H$&3H$GF~$lk3H,G-$^$9! #9JoA! "

```
        'abc&{def}ghi'
```

$O0J2<$r@8@.7^$9(abc $Hghi $N4V$O3J8;zJ,$N6uGr):

```
        'abc    ghi'
```

J8;z'~ ' $O! "<!$NJ8;z! "$^$?$O%+%C%3$G0O$^$l$?J8;zNs$K! "$=$l$KB3$/J8;z$^$?$O%+%C%3$G0O$^$l$?J8;zNs $r=E$M=q$-$7$^$9! #2HVL\$NJ8;z$O:G=i$NJ8;z$K"$o$;$F?eJ?J}8~$K%;%s%?%j%s%0$5l^$9! #$hCF'~ a/' $O

'a' $r4S$/h&$J%9%i%C%7%e$,F@il$^$9!#2 HVL\$NJ8;z$O!"$=$NA0$K?t;zrCV/3H$G?hD>J}8~$K0\F0$5$;k3H,G-$^$9!#$=$N?t;z$O8=:_$N%U%)%s%H%5%$:$KBP9k3d9g$r0UL#$7!"$=$l$K=>$C$FJ8;z$,>e$,$C$?$j2<$,$C$?$j7^$9!#$3$N>l9g?t;z$HJ8;zNs$O1 J8;z$h$jD9$/JkNG%+%C%3$G0O$'I,MW$,$"j^$9!#=E$M=q$-$5lkJ8;zNs$,?t;z$+$i;O$^CF$$$k>l9g$O!"?hD>$K$:$i$9CM$HJ8;zNsHN4V$K%9%Z!<%9$rF~lF$/$@$5$$('~{abc}{.5 000}')!#$=$l0J30$O%9%Z!<%9$OI1MW$G$9('~{abc}{.5 — }')!#0lJ}!"$"$k$$$ON>J}$N%U%)%s%H$rJQ99$9$k3HbG-$^$9('~a{.5 /*.2 o}';'a' $=$N1/5 NBg-5N'o'!"3N>l9g?t;z$H%9%i%C%7%e$N4V$N%9%Z!<%9$OI,MW$G$9) $,!"$=$NJ8;zNs$,;O$^$C$?8e$GJQ99$9$k3HOG-$^$;$s!#$=l>lNJ8;zNsFb$G!"B>$NFC<1$J=q<0$r;H$&3$HbG$-$^$;$s!#bAms!"'~a{\^}' Nh$&$KFC<1$JJ8;z$r%(%9%1!<%W%9%k3H(2<5-;2>H)$O2DG=$G$9!#

FC<15-9f$O!"8?JJ8;z%3!<%I$rM?$($k3H$G?t;z$G;XDjG-$^$9!#Nc$($P!"{/Symbol \245} $O!"Adobe Symbol %U%)%s%H$NL58BBg$N5-9f$G$9!#$7$+$7!"$3$1$O!" UTF-8 Nh$&$J%^%k%A%P%$%H%(%s%3!<%G%#%s%0$GO&$^$/$$$-$^$;$s!#UTF-8 4D6-$G$O!"%?%$%WBG$A!"$=$&$GJ1lP$"$J$?$,K>$'J8;z$rA*Vh$&$JJ}K!$G!"%^%k%A%P%$%HNs$r4V@\E*$KF~NOG-kh$&$K9Y-$G$9!#

@)8fJ8;z$O!"\\ $d\{ JINh$&$K\ $r;H$C$F%(%9%1!<%W%G$-$^$9!#

Fs=E0zMQIdFb$NJ8;zNs$OC10l0zMQIdFb$NJ8;zNs$H$O0[$JCF2r<a5lk3HKCm0U7F$/$@$5$$!#kg$J0c$$$O!"Fs=E0zMQIdFb$NJ8;zNs$G$O%P%C%/%9%i%C%7%e$O2 $D=E$MkI,MW,$"$k3H$G$9!#

gnuplot %=!<%9G[I[J*Fb$N/docs/psdoc %5%V%G%#%l%/%H%jK"$k%U%!%$%k"ps_guide.ps" $K!"3HD%$5l?=q<0$K4X$9kNc,:\$C$F$$$^$9!#F1MM$NbN$,%G%b

enhanced_utf8.dem

Kb$"$j$^$9!#

4D6-JQ?t (Environment)

gnuplot $OB?$/$N%7'%k4D6-JQ?t$rG'<1$7$^$9!#I,?\$NbNO"j^$;$s$,!";H$($PJ?XMx$KJk$+$bCNl^$;$s!#

GNUTERM $O!"$=l,Dj5A5l$F$$$l$P!"5/F0;~$N%G%U%)%k%H=PNO7A<0H7$F;H$ol^$9!#$3lO!"/.gnuplot ($^?$O$=$l$KAjEv$9$k) =i4|2=%U%!%$%k(0J2<;2>H **startup (p. 42)**) Kh$k;XDj$d!"bAms$=$N8e$NL@<(E*$J **set term** %3%^%s%IKh$k;XDj$GJQ99G-$^$9!#

GNUHELP $K%X%k%W%U%!%$%k(gnuplot.gih) $N%Q%9L>$rDj5A7F$*$/3H$,$G$-$^$9!#

VMS GO!"O@M}L>GNUPLOT$HELP $r **gnuplot** $N%X%k%W%i%$%V%i%j$NL>A0$H7FDj5A7^$9!#**gnuplot** $N%X%k%W$OG$0U$NVMS %7%9%F%'$N%X%k%W%i%$%V%i%j$KF~$lk3H,G-$^$9!#

Unix K*$$F$O!"%+%l%s%H%G%#%l%/%H%j$K.gnuplot $H$$&%U%!%$%k$,$J$$>l9gKO!"HOME $KDj5A$5l?%G%#%l%/%H%j$rC5$7$^$9!#MS-DOS, Windows, OS/2 GOGNUPLOT $,$=$NLr3d$K;Hol$^$9!#Windows GO!"NT @lMQ$NUJQ?tUSERPROFILE $b;2>H$5l^$9!#VMS GOSYS$LOGIN $G$9!#**help startup** HBGCF_F/$@$5$$!#

Unix K*$$F$O!"PAGER $,%X%k%W%a%C%;!<%8$N=PNOMQ$N%U%#%k%?$H7F;Hol$^$9!#

Unix GO!"SHELL $, **shell** %3%^%s%I$N:]$K;H$ol^$9!#MS-DOS, OS/2 GOCOMSPEC $, **shell** %3%^%s%I$N:]$K;H$ol^$9!#

FIT_SCRIPT $O!"Ev$FOa(fit) $,CfCG$5l?H-$K<B9T$9$k **gnuplot** %3%^%s%I$N;XDj$K;H$ol^$9!#0J2<;2>H **fit (p. 69)**!#**FIT_LOG** OEvFOaKh$k%m%0%U%!%$%k$N%G%U%)%k%H$N%U%!%$%kL>$N;XDj$K;H$ol^$9!#

GNUPLOT_LIB $O!"%G!<%?%d%3%^%s%I%U%!%$%k$N8!:w%G%#%l%/%H%j$rD12CDj5A9kNK;Hol$^$9!#=$NUJQ?t$O!"0lDN%G%#%l%/%H%jL>$+$^$?$OJ#?t$N%G%#%l%/%H%jL>$r=q$/$3H,G-$^$9,!"%G%#%l%/%H%j$N6h@Z$j$O%W%i%C%H[!<%Kh$K0c$$$^$9!#Nc$($PUnix GO':'$G!"MS-DOS, Windows, OS/2 GO';'$G$9!#GNUPLOT_LIB NCMOJQ?t **loadpath** $KDI2C$5l^9,!"$=$l$O **save** $d **save set** %3%^%s%I$G$OJ]B8$5l^$;$s!#

=PNO%I%i%$%P$NCfKOgd %i%$%V%i%j7PM3$GTrueType %U%)%s%H$r07$(kbNb$$$/D+$"$j$^$9!#3liN%I%i%$%P$N%U%)%s%H8!:w%Q%9$O!"4D6-JQ?tGDFONTPATH $G@)8f$G$-$^$9!#$5iK!"$=$liN%I%i%$%P$G$N%G%U%)%k%H$N%U%)%s%H$O4D6-JQ?tGNUPLOT_DEFAULT_GDFONT $G@)8f$G$-$^$9!#

postscript =PNO%I%i%$%P$O<+J,$G}$C$F$$$k%U%)%s%H8!:w%Q%9$r;H$$^9,!"$=$l$O4D6-JQ?t GNUPLOT_FONTPATH $G@)8f$G$-$^$9!#=q<0$OGNUPLOT_LIB $HF1$8$G$9!#GNUPLOT_FONTPATH NCMOJQ?t **fontpath** $KDI2C$5l^9,!"$=$l$O **save** $d **save set** %3%^%s%I$G$OJ]B8$5l^$;$s!#

PostScript %I%i%$%P$O! "30It (AH$_9~$^lF$$J$) Dj5A%U%!%$%k$rC5$9$?$a$K4D6-JQ?t GNUPLOT_PS_DIR $rMxMQ$7$^$9! #%$%s%9%H! <%k; ~$N: n6HKh$j! "gnuplot KO$=$liN%U%!%$%k$N%3%T! <$,AH$_9~$^lF$$k$+! " $^$?$O%G%U%)%k%H$N%Q%9$,Kd$a9~$^$l$F$$^$9! #$3$NJQ?t$O! "postscript =PNO7A<0$G%G%U%)%k%H$N%U%!%$%k$N Beoj$K%+%9%?%^%$%:7? prologue %U%!%$%k$r; HMQ9kNKMxMQG-$^$9! #0J2<; 2>H: **postscript prologue (p. 234)**! #

<0 (Expressions)

4pK\E*KOC, FORTRAN, Pascal, BASIC K*$$FMxMQ2DG=$J?t3XI=8=$r; HMQG-$^$9! #1i; ;; R$NM%@h=g0L $OC 8@8l$N; EMM$K=>$$^$9! #?t<0Cf$N6uGrJ8; z$H%?%VJ8; z$OL5; k5l$^$9! #

J#AG?t$NDj?t$O{<real>,<imag>} $HI=8=$7$^$9! #$3$3$G <real> $H <imag> (<BIt! "5uIt) $O?tCMDj?t$G$" kI,MW,$"j^$9! #Nc$ ($P{3,2} $O3 + 2i r"io$7! "{0,1} $O'i' <+?H$rI=7^$9! #$3liKOL@< (E*$KCf %+%C%3$r; H$&I,MW$,$"$j$^$9! #

@0?tDj?t$O! "C $N strtoll() %i%$%V%i%j%k! <%A%s$r; H$C$F2r<a$7$^$9$,! "$3lO! ""0" $G; O$^$kDj?t$O8 ?J?t $H! "$^$? "0x" $+ "0X" $G; O$^$kDj?t$O16 ?J?tH_J9$3$H$r0UL#$7$^$9! #

<B?t (IbF0>.?t) Dj?t$O! "C $N atof() %i%$%V%i%j%k! <%A%s$r; H$C$F2r<a$7$^$9! #

gnuplot $O "<B?t" $H "@0?t" 1i; ;$r FORTRAN $d C Nh$&$K07$&$H$$$&3H$KCm0U$7F/$@$5$$! #'1", "-10" JI$O@0?t$H8+J5$l! "'1.0", "-10.0", "1e1", 3.5e-1 JI$O<B?t$H8+J5l^$9! #$3li2 DNbC Hb=EMW$J0c$$$O3d; ;$G$9! #@0?t$N3d; ;$O@Z$j<N$Fil$^$9: 5/2 = 2! #<B?tO=$&$GO"j^$;$s: 5.0/2.0 = 2.5! #$=$li, : .: _7?<0$N>19g! "7W; ;$NA0$K@0?t$O<B?t$K "3HD%" 5l$^$9: 5/2e0 = 2.5! #Ii$N@0?t$r@5$N@0 ?t$G3d$k>19g! "$=NCMO%3%s%Q%$%i$KhCFUQoj^$9! #"print -5/2" H7$F! "$"J?$N%7%9%F% '$, -2 $H-3 NIAirEz (H9k+$r3NG'$7F/$@$5$$! #

?t<0 "1/0" $O "L$Dj5ACM (undefined)" %U%i%0$r@8@.$7! "$=$lKhj=$NE@$rL5; k7^$9! #$"$k$$$O! "$"$i$+ 8aDj5A5l$F$$$kCM NaN $r; H$CFbF1$8$3HKJj$^$9! #NcKD$$$F$O! "0J2<; 2>H: **using (p. 92)**! #

J#AG?tI=8=$N<B?tItJ,! "5u?tItJ,$O! "Is$J7A$GF~NO5lFb>o$K<B?t$G$9: {3,2} $N "3" $H "2" $O<B?t$G$" $j! "@0?t$GO"j^$;$s! #

gnuplot $OJ8; zNs$KBP9kC1=c$J1i; ;! "$*hSJ8; zNsJQ?t$bMxMQ$G$-$^$9! #Nc$ ($P<0 ("A" . "B" eq "AB") $O ?$HI>2A5l$^$9$,! "$3lOJ8; zNs$N7k9g1i; ;; R$HJ8; zNs$NEy9f1i; ;; R$r0UL#7F$$$^$9! #

?tH7FNCM$r4^$`J8; zNs$O! "$=l,?t<0$GMxMQ$5l?>19g$O! "BP1~$9$k@0?t$d<B?t$KJQ4 9$5l^$9! #$hCF! " ("3" + "4" == 7) $d (6.78 == "6.78") OIAi$b?KJj^$9! #@0?t$O! "$=l,J8; zNs7k9g1i; ;; R$G; Hol $?>19g$OJ8; zNs$KJQ4 9$5l^9,! "<B?t$dJ#AG?t$O%@%a$G$9! #E57?E*JNcO! "%U%!%$%kL>$dB>$NJ8; zNsFb$K@0 ?t$r; H$&>19gG7g& Nc$ ($P ("file" . 4 eq "file4") $O?$G$9! #

8eCV; XDj9kHC0C5-=R; R[beg:end] KhCF! "ItJ,J8; zNs$r; XDj$9k3H,G-$^$9! #Nc$ ($P! "'ABCDEF"[3:4] == "CD" $G! "'ABCDEF"[4:*] == "DEF" $G$9! #=q<0 "string"[beg:end] $O! "J8; zNsCM$NAH$_9~$_4X?t substr("strings",beg,end) $r8F$V3HH[$\F1$8G9$,! "4X?t8F$S=P7G$O beg, end $O>JN,$9k3HOG-$^ $;$s! #

4X?t (Functions)

FC$KCm0U$,J1lP! **"gnuplot** $N?t3X4X?t$N0z?t$O@0?t! "<B?t! "J#AG?t$NCM$r<h$k3H$,$G$-$^$9! #3Q$r0z?t dLajCMH9$k4X?t (Nc$ ($P sin(x)) $O! "$=NCMr%i%8%"%sH7$F07$$^9,! "3l$O%^%s$I **set angles** $K hCFEYKJQ9G-$^$9! #

?t3X%i%$%V%i%j4X?t		
4X?t	0z?t	La$jCM
abs(x)	G$0U	x $N@dBPCM, $\|x\|$; F1$87?
abs(x)	J#AG?t	x $ND9$5, $\sqrt{\text{real}(x)^2+\text{imag}(x)^2}$
acos(x)	G$0U	$\cos^{-1} x$ (%"!<%/%3%5%$%s)
acosh(x)	G$0U	%i%8%"%sGN $\cosh^{-1} x$ (5UAP6JM>89)
airy(x)	G$0U	%(%"%j!<4X?t Ai(x)
arg(x)	J#AG?t	x $NJP3Q

?t3X%i%$%V%i%j4X?t		
4X?t	0z?t	La$jCM
asin(x)	G$0U	$\sin^{-1} x$ (%"!<%/%5%$%s)
asinh(x)	G$0U	%i%8%"%sGN$\sinh^{-1} x$ (5UAP6J@589)
atan(x)	G$0U	$\tan^{-1} x$ (%"!<%/%?%s%8%'%s%H)
atan2(y,x)	@0?t$^$?$O<B?t	$\tan^{-1}(y/x)$ (%"!<%/%?%s%8%'%s%H)
atanh(x)	G$0U	%i%8%"%sGN$\tanh^{-1} x$ (5UAP6J@5@\)
EllipticK(k)	<B?t k $\in$ (-1:1)	$K(k)$ Bh1 <o40A4BJ1_@QJ,
EllipticE(k)	<B?t k $\in$ [-1:1]	$E(k)$ Bh2 <o40A4BJ1_@QJ,
EllipticPi(n,k)	<B?t n<1, <B?t k $\in$ (-1:1)	$\Pi(n,k)$ Bh3 <o40A4BJ1_@QJ,
besj0(x)	@0?t$^$?$O<B?t	J_0 %Y%C%;%k4X?t (0 <!%Y%C%;%k4X?t)
besj1(x)	@0?t$^$?$O<B?t	J_1 %Y%C%;%k4X?t (1 <!%Y%C%;%k4X?t)
besy0(x)	@0?t$^$?$O<B?t	Y_0 %Y%C%;%k4X?t (0 <!%N%$%^%s4X?t)
besy1(x)	@0?t$^$?$O<B?t	Y_1 %Y%C%;%k4X?t (1 <!%N%$%^%s4X?t)
ceil(x)	G$0U	$\lceil x \rceil$, x ($N<BIt) 0J>e$N:G>.$N@0?t
cos(x)	G$0U	x $N%3%5%$%s $\cos x$
cosh(x)	G$0U	$\cosh x$, x $N%O%$%Q%\%j%C%/%3%5%$%s
erf(x)	G$0U	erf(real(x)), x $N<BIt$N8m:94X?t
erfc(x)	G$0U	erfc(real(x)), 1.0 - (x $N<BIt$N8m:94X?t)
exp(x)	G$0U	e^x, x $N;X?t4X?t
expint(n,x)	@0?t $n \geq 0$, <B?t $x \geq 0$	$E_n(x) = \int_1^\infty t^{-n} e^{-xt}\,dt$, x $N;X?t@QJ,
floor(x)	G$0U	$\lfloor x \rfloor$, x ($N<BIt) 0J2<$N:GBg$N@0?t
gamma(x)	G$0U	gamma(real(x)), x $N<BIt$N%,%s%^4X?t
ibeta(p,q,x)	G$0U	ibeta(real(p,q,x)), p,q,x $N<BIt$NIT40A4%Y!<%?4X?t
inverf(x)	G$0U	x $N<BIt$N5U8m:94X?t
igamma(a,x)	G$0U	igamma(real(a,x)), a,x $N<BIt$NIT40A4%,%s%^4X?t
imag(x)	J#AG?t	x $N5u?tItJ, (<B?t)
invnorm(x)	G$0U	x $N<BIt$N5U@55,J,I[4X?t
int(x)	<B?t	x $N@0?tItJ, (0 $K8~$+CF4]$a)
lambertw(x)	<B?t	Lambert W 4X?t
lgamma(x)	G$0U	lgamma(real(x)), x $N<BIt$N%,%s%^BP?t4X?t
log(x)	G$0U	$\log_e x$, x $N<+A3BP?t (Dl e)
log10(x)	G$0U	$\log_{10} x$, x $NBP?t (Dl 10)
norm(x)	G$0U	x $N<BIt$N@55,J,I[(%,%&%9J,I[) 4X?t
rand(x)	@0?t	6h4V[0:1] Fb$N5?;wMp?t@8@.4o
real(x)	G$0U	x $N<BIt
sgn(x)	G$0U	$x>0$ Ji1, $x<0$ Ji-1, $x=0$ Ji0. x $N5uIt$OL5;k
sin(x)	G$0U	$\sin x$, x $N%5%$%s
sinh(x)	G$0U	$\sinh x$, x $N%O%$%Q%\%j%C%/%5%$%s
sqrt(x)	G$0U	$\sqrt{x}$, x $NJ?J}:,
tan(x)	G$0U	$\tan x$, x $N%?%s%8%'%s%H
tanh(x)	G$0U	$\tanh x$, x $N%O%$%Q%\%j%C%/%?%s%8%'%s%H
voigt(x,y)	<B?t	Voigt/Faddeeva 4X?t $\frac{y}{\pi}\int \frac{exp(-t^2)}{(x-t)^2+y^2}dt$
		Cm0U: voigt(x,y) = $real$(faddeeva($x+iy$))

libcerf (MxMQ2DG=$J>19g$N$_) Kh$kFC<l4X?t		
4X?t	0z?t	La$jCM
cerf(z)	J#AG?t	J#AG8m:94X?t
cdawson(z)	J#AG?t	Dawson @QJ, $D(z) = \frac{\sqrt{\pi}}{2} e^{-z^2} erfi(z)$ $NJ#AG3HD%
faddeeva(z)	J#AG?t	:F%9%1!<%k2=J#AG8m:94X?t $w(z) = e^{-z^2}\ erfc(-iz)$
erfi(x)	<B?t	5u8m:94X?t $erf(x) = -i * erf(ix)$
VP(x,σ,γ)	<B?t	Voigt %W%m%U%!%$%k $VP(x,\sigma,\gamma) = \int_{-\infty}^{\infty} G(x';\sigma)L(x-x';\gamma)dx'$

J8; zNs4X?t		
4X?t	0z?t	JV$jCM
gprintf("format",x,...)	G$0U	gnuplot $N=q<02r@O4o$rE,MQ7?7k2L$NJ8; zNs
sprintf("format",x,...)	J#?t8D	C 8@8l$N sprintf NJV9J8; zNs
strlen("string")	J8; zNs	%P%$%HC10L$G$NJ8; zNs$ND9$5 (@0?t)
strstrt("string","key")	J8; zNs	ItJ,J8; zNs "key" $,8=$l$k@hF,0LCV
substr("string",beg,end)	J#?t8D	J8; zNs "string"[beg:end]
strftime("timeformat",t)	G$0U	gnuplot Kh$k; ~9o2r@O7k2L$NJ8; zNs
strptime("timeformat",s)	J8; zNs	J8; zNs s $rJQ49$7$? 1970 G/$+iNIC?t
system("command")	J8; zNs	%7%'%k%3%^%s%I$N=PNO$r; }$DJ8; zNs
word("string",n)	J8; zNs, @0?t	J8; zNs "string" $N n HVL\$NC18l
words("string")	J8; zNs	J8; zNs "string" Cf$NC18l?t

B>$N **gnuplot** $N4X?t		
4X?t	0z?t	JV$jCM
column(x)	@0?t$+J8; zNs	%G!<%?%U%!%$%k=hM}Cf$N x NsL\
columnhead(x)	@0?t	%G!<%?%U%!%$%k$N:G=i$N x NsL\Cf$NJ8; zNs
exists("X")	J8; zNs	JQ?tL>X $,Dj5A$5lF$$$l$P 1, $=$&GJ1l$P 0
hsv2rgb(h,s,v)	h,s,v ∈ [0:1]	24 %S%C%H RGB ?'CM
stringcolumn(x)	@0?t$+J8; zNs	J8; zNsH7FN x NsL\$NFbMF
timecolumn(N,"timeformat")	@0?t, J8; zNs	%G!<%?F~NOCf$N N NsL\$NF|; ~%G!<%?
tm_hour(x)	@0?t	;~
tm_mday(x)	@0?t	F|
tm_min(x)	@0?t	J,
tm_mon(x)	@0?t	7n
tm_sec(x)	@0?t	IC
tm_wday(x)	@0?t	$=$N=5$N2?F|L\
tm_yday(x)	@0?t	$=$NG/$N2?F|L\
tm_year(x)	@0?t	@>Nq
time(x)	G$0U	8=:_$N%7%9%F%';~9o
valid(x)	@0?t	%G!<%?Cf$N column($x$) $N@5Ev@-
value("name")	J8; zNs	L>A0 name $NJQ?t$N8=:_$NCM

<o!9$NBJ1_@QJ, (elliptic integrals)

4X?t **EllipticK(k)** $O!"Bh1 <o40A4BJ1_@QJ,!"$9Jo$A!"4X?t **(1-(k*sin(p))**2)**(-0.5)** $N0 $+$i&P/2 $^$G$NHC0O$N9-5A@QJ,NCMrJV7^$9!#**k** $NDj5A0h$O-1 $+$i1 $G$9(N>C<$O4^$^$J$$)!#

4X?t **EllipticE(k)** $O!"Bh2 <o40A4BJ1_@QJ,!"$9Jo$A!"4X?t **(1-(k*sin(p))**2)**0.5** $N0 $+$i&P/2 $^$G$NHC0O$N9-5A@QJ,NCMrJV7^$9!#**k** $NDj5A0h$O-1 $+$i1 $G$9(N>C<$Ob4^$')!#

4X?t **EllipticPi(n,k)** $O!"Bh3 <o40A4BJ1_@QJ,!"$9Jo$A4X?t **(1-(k*sin(p))**2)**(-0.5)/(1-n*sin(p)**2)** $N0 $+$i&P/2 $^$G$NHC0O$N9-5A@QJ,NCMrJV7^$9!#%Q%i%a!<%?**n** $O1 hj>.5/!"**k** $O-1 $H1 $N4V(N>C<$O4^$^$J$$) GJ1l$P$$$1$^$;$s!#Dj5A$h$j!"$9YF$N@5$N**k** KBP7EllipticPi(0,k) == EllipticK(k) G"k3HKCm0U7F$/$@$5$$!#

Mp?t$N@8@. (random)

4X?t **rand()** $O0 $H1 $N4V$N5?;wMp?tNs$r@8@.$7$^$9!#3l$O0J2<$+iN"%k%4%j%:%'$r;HMQ$7$F$$$^$9: P. L'Ecuyer and S. Cote, "Implementing arandom number package with splitting facilities", ACM Transactions onMathematical Software, 17:98-111 (1991).

```
rand(0)     FbIt$K;}$D 2 $D$N 32bit $N<o (seed) $N8=:_$NCM$+$i@8
            @.$5$l$k [0:1] 6h4VFb$N5?;wMp?tCM$rJV$9
rand(-1)    2 $D$N<o$NCM$rI8=`CM$KLa$9
rand(x)     0 < x < 2^31-1 $N@0?t$J$i<o$NN>J}$r x $K@_Dj$9$k
```

```
rand({x,y}) 0 < x,y < 2^31-1 $N@0?t$J$i seed1 $r x $K seed2 $r y
            $K@_Dj$9$k
```

Value

A $,%f!<%6!<Dj5AJQ?t$NL>A0G"lP!"B = value("A") $O;v<B>e B = A $HA4$/F1$8$G$9!#$3lO!"JQ?t$NL>A0<+?H$,J8;zNsJQ?t$K<}$ail$F$$$k>19g$KM-MQ$G$9!#0J2<;2>H: **user-defined variables (p. 33)**!#3l$O!"JQ?tL>$r%G!<%?%U%!%$%k$+iFI_<hk3Hb2DG=$K$7^$9!#0z?t$,?t<0G"$k>19g!"value() O=$N?t<0$NCMrJV7$^$9!#0z?t$,J8;zNs$G!"Dj5A5l$F$$$kJQ?t$KBP1~$9kbN,J>19g!"value() $O NaN rJV7$^$9!#

C181l$N<h$j=P7HC181l?t **(word, words)**

word("string",n) $O!"J8;zNs (string) $Nn HVL\$NC181lrJV7$^$9!#Nc$ ($P **word("one two three",2)** $OJ8;zNs "two" rJV7$^$9!#

words("string") $O!"J8;zNs (string) $NC181l?t$rJV7^$9!#Nc$ ($P! **"words(" a b c d")** $O4 rJV7$^$9!#

4X?t **word** $H **words** $O!"C10l0zMQId!"Fs=E0zMQId$G0O$^l?J8;zNs$b!"8EDjE*$G9,%5%]!<%H7F$$$^$9:

```
print words("\"double quotes\" or 'single quotes'")   # 3
```

3+;O0zMQId$NA0$O!"%9%Z!<%9$+!"$^$?$OJ8;zNs$N@hF,$GJ1lP$$$1$^$;$s!#$3lO!"C181lFb!"$"$k$$$OC181l=*ojKD/%"%]%9%H%m%U%#!<(') $O!"$=l>lNC181l$NMWAG$G$"$k$H8+$J5lk3Hr0UL#7^$9:

```
print words("Alexis' phone doesn't work") # 4
```

0zMQIdJ8;z$N%(%9%1!<%W$O%5%]!<%H7F$$^$;$sNG!"$"$k0zMQId$r0];}$7$?$$>19g$O!"$=l>lrJIL$N<dN`$N0zMQId$G0O$^J1lP$$$1$^$;$s:

```
s = "Keep \"'single quotes'\" or '\"double quotes\"'"
print word(s, 2) # 'single quotes'
print word(s, 4) # "double quotes"
```

:G8eNNcG$O!"0zMQId$N%(%9%1!<%W$,J8;zNs$ND;5A;~N_KI,MWG$"$k3H$KCm0U$7F/$@$5$$!#

1i;;;R (Operators)

gnuplot $N1i;;;R$O!"C 8@81l$N1i;;;R$H$[$\F1$8$G9,!"FC$KCm0U$,J1lPA4FN1i;;;R$,@0?t!"<B?t!"J#AG?t$N0z?t$r<h$k3H$,$G$-$^$9!#$^$?!"FORTRAN $G;H$($k** (N_>h) 1i;;;R$b%5%]!<%H5l$F$$^$9!#

1i;;$NI>2A$N=g=x$rJQ9$9kK$O+$C3r;H$$^$9!#

C19`1i;;;R (Unary)

0J2<$O!"C19`1i;;;R$H$=$N;HMQK!$N0lMw$G$9:

C19`1i;;;R		
5-9f	Nc	@bL@
-	-a	%^%$%J%9Id9f
+	+a	%W%i%9Id9f (2?b7J)
~	~a	* 1 $NJd?t (%S%C%HH?E>)
!	!a	* O@M}E*H]Dj
!	a!	* 3,>h
$	$3	* `using` FbGN0z?t/Ns;XDj

@bL@$K@10u (*) ND$$$?1i;;;R$N0z?t$O@0?tGJ1lPJj^$;$s!#

1i;;;R$NM%@h=g0L$OFortran $dC $HF1$8$G$9!#$=$liN8@81F1MM!"1i;;$NI>2A$5lk=g=xrJQ(k?aK$+$C3,;Hol$^$9!#hC$F-2**2 = -4 $G!"(-2)**2 = 4 $G$9!#

3,>h1i;;;R$O!"Bg$-$$JCMrJV;kh$&$K<B?trJV7$^$9!#

Fs9 '1i;;R (Binary)

0J2<$O!"Fs9 '1i;;R$H$=$N;HMQK!$N0lMw$G$9:

Fs9 '1i;;R		
5-9f	Nc	@bL@
**	a**b	N_>h
*	a*b	@Q
/	a/b	>&
%	a%b	* M>$j
+	a+b	OB
-	a-b	:9
==	a==b	Ey$7$$
!=	a!=b	Ey7/$J$$
<	a<b	hj>.$5$$
<=	a<=b	0J2<
>	a>b	hjBg$-$$
>=	a>=b	0J>e
<<	0xff<<1	Id9f$J$7:8%7%U%H
>>	0xff>>1	Id9f$J$71&%7%U%H
&	a&b	* %S%C%H@Q (AND)
^	a^b	* %S%C%HGSB>E*O@M}OB (XOR)
|	a|b	* %S%C%HOB (OR)
&&	a&&b	* O@M}E* AND
||	a||b	* O@M}E* OR
=	a = b	BeF~
,	(a,b)	N_<!I>2A
.	A.B	J8;zNs$NO"7k
eq	A eq B	J8;zNs$,Ey$7$$
ne	A ne B	J8;zNs$,Ey$7$/$J$$

@bL@$K@10u (*) ND$$?1i;;R$N0z?t$O@0?tGJ1lPJj^$;$s!#BgJ8;z$N A,B $O1i;;R$,J8;zNs0z?t$rMW5a$9k3Hr0UL#7^$9!#

O@M}1i;;R$N AND (&&) $H OR (||) $OC 8@8lF1MM$KI,MW:G>.8B$NI>2A$7$+$7$^$;$s!#$9Jo$A!"&& $NBh2 0z?t$O!"Bh1 0z?t$,56$JiPI>2A5l$^$;s7!"|| $NBh2 0z?t$O!"Bh1 0z?t$,??$JiPI>2A5l$^$;$s!#

N_<!I>2A (,) $O!"%+%C%3$NCfGN$_I>2A$5$l!":8$+$i1&$X=g$K<B9T$9k3H,J]>Z5l!":G$b1&$N<0NCM,JV5l$^$9!#

;09 '1i;;R (Ternary)

0lD@$1;09 '1i;;R$,$"$j$^$9:

;09 '1i;;R		
5-9f	Nc	@bL@
?:	a?b:c	;09 '1i;;R

;09 '1i;;R$OC NbNHF1$8F/$-r7$^$9!#:G=i$N0z?t (a) $O@0?t$GJ1lP$$$1$^$;$s!#$3NCM,I>2A5l!"$=$l$,??(%<%m$G$J$$) JiP2 HVL\$N0z?t (b) $,I>2A$5l=NCM,JV5l!"$=$&GJ1l$P3 HVL\$N0z?t (c) $,I>2A$5$l!"$=NCM,JV5l$^$9!#

;09 '1i;;R$O!"6hJ,E*$KDj5A5l$?4X?t$d!"$"$k>r7o$,K~$?5l$?>l9g$KN_E@$rIA2h$9$k!"$H$$C$?$3Hr9TJ&>l9g$KM-MQ$G$9!#

Nc:

0 <= x < 1 GO sin(x) $K!"1 <= x < 2 GO 1/x KEy7$/$F!"$=$l0J30$Nx GOCDj5A5l$J$$4X?t$rIA2h

```
f(x) = 0<=x && x<1 ? sin(x) : 1<=x && x<2 ? 1/x : 1/0
plot f(x)
```

gnuplot OLDj5ACMKBP7FO2?$bI=< ($;$:$K$?$@L5;k9kNG! ":G8e$N>l9g$N4X?t (1/0) $CE@$r2?$b=PNO$7 $J$$3HKCm0U7F$/$@$5$$! #$^$?! "3N4X?tIA2h$NIA2h%9%?%$%k$, lines (@~IA2h) $N>l9g! "ITO"B3E@ (x=1) $N=j$bO"B34X?tH7$F@~$,7kPlF7$^$&3HKbCm0U7F$/$@$5$$! #$=$NE@$rITO"B3K$Jkh$&$K9kKO! " 4X?t$r2 DNItJ,$=l>lKJ,$1F/$@$5$$(3Nh&$J>l9g! "G^2pJQ?t4X?t$r;H$&$N$,JXMx$G$9)!#

%U%!%$%k'file' $N%G!<%?$G! "4 NsL\$N%G!<%?$,Ii$G$J$$H$-$@$1! "1 NsL\$N%G!<%?$K4X$9$k2 NsL\$H3 NsL\$N %G!<%?$NJ?6QCM$rIA2h:

```
plot 'file' using 1:( $4<0 ? 1/0 : ($2+$3)/2 )
```

using $N=q<0$N@bL@$K4X$7FO! "0J2<;2>H: **plot datafile using (p. 92)**!#

OB (Summation)

OB$N<0$O! "0J2<$N7A<0$GI=7^$9:

```
sum [<var> = <start> : <end>] <expression>
```

$3$3$G <var> $O! "<start> $+$i <end> $^$G$N@0?tCM$r=g$K<h$k@0?tJQ?tH7$F07$ol^$9! #$=$N3FCM$KBP 7F! "<0 <expression> NCM,9g7WCM$KDI2C$5$l! ":G=*E*$J9g7WCM$,$3NOBN<0NCMHJj$^$9! #Nc:

```
print sum [i=1:10] i
    55.
# 0J2<$O plot 'data' using 1:($2+$3+$4+$5+$6+...) $HF1Ey
plot 'data' using 1 : (sum [col=2:MAXCOL] column(col))
```

<expression> $O! "I,$:7bJQ?t <var> $r4^$`I,MWO"j^$;$s! #<start> $H<end> $OJQ?tCM$d?t<0$G;XDj bG$-$^9,! "$=$liNCM$OF0E*$KJQ9$9$k3HOG$-$^$;$s! #$=$&GJ$$HI{:nMQ$,5/$3$jF@$^$9! #<end> $,<start> hj>.$5$$>l9g$O! "OB$NCM$O0 HJj^$9!#

Dj5A:Q$_JQ?t (Gnuplot-defined variables)

gnuplot $O! "%W%m%0%i%`$N8=:_$NFbIt>uBV$HD>A0$NIA2h$rH?1G9kh&JFI_=P$7@lMQ$NJQ?t$r$$/D+;}CF $$^$9! #$3li$NJQ?t$NL>A0$O! "Nc$ ($PGPVAL_TERM, GPVAL_X_MIN, GPVAL_X_MAX, GPVAL_Y_MIN Nh$&$K"GPVAL_" $G;O$^j^$9! #$3li9YFN0lMwH=NCMr8+kK$O! "**show variables all** $HF~NO$7 F/$@$5$$! #$?$@$7! "<4$N%Q%i%a!<%?$K4XO"$9$kCM(HCOO! "BP?t<4$G$"$k$+Ey) $O! "8=:_**set** 7?bNGO$J $/! ":G8e$KIA2h5l$?$bN,;HMQ5l$^$9!#

Nc:E@[X,Y] $N%9%/%j!<%sHf$G$N:BI8$r7W;;9kJ}K!

```
GRAPH_X = (X - GPVAL_X_MIN) / (GPVAL_X_MAX - GPVAL_X_MIN)
GRAPH_Y = (Y - GPVAL_Y_MIN) / (GPVAL_Y_MAX - GPVAL_Y_MIN)
SCREEN_X = GPVAL_TERM_XMIN + GRAPH_X * (GPVAL_TERM_XMAX - GPVAL_TERM_XMIN)
SCREEN_Y = GPVAL_TERM_YMIN + GRAPH_Y * (GPVAL_TERM_YMAX - GPVAL_TERM_YMIN)
FRAC_X = SCREEN_X * GPVAL_TERM_SCALE / GPVAL_TERM_XSIZE
FRAC_Y = SCREEN_Y * GPVAL_TERM_SCALE / GPVAL_TERM_YSIZE
```

FI$_=P$7@lMQJQ?tGPVAL_ERRNO $O! "G$0U$NgnuplotコマンドA$aKAa/=*oCF7$^$C $?>l9g$K0 GJ$$$CM$K%;%C%H$5$l! "D>A0$N%(%i!<%a%C%;!<%8$OJ8;zNsJQ?tGPVAL_ERRMSG $KJ]B8$5l^ $9!#GPVAL_ERRNO $HGPVAL_ERRMSG $O! "%3%^%s%I**reset errors** $r;H$C$F%j%"$G$-$^$9!#

mouse 5!G=$,;H$($kBPOC7?F~=PNO7A<0$O! ""MOUSE_" $G;O$^kFI_=P$7@lMQJQ?t$r$$/D+;}CF$$^$9!# >\:Y$O! "0J2<;2>H: **mouse variables (p. 41)**!#

fit 5!G=$O! ""FIT_" $G;O$^$k$$/D+$NJQ?t$r;HMQ7^9N$G! "$=Nh$&$JL>A0$r;H$&NOHr1kY-G7$g $&!#**set fit errorvariables** $r;HMQ$9kH! "3FEvFO$aJQ?t$N%(%i!<$O! "$=$N%Q%i%a!<%?L>$K"_err" $rDI2C$7 $?JQ?t$KJ]B8$5$l$^$9!#>\:Y$O! "0J2<;2>H: **fit (p. 69)**!#

0J2<$b;2>H: **user-defined variables (p. 33)**, **reset errors (p. 104)**,**mouse variables (p. 41)**, **fit (p. 69)**!#

%f!<%6Dj5A$NJQ?t$H4X?t (User-defined)

?7$?$J%f!<%6Dj5AJQ?t$H1 8D$+$i12 8D$^GN0z?t$r;}$D%f!<%6Dj5A4X?t$r!"G$0U$N>l=j$GDj5A7?$j;H$C$?$j9k3H$,$G$-$^$9!#$=lO **plot** %3%^%s%I>eGb2DG=$G$9!#

```
%f!<%6Dj5A4X?t=q<0:
     <func-name>( <dummy1> {,<dummy2>} ... {,<dummy12>} ) = <expression>
```

$3$3$G <expression> $O2>JQ?t <dummy1> $+$i <dummy12> $GI=$5lk?t<0$G$9!#

```
%f!<%6Dj5AJQ?t=q<0:
     <variable-name> = <constant-expression>
```

Nc:

```
     w = 2
     q = floor(tan(pi/2 - 0.1))
     f(x) = sin(w*x)
     sinc(x) = sin(pi*x)/(pi*x)
     delta(t) = (t == 0)
     ramp(t) = (t > 0) ? t : 0
     min(a,b) = (a < b) ? a : b
     comb(n,k) = n!/(k!*(n-k)!)
     len3d(x,y,z) = sqrt(x*x+y*y+z*z)
     plot f(x) = sin(x*a), a = 0.2, f(x), a = 0.4, f(x)
     file = "mydata.inp"
     file(n) = sprintf("run_%d.dat",n)
```

:G8e$N2 9T$NNc$O!"%f!<%6Dj5AJ8;zNsJQ?t$H!"%f!<%6Dj5AJ8;zNs4X?t$r0UL#$7$F$$$^$9!#

JQ?t **pi** (3.14159...) $H **NaN** (IEEE Hs?t ("Not a Number")) O"i+8aDj5A5l$F$$$^$9!#$3li$,I,MW$J1l$P!"B>$NbN$K:ED j5A$9k3Hb2DG=G9$7!"0J2<$Nh&K7$F85$NCM$KI|5"$9k3HbG-$^$9:

```
     NaN = GPVAL_NaN
     pi  = GPVAL_pi
```

B>Kb$$$/D+$NJQ?t$,!"Nc$($PBPOC7?F~=PNO7A<0GN%^%&%9A`:ndEvFOa(fit) JI$N gnuplot $NF0:n>uBV$K1~8ED j5A5l$^$9!#>\:Y$O0J2<;2>H: **gnuplot-defined variables (p. 32)**!#

$"$kJQ?t V $,4{$KDj5A5l$F$$$k$+$I$&$+$O!"<0 exists("V") $G%A%'%C/$G$-$^$9!#Nc:

```
     a = 10
     if (exists("a")) print "a is defined"
     if (!exists("b")) print "b is not defined"
```

JQ?tL>$d4X?tL>$NL?L>5,B'$O!"BgDq$N%W%m%0%i%_%s%08@8l$HF1$8$G!"@hF,$O%"%k%U%!%Y%C%H$G!"$=$N8e$NJ8;z$O%"%k%U%!%Y%C%H!"?t;z!""_" $,;H$($^$9!#

3F4X?t$NDj5A<0$O!"GPFUN_' $H$$&@\F,<-$r;}$DFCJL$JJ8;zNsCMJQ?t$H7FMxMQG-$^$9!#

Nc:

```
     set label GPFUN_sinc at graph .05,.95
```

0J2<;2>H: **show functions (p. 127)**, **functions (p. 96)**, **gnuplot-defined variables (p. 32)**,**macros (p. 44)**, **value (p. 30)**!#

%U%)%s%H

gnuplot $=$l<+?HKOIs$J%U%)%s%H$b4^$^$lFO$*$i$:!"30It%U%)%s%H=hM}$KMjCF$$$k$@$1$G!"$=$N:YIt$OHa$7$$3HK=PNO7A<0Kh$K0[$Jj^$9!#$3$3$G$O!"J#?t$N=PNO7A<0KE,MQ5lk%U%)%s%H5!9=KD$$F@bL@7^$9!#$3$3$K>e2?bN0J30$N=PNO7A<0$G$N%U%)%s%H$N;HMQ$K4X$7FO!"$=$N=PNO7A<0$N%I%-%e%a%s%H$r;2>H7F$/$@$5$$!#

0l;~E*$K!"Nc$($P Adobe Symbol %U%)%s%H$N;h$&$JFCJL$J%U%)%s%H$K@ZjBX(k3HG%"%k%U%!%Y%C%HGO$J$$$5$9f$rF~lk3H$b2DG=$G9,!"8=:_$O!"UTF-8 %(%s%3!<%G%#%s%0$r;HMQ$7$F!"I,MW$J5-9f$r;X$9Unicode %(%s%H%j$r;XDj$9kH$$&J}K!$,$"j^$9!#0J2<;2>H: **encoding (p. 121)**, **locale (p. 137)**!#

Cairo (pdfcairo, pngcairo, epscairo, wxt =PNO7A<0)

$3$1iN=PNO7A<0$O! "%U%)%s%H$N8!:w$H%"%/%;%9$K30It$N fontconfig %D!<%k72$r;HMQ7^$9!#

```
fontconfig %f!<%6%^%K%e%"%k
```

$r;2>H$7F/$@$5$$!#$3$1$O! "gnuplot $G0lHIE*$JL>A0$d%5%$%:$G%U%)%s%H$rMW5a9k3H$r2DG=$K$7!"I,MW$JiP fontconfig $KF1Ey$N%U%)%s%H$rBeMQ$5$;$k3HbG$-$kNG! "DI>oO3$1$G==J,G7g&!#0J2<$O! "B?J,$$$:1b5!G=7^$9:

```
set term pdfcairo font "sans,12"
set term pdfcairo font "Times,12"
set term pdfcairo font "Times-New-Roman,12"
```

Gd (png, gif, jpeg terminals)

png, gif, jpeg =PNO7A<0$N%U%)%s%H=hM}$O! "30It%i%$%V%i%jlibgd KhCF9To1$^$9!#libgd $O! "<!$N5<cN`$N4pK\%U%)%s%H$rD>@\Ds6!7F$$$^$9: **tiny** (5x8 %T%/%;%k), **small** (6x12 %T%/%;%k), **medium**, (7x13 Bold), **large** (8x16), **giant** (9x15 %T%/%;%k)!#$3$1iN%U%)%s%HOBg-5rJQ99$7$?$j2sE>$7$?$j9k3HOG$-$^$;$s!#;HMQ9k:]$O! "**font** %-!<%o!<%I$NBeoj$K>e$N%-!<%o!<%I$r;XDj$7$^$9!#Nc:

```
set term png tiny
```

B?$/$N%7%9%F%`$G! "libgd $O Adobe Type 1 %U%)%s%H(*.pfa) $H TrueType %U%)%s%H$X$N%"%/%;%9$bDs6!7^$9!#$=$N>19g%U%)%s%H<+?H$NL>A0GOJ/! "%U%)%s%H%U%!%$%k$NL>A0$r! ""<face> {,<pointsize>}" $N7A<0$GM?$($^$9!#$3$3$G! "<face> $O%U%)%s%H%U%!%$%k$N%U%k%Q%9L>$+! "$^$?$O4D6-JQ?tGDFONTPATH $G;X<($5$1$k%G%#%l%/%H%j$N0l$DNCfN%U%!%$%kL>$N@hF,ItJ,! "$N$$$:1+$G$9!#hC$F! "set term png font "Face"' $O! "<$"$k%G%#%l%/%H%j>/Face.ttf $+<$"$k%G%#%l%/%H%j>/Face.pfa $H$$$&%U%!%$%kL>$N%U%)%s%H$rC5$=$&$H7^$9!#Nc$($P! "GDFONTPATH $K/**usr/local/fonts/ttf:/usr/local/fonts/pfa** $,4^$^1F$$k>19g$O! "0J2<$N%3%^%s%I$N2$D$:$D$O$$:1bF1$8$3HKJj$^$9:

```
set term png font "arial"
set term png font "/usr/local/fonts/ttf/arial.ttf"
set term png font "Helvetica"
set term png font "/usr/local/fonts/pfa/Helvetica.pfa"
```

%G%U%)%k%H$N%U%)%s%H%5%$%:$bF1;~$K;XDj9kKO:

```
set term png font "arial,11"
```

TrueType $H Adobe Type 1 %U%)%s%H$O! "40A4KBg-5NJQ99$d2sE>$,2DG=$G$9!#"set term" %3%^%s%I$G%U%)%s%H$r;XDj7J$+$C$?>19g! "gnuplot OJLN%G%U%)%k%H%U%)%s%H$N@_Dj$,$"$k$+$I$&$+$rD4$Yk?aK4D6-JQ?tGNUPLOT_DEFAULT_GDFONT $r;2>H$7$^$9!#

Postscript (%+%W%;%k2=**postscript *.eps** $b)

PostScript %U%)%s%H=hM}$O! "%W%j%s%?$+I=<(%=%U%H$,9T$$^$9!#$b$7! "$"J?$N%3%s%T%e!<%?$K%U%)%s%H$,0l@Z$J$/$F$b! "gnuplot $O@5$7$$PostScript %U%!%$%k! "$^$?$O%+%W%;%k2=PostScript (*.eps) %U%!%$%k$r@8@.G-$^$9!#gnuplot $OC1$K=PNO%U%!%$%kCf$K%U%)%s%H$rL>A0$H7FF~lk$@$1$G! "%W%j%s%?$dI=<(%=%U%H$,$=$NL>A0$+$i%U%)%s%H$r8+D1k+6a;w9k3H$r2>Dj$7$F$$$^$9!#

PostScript %W%j%s%?$dI=<(%=%U%H$O%9%Y%F! "I8=`E*$J Adobe %U%)%s%H;%C%H **Times-Roman**, **Helvetica**, **Courier**, **Symbol** $OCN$C$F$$k$O:$G$9!#B?J,$=$NB>$K$bB?$/$N%U%)%s%H,;H$($k$h$&$K$J$C$F$$k$H;W$$$^$9$,! "$=$1$iFCDj$N%U%)%s%H;%C%H$O"$J$?$N%7%9%F%`$d%W%j%s%?$N@_Dj$K0MB8$7$^$9!#gnuplot $O! "$=1OCNj^;s75$$Kb7$^;$s!#gnuplot $,:n@.$7$?*.ps $d*.eps =PNO$O! "$"$J$?NMW5a$7$?%U%)%s%HL>$rC1$K;}$C$F$$k$@$1$G$9!#

hC$F! "

```
set term postscript eps font "Times-Roman,12"
```

$O! "$9YF$N%W%j%s%?$dI=<(%=%U%H$KE,@Z$J=PNO$r:n@.$7$^$9!#

0lJ}! "

```
set term postscript eps font "Garamond-Premier-Pro-Italic"
```

$O! "@5$7$$ PostScript $r4^$ \=PNC%U%!%$%k$r:n@.7^9,!"$=$l$OFC<l$J%U%)%s%H$r;2>H$7$^$9NG!"0lIt$N%W%j%s%?$dI=<(%=%U%H7+!'MW5a7?$=$NFCDj$N%U%)%s%H$OI=<(G-$J$$$G7g$&!#BgDq$N>l9gOJLJ%U%)%s%H$GBeMQ$5l^$9!#

7+$7!";XDj$7$?%U%)%s%H$r=PNC%U%!%$%kCf$KKd$a9~$s$G!"$IsJ%W%j%s%?Gb$=$l$r;H$&h&K9k3Hb2DG=$G$9!#3lKO!"$"$J$?N%7%9%F%`$KE,@Z$J%U%)%s%H5-=R%U%!%$%k$,$"$k$3$H$,I,MW$H$J$j$^$9!#$3$NJ}K!$G%U%)%s%H$rKd$a9~$`>l9g!"FCDj$N%i%$%;%s%9$,I,MWHJ$k%U%)%s%H%U%!%$%kb"k3HKCm0U7F$/$@$5$$!#hj>\:Y$J@bL@$dNcKD$$$F$O!"0J2<;2>H:**postscript fontfile (p. 233)**!#

%X%k%W$NMQ8l2r@b (Glossary)

3N%I%-%e%a%s%HA4BNKECC$F!'MQ8l$K4X9k0l4S@-$N0];}$,9M$($ilF$$$^$9!#$7$+$7$3$N;n$_$O40A4KO@.8y7F$$$^$;$s!#$=$l$O **gnuplot** $,;~4V$r$+$1$F?J2=$7F-$?$h$&$K!"%3%^%s%I@%-!<%o!<%I$NL>A0$b$=$Nh&$J40A4@-$rGS=|9k$+$Nh&$K:NMQ$5lFMh$F$$$k$+$i$G$9!#3N%;%/%7%g%sGO!"3liN%-!<%o!<%I$N$$/D+$,$INh$&$K;Hol$F$$$k$+$r@bL@7^$9!#

"%Z!<%8(page)"!'"I=<(2hLL(screen)"!'"%-%c%s%P%9(canvas)"$O!"**gnuplot** $,%"%/%;%92DG=$JNN0hA4BN$r;X$7$^$9!#%G%9%/%H%C%WGO$=$l$O%&#%s%I%&A4BN$r;X$7!"%W%m%C%?$G$O!"0lKg$N;fA4BN!"svga %b!<%IGO!"%b%K%?%9%/%j!<%sA4BN$r;X$7$^$9!#

I=<(2hLL$O!"0l$D!"$^$?O=$l0J>e$N"%0%i%UIA2h(plot)"$r4^$_$^$9!#%0%i%UIA2h$O0l$D$N2#:BI8$H0lDN=D:BI8$GDj5A$5l^9,!'M>Gr(margin)d=NCfK=q$+$l$kJ8;zNs(text)F1MM!"$=li$O<B:]$K$=$N>e$KI=<($5lF$$$kI,MWO"j^$;$s!#

%0%i%UIA2h$O0l$D$N"%0%i%U"$r4^$_$^$9!#%0%i%U$O0lDN2#:BI8$H0l$D$N=D:BI8$GDj5A5l$^$9$,!"$3li$O<B:]$K$=$N>e$KI=<($5lF$$$kI,MWO"j^$;$s!#

%0%i%U$O0l$D^$?$O$=$l0J>e$N"6J@~(line)"$r4^$_$^$9!#6J@~$O0lDN4X?t!"$^$?$O%G!<%?=89g$G$9!#MQ8l"line"$OIA2h%9%?%kH$7F$b;Hol$^$9!#5iK3$NMQ8l$O"J8;zNs$N0l9T(a line of text)"$Nh&$K;H$olk3Hb"j^$9!#B?J,J8L.$+i=li$O6hJL$G$-$kG7g&!#

0lDN%0%i%U>e$NJ#?t$N6J@~O=l>$lL>A0$r;}A^$9!#$=$NL>A0$O!"$=$N6J@~$NI=8=$K;Hol$kIA2h%9%?%$%k$N%5%s%W%k$HHb$K"K^Nc(key)"Fb$K0lMwI=<(5l$^$9!#K^Nc$O!";~$K$O"I=Bj(legend)"$H$b8F$Pl^$9!#

MQ8l"%?%$%H%k(title)"$O **gnuplot** GOJ#?t$N0UL#$G;Hol$^$9!#3N%I%-%e%a%s%HGO$=$lir6hJL9k$?$a$K!"7AMF;l$H7F"IA2h$N(plot)"!'"6J@~$N(line)"!'"K^Nc$N(key)"$rF,KD1?%jb7$^$9!#2<!85$N%0%i%U$O4D^GN8+=P$7IU$1$5$l$k<4$r;}D3H,G-$^$9!#3l$i4$D$N<4$NL>A0O=l>$l!"%0%i%UIA2h$N2<$N6-3&$K1h$&<4$G$"$k"x"!":8$N6-3&$K1h$&<4"y"!">e$N6-3&$K1h$&<4"x2"!"1&$N6-3&$K1h$&<4"y2"$HJC$F$$$^$9!#0J2<;2>H:**axes (p. 81)**!#

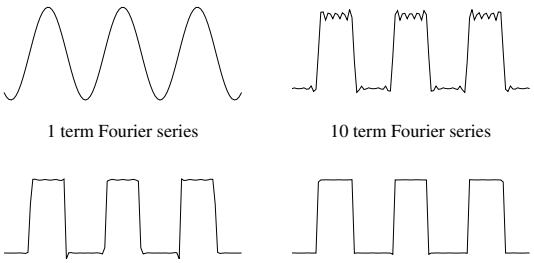
3<!85$N%0%i%U$O3D^GN8+=P$7IU$1$5$l$k<4(**axes**)"x","y","z"$r;}D3H,G-$^$9!#INFCDj$N<4$K4X$7F$b$=$l$,%0%i%U>e$GI3$K=q$+lk$+$r=RYk3HOG$-$^$;$s!#$=$l$O!"**set view** $G%0%i%U$r8+$kJ}8~$rJQ99G-k+iG$9!#

%G!<%?%U%!%$%k$K4X9k5DO@GO!'MQ8l"9T(record)"$rI|3h$7!"%U%!%$%k$N0l9T$NJ8;zNs!"$9Jc$A!"2~9TJ8;z$d9TKvJ8;zF1;N$N4V$NJ8;zNs!"$r;X$7<(9N$K;H$$$^$9!#'E@(point)"$O9T$+$i<h$j=P$7$?0l$D$N%G!<%?$9!#'%G!<%?%V%m%C%/(datablock)"$O!"6u9T$G6h@Zil$?2O"B3$7$?J#?t$N9T$+$iJkE@$N=89g$G$9!#%G!<%?%U%!%$%k$N5DO@$NCf$G"line"$,;2>H5l$k>l9g$O!"3l$O%G!<%?%V%m%C%/(datablock)"$H$$$&8@MU$O!"L>A0IU$-%$%s%i%$%s%s%G!<%?%V%m%C%/Gb;Hol$F$$$^$9!#0J2<;2>H:**datablocks (p. 88)**!#

(LuCm:3NF|K\8lLuNCfG$O3$3$K=q$+lF$$$kh&$JMQ8l$NE}0l$O9MN8$5lFO*i:!"hC$F:.Mp$r0z$-5/$3$92DG=@-$,$"$j$^$9!#87L)KO6J8$r;2>H$9Y-G7g&!#)

7+jJV7 (iteration)

gnuplot %P!<%8%g%s 4.6 KO!"7+jJV7 (iteration) %3%^%s%I$d%V%m%C%/9=B$$r07$ ($k if/else/while/do $,F3F~$5lF$$^$9!#0J2<;2>H **if (p. 77)**,**while (p. 192)**, **do (p. 68)**!#C1=c$J7+$jJV7O!"%3%^%s%I **plot**, **set** $GMxMQ$G$-$^$9!#0J2<;2>H **plot for (p. 98)**!#J#?t$N%3%^%s%I$rJq4^9k0lHIE*$J7+$jJV7O!"2<$G>R2p$9$k%V%m%C%/9=B$$rMxMQ9k3H$G9T$ ($^$9!#4XO"9k?7$7$5!G=G"$k?t<07?$N0J2<$b;2>H **summation (p. 32)**!#0J2<$O!"$3li$N?7$7$9=J85!G=$r$$/D+MxMQ7?Nc$G$9:




```
set multiplot layout 2,2
fourier(k, x) = sin(3./2*k)/k * 2./3*cos(k*x)
do for [power = 0:3] {
    TERMS = 10**power
    set title sprintf("%g term Fourier series",TERMS)
    plot 0.5 + sum [k=1:TERMS] fourier(k,x) notitle
}
unset multiplot
```

@~<o!"?'!"%9%?%$%k (linetypes)

8E$$HG$N gnuplot GO!"3F=PNO7A<0$O"@~<o (linetype)" r"$kDxEYMQ0U$7$F$$$F!"$=$liO?'!"B@$5!"E@@~/GK@~$N%Q%?!<%s!"$^$?$O?'$HE@@~/GK@~$NAH9g$;$G0c$$rI=8=7F$$$^7?!#$=$liN?'!"E@@~/GK@~$N%Q%?!<%s$O!"=PNO7A<0$r1[$($FF1$8bNKJkH$$&J]>Z$O2?$b$"$j$^$;sG7?$,!"B?$/$OF1$8?'$NNs!"@V/NP/@D/;g/?e?'/2+?'$r;HMQ$7$F$$^7?!#3N8E$5sF0$O!":#$O **set colorsequence classic** $GA*Br$G$-$^9,!"gnuplot %P!<%8%g%s 5 $N%G%U%)%k%H$O!"=PNO7A<0$KL54X78$K6&DL$N8 ?'Ns$r;HMQ7^$9!#

@~<o (linetype) $NB0@-$NJBSO!"BPOCE*$+=i4|2=%U%!%$%k$N$$:l+KhCF5i$K%+%9%?%^%$:2DG=$G$9!#0J2<;2>H **set linetype (p. 135)**!#G[I[%Q%C%1!<%8$K=i4|2=%U%!%$%k$N%5%s%W%k$,$$/D+MQ0U5l$F$$^$9!#

FCDj$N=PNO7A<0$KBP9k@~<o$NB0@-$N8=:_$N>uBV$O!"$=$N=PNO7A<0$r@_Dj$7?$"$H$G **test** %3%^%s%I$r<B9T9k3H$G3NG'$G$-$^$9!#

0lDNIA2h%3%^%s%IF'bGN4X?t$d&G!<%?%U%!%$%kNO"B3$9$kJBSK$O!"8=:_$N%G%U%)%k%H$N@~<oNs$+$i@~<o$,=gHV$K3d$jEvFil^$9!#8D!9$N4X?t!"%G!<%?%U%!%k!"$^$?O$=$NB>$NIA2hMWAG$KBP9k@~<o$O!"$=$NIA2h%3%^%s%I>e$GL@<(E*$K@~$NB0@-$r;XDj$9k3HG>e=q$-$G$-$^$9!#

Nc:

```
plot "foo", "bar"                # @~<o 1, 2 $G 2 %U%!%$%k$rIA2h
plot sin(x) linetype 4           # @~<o?' 4 $r;HMQ
```

0lHI$K!"?'$N;XDj$O!"?'$NL>A0$+!"RGB (@V!"NP!"@D) @.J,$+!"HSV (?'Aj!":LEY!"L@EY) @.J,$+!"8=:_$Npm3d%Q%l%C%H$K1h$C$?:BI8$G9T$$^$9!#

Nc:

```
plot sin(x) lt rgb "violet"      # gnuplot $N;}$D?'L>$N0l$D
plot sin(x) lt rgb "#FF00FF"     # L@<(E*$J 16 ?J RGB 3 $DAH
plot sin(x) lt palette cb -45    # 8=:_$N%Q%l%C%H$N cbrange $N
                                 # -45 $KBP1~$9$k?'
plot sin(x) lt palette frac 0.3  # %Q%l%C%H$KBP1~$9$k>.?tCM
```

0J2<;2>H **colorspec (p. 37)**, **show colornames (p. 115)**, **hsv (p. 29)**, **set palette (p. 152)**,**cbrange (p. 184)**!#0J2<$b;2>H **monochrome (p. 139)**!#

@~<o (linetype) KO!"E@@~/GK@~$N%Q%?!<%s$b7kSD1ilF$$^9,!"9YFN=PNO7A<0G=l,;H$($ko1GO$"$j$^$;$s!#gnuplot %P!<%8%g%s 5 GO!"@~?'HOFHN)$KE@@~/GK@~%Q%?!<%s$r;XDjG-$^$9!#0J2<;2>H**dashtype (p. 38)**!#

?';XDj (colorspec)

B?$/$N%3%^%s%I$G!"L@<(E*$J?'$N;XDj$rHbJC$?@~<o$r;XDj9k3H$,$G$-$^$9!#

=q<0:

```
... {linecolor | lc} {"colorname" | <colorspec> | <n>}
... {textcolor | tc} {<colorspec> | {linetype | lt} <n>}
```

<colorspec> $O0J2<$N7A<0$N$$:l+$G$9:

```
rgbcolor "colorname"    # Nc: "blue"
rgbcolor "0xRRGGBB"     # 16 ?J?tCM$NDj?tJ8;zNs
rgbcolor "0xAARRGGBB"   # 16 ?J?tCM$NDj?tJ8;zNs
rgbcolor "#RRGGBB"      # x11 7A<0$N 16 ?J?tJ8;zNs
rgbcolor "#AARRGGBB"    # x11 7A<0$N 16 ?J?tJ8;zNs
rgbcolor <integer val>  # AARRGGBB $rI=$9@0?tCM
rgbcolor variable       # F~NO%U%!%$%k$+$i@0?tCM$rFI$_9~$`
palette frac <val>      # <val> $O 0 $+$i 1 $NCM
palette cb <value>      # <val> $O cbrange $NHC0O$NCM
palette z
variable                # F~NO%U%!%$%k$+$i?'HV9f$rFI$_9~$`
bgnd                    # GX7J?'
black
```

<n> $O!"$=$N@~<o(linetype) HV9f$,;H$&?'$r0UL#7^$9!#0J2<;2>H:**test (p. 191)**!#

"colorname" $Ognuplot $,FbIt$K;}CF$$$k?'$NL>A0$N$&$A$N0l$D$r;XDj$7$^$9!#M-8z$JL>A0$N0lMw$K4X$7FO!"0J2<;2>H: **show colornames (p. 115)**!#

16 ?JDj?t$O!"0zMQIdIU$-$G"#RRGGBB" $d"0xRRGGBB" $N7A$GM?$($k3H$,$G$-$^$9!#RRGGBB $O!"?'$N@V!"NP!"@D$N@.J,$r0UL#$7!"$=l>$l00 $+$iFF $^$G$NHC0OFb$GJ1lP$$$1$^;$s!#Nc$($P!"%^%<%s%?(;g) $O!":G$bL@$k$$$@V+:G$bL@$k$$@D!"JN$G"0xFF00FF" $HI=$5$1!"$3lO16 ?J?t$G(255 << 16) + (0 << 8) + (255) $r0UL#$7$F$$$^$9!#

"#AARRGGBB" $O!"RGB ?'$N>e0L$S%C%H$K%"%k%U%!CM(F)2a@-) $,$D$$$F$$$k3H$r0UL#$7$^$9!#%"%k%U%!CM0 $O40A4$KIF)L@?'G"k3Hr0UL#$7!"$hCF"#00RRGGBB" $O"#RRGGBB" $HF1$8KJj^$9!#%"%k%U%!CM$N255 (FF) $O40A4$KF)L@G"k3Hr0UL#7^$9!#Cm0U:$3$N;XDjK!$N%"%k%U%!CM$N0lCV$O!"0JA0NHGNgnuplot $N2hA|IA2h%b!<%I"with rgbalpha" Kh$k;XDj$N>l9g$NH?BP$KJC$F$$$^$9!#

%+%i!<%Q%l%C%HHO!"?'$N@~7?$J8{G[$G!"C10l$N?tCM$rFCDj$N?'$K3j$i$+$KBP1~E1$^$9!#>oK=Nh$&$J2DNBP1~IU1,8zNO$r;}$A$^$9!#**palette frac** $O0$+$i1 $^$G$N>.?tCM$r!"%+%i!<%Q%l%C%H$NA4HC0O$KBP1~IU1kbN$G!"**palette cb** $O!"?'<4$NHC0O$rF1$8%+%i!<%Q%l%C%H$X3d$jEvFkbN$G$9!#0J2<;2>H: **set cbrange (p. 184)**, **set colorbox (p. 114)**!#3liNBP1~IU1NIAi+$r;H$C$F!"8=:_$N%Q%l%C%H$+$iDj?t?'$rA*$S=P$9$3H,G-$^$9!#

"palette z" $O!"3FIA2h@~J,$dIA2hMWAG$Nz NCMr!"%Q%l%C%H$XBP1~$E1ilF$$$k cbrange $NHC0O$KBP1~E1$^$9!#3lKh$j!"3<!85$N6J@~$d6JLI$K1hCF?'$r3j$i$+$KJQ2=5;k3H,G-$^$9!#3l$O!"2<!85IA2h$G!"%Q%l%C%HCM$rDI2C$NNs%G!<%?$+$iF I$_9~$^$;$F?'IU$1$9kNKb;H$($^$9($9%YFN2<!85IA2h%9%?%$%k$,3NDI2CNs$rG'<1$9ko1G$O"$j$^$;$s)!#FC<l$J?';XDj$,2$D$"$j$^$9!#GX7J?'$N**bgnd** $H!"**black** $G$9!#

Background color

B?$/$N=PNO7A<0$G%0%i%U$NGX7J?'$rL@<(E*$K@_DjG-$^$9!#FCJL$J@~<o(linetype) **bgnd** O=$N?'$GIA2h7^9,!"$=$N**bgnd** $O?'$H7F$bG'<1$5$1$^$9!#Nc:

```
# 0J2<$O%-%c%s%P%9$N0lItJ,$rGX7J?'$G>e=q$-$9$k$3$H$G>C5n$7$^$9!#
set term wxt background rgb "gray75"
set object 1 rectangle from x0,y0 to x1,y1 fillstyle solid fillcolor bgnd
# 0J2<$O x <4$K1h$C$?!V8+$($J$$!W@~$rIA$-$^$9!#
plot 0 lt bgnd
```

Linecolor variable

lc variable $O!"F~NO%G!<%?$N0lDNNs$+$iFIs@CM$r@~<o (linetype) $NHV9f$H7F;H$$!"$=$N@~<o$KB0$9$k?'$r;H$&$h$&%W%m%0%i%`$K;X<(7^$9!#$hCF3l$O!"**using ;**XDj;R$XBP1~9kNs$N;XDj$NDI2CrI,MWH7^$9!#J8;z$N?'$bF1MM$K!"**tc variable** $G;XDj$G$-$^$9!#

Nc:

```
# %G!<%?$N 3 NsL\$r!"8D!9$NE@$K?'$r3d$jEv$F$k$N$K;HMQ
plot 'data' using 1:2:3 with points lc variable
```

```
# 0l$D$N%G!<%?%U%!%$%k$K$OJ#?t$N%G!<%?=89g$rF~$l$k$3$H$,2DG=$G!"
# $=$l$i$O 2 9T$N6u9T$GJ,N%$5$l$F$$$^$9!#8D!9$N%G!<%?=89g$K$O
# index CM$,3d$jEv$F$i$l$F$$$F(0J2<;2>H: 'index')!"using ;XDj$N
# column(-2) $G<hF@$G$-$^$9!#0J2<;2>H: 'pseudocolumns'!#0J2<$NNc
# $O -2 $N column CM$r;H$C$F!"8D!9$N%G!<%?=89g$r0[$J$k@~?'$GIA2h
# $7$^$9!#
plot 'data' using 1:2:(column(-2)) with lines lc variable
```

Rgbcolor variable

%0%i%U$N3F%G!<%?E@!"3F@~J,!"$^$?$O3F%i%Y%kK=l>$l0[$J$k?'$r3djEvFk3H,G-$^$9!#**lc rgbcolor variable** $O!"%G!<%?%U%!%$%k$N3F9T$+$iRGB ?'$N>pJsrFI_9~$`$h$&%W%m%0%i%`$K;X<(7^$9!#$hCF3l$O!"**using ;**XDj;R$KhkBP1~9kNs$N;XDj$NDI2CrI,MWH$7!"$=NNsO24-bit 7A<0$NRGB $N3 DAHG$"$kH_J5l^$9!#$=NCMr%G!<%?%U%!%$%k$+$iD>@`\M?$($k>19g$O!"3l$O:G$b4JC1$J7A<0$N16 ?JCM$GM?$($^$9(0J2<;2>H:**rgbcolor (p. 37)**)!#0lJ}$G!"0J2<$NNcNh$&$K24-bit RGB ?'H7$FI>2A$5lkh&J?t<0$r**using ;**XDj;R$KF~lk3HbG$-$^$9!#J8;z$N?'$bF1MM$K!"**tc rgbcolor variable** $G;XDj$G$-$^$9!#

Nc:

```
# 3 <!85IA2h$G!"3F x,y,z :BI8$KBP1~$7$?@V!"NP!"@D$N@.J,$r;}$D?'
# $N$D$$$?E@$rG[CV
rgb(r,g,b) = 65536 * int(r) + 256 * int(g) + int(b)
splot "data" using 1:2:3:(rgb($1,$2,$3)) with points lc rgb variable
```

E@@~/GK@~<o (dashtype)

gnuplot %P!<%8%g%s5$G!"**linecolor** $d**linewidth** $HF1MM$K!"E@@~/GK@~%Q%?!<%s(**dashtype**)$,3F6J@~Kh$NB0@-H7$FFHN)$7$^$7$?!#=>Mh$Nh&J!";HMQCf$N=PNO7A<0$NE@@~$r=q$/$?$a$NFCJL$J%b!<%IH7$F;XDj$9kI,MWO$"$j$^$;$s!#$9Jo$A!"**set term <termname> {solid|dashed}** Nh$&J%3%^%s%I$O8=:_$OL5;k$5l^$9!#%P!<%8%g%s4MQ$K=q$$?8E$$9%/%j%W%HXN8eJ}8_49@-$,I,MW$J>19g$O!"0J2<$Nh&$J=q$-J}$GBeMQ$G$-$^$9:

```
if (GPVAL_VERSION >= 5.0) set for [i=1:9] linetype i dashtype i
if (GPVAL_VERSION < 5.0) set termoption dashed
```

9YFN@~$O!"$[$+$K;XDj7J1l$P!"**dashtype solid** $H$$$&B0@-$r;}$A$^$9$,!"$3$N%G%U%)%k%HCM$r%3%^%s%I**set linetype** $GFCDj$N@~<o$KJQ9$7$=$N8e$N%3%^%s%I$G;H$($kh&KG$-$^$9!#$^$?$O!"**plot** $dB>$N%3%^%s%I$N0lItJ,$H7F;HMQ7?$5E@@~/GK@~$N7?$r;XDj$G$-$^$9!#

=q<O:

```
dashtype N          # Dj5A:Q$_E@@~/GK@~7?$rHV9f$G8F$S=P$7
dashtype "pattern"  # E@(.) 2#@~(-) 2<@~(_) $H6uGr$NAH$_9g$o
                    # $;J8;zNs$K$h$k;XDj
dashtype (s1,e1,s2,e2,s3,e3,s4,e4)  # 1~4 8D$N<<B@~D9>,<6uGrD9>
                    # $NAH$K$h$kE@@~/GK@~%Q%?!<%s;XDj
```

Nc:

```
# 2 $D$N4X?t$,@~<o1 $r;H$&$, dashtype $G6hJL
plot f1(x) with lines lt 1 dt solid, f2(x) with lines lt 1 dt 3
```

$$$/D+$N=PNO7A<0$O! "$=$1$,Ds6!$9$kDj5A:Q$_E@@~/GK@~%Q%?!<%s$K! "%f!<%6Dj5A%Q%?!<%s$rDI2C9k3H $r%5%]!<%H$7$F$$^$9!#

Nc:

```
    plot f(x) dt 3             # =PNO7A<0$N;}$D%Q%?!<%s 3 $r;HMQ
    plot f(x) dt ".. "         # 0l;~E*$J%Q%?!<%s$r:n@.
    plot f(x) dt (2,5,2,15)    # F1$8%Q%?!<%s$r?tCM$GI=8=
    set dashtype 11 (2,4,4,7) # ?7%Q%?!<%s$rHV9f$G8F$S=P$;$k$h$&Dj5A
    plot f(x) dt 11            # ?7%Q%?!<%s$r;H$C$FIA2h
```

E@@~/GK@~%Q%?!<%s$rJ8;zNs$G;XDj7?>19g! "gnuplot O=1r<<B@~D9>, <6uGrD9> NAHNNs$KJQ49$7$^ $9!#$=$N>19g! "%3%^%s%I **show dashtype** $O! "85$NJ8;zNs$HJQ498e$N?tCMNNsNN>J}$rI=<($7$^$9!#

Linestyles $H linetypes

linestyle $O! "B0@-linecolor, linewidth, dashtype, pointtype $N0l;~E*$JAH$_9g$o$;$G! "$3$1$O%3%^%s%I **set style line** $GDj5A$7$^$9!#0lEYlinestyle $rDj5A$9kH! "1 2s$N plot %3%^%s%I>e$G$=$1$r;H$C$F! "1 $D! "$^$?$OhjB?$/$NIA2hMWAG$N8+$?L\$r@)8fG-$^$9!#8@$$4 9$($1$P! "$3$1$OCzEYlinetype $+$i1JB3@-$r<h$j=|$$?bN! "$H8@$&3H$,$G$-$kG7g&!#**linetypes** $O1JB3E*(L@<(E*$K$=$1ir:FDj5A9k$^$G$OJ];}$5$1$k) G9$,! "**linestyles** $O! "<!$N%0%i%U%#C%/$N>uBV$,%j%;%C%H$5$1k^GN4V7+J];}$5$1$^$;$s!#

Nc:

```
    # ?7$7$%i%$%s%9%?%$%k$r! "=PNO7A<0$K0MB8$7$J$?' cyan! "@~I}$, 3! "
    # E@<o 6 (4]$NCf$KE@) $HDj5A
    set style line 5 lt rgb "cyan" lw 3 pt 6
    plot sin(x) with linespoints ls 5          # Dj5A%9%?%$%k 5 $G
```

%1%$%d!<(layers)

gnuplot $N%0%i%U$O! "?'!9$JMWAG$r8GDj$5$1$?=gHV$GIA$->e$2$F$$$/3H$G9=@.$5$1$F$$$^$9!#$3$N=gHV$O! "%-!<%o!<%I **behind**, **back**, **front** $r;H$C$FMWAG$KFCDj$N3,AX$r3djEvFk3HGJQ99G-$^$9!#Nc$($P! "%0%i%UNN0h$NGX7J?'$rJQ99$9$kKO! "?'ND$$?D9J}7A$rB0@-**behind** $GDj5A$9$1$P$$$o1G$9!#

```
    set object 1 rectangle from graph 0,0 to graph 1,1 fc rgb "gray" behind
```

IA2h$N=gHV$O0J2<NDLj$G$9:

```
    behind
    back
    %0%i%U<+BN
    %0%i%U$NI=Bj ('key')
    front
```

3F3,AXFbGO! "MWAG$NIA2h$O0J2<$N=gHV$G$9:

```
    HV9f=g$N%*%V%8%'%/%H (rectangle, circle, ellipse, polygon)
    HV9f=g$N%i%Y%k (label)
    HV9f=g$NLp0u (arrow)
```

1%Z!<%8$KJ#?t$N%0%i%U$,$"$k>19g(multiplot %b!<%I)! "3N=g=x$O! "J#?t%0%i%U$rA4BNH7FE,MQ9kN$G OJ$/! "3FIA2hMWAG$KJL!9KE,MQ7$^$9!#

%^%&%9F~NO (mouse input)

B?$/$N=PNO7A<0$G! "8=:_$NIA2h$K%^%&%9$r;HCF:nMQr9k3H,2DG=KJCF$$$^$9!#$=N&$A$$$/D+$O %[%C%H%-!<$NDj5A$b%5%]!<%H$7$F$$F! "%^%&%9%+!<%=%k$,M-8z$JIA2h%&%#%s%I%&K"kH$-$K! "$"$k%-!<$r2!$9$3$HG"i+8aDj5A7?4X?t$r<B9T$5$;$k3H$,$G$-$^$9!#%^%&%9F~NO$r **batch** %3%^%s%I%9%/%j%W%HHAH_9go;k3Hb2DG=$G! "Nc$($P **pause mouse** H7$F! "$=$N8e$K%^%&%9%/%j%C%/KhCF%Q%i%a!<%?H7FUVC EMhk%^%&%9UQ?tr=$N8e$N%9%/%j%W%HF0:n$KH?1G$5$;$k3H$,$G$-$^$9!#0J2<;2>H: **bind (p. 40)**,**mouse variables (p. 41)**!#$^$?0J2<$b;2>H: **set mouse (p. 140)**!#

Bind

=q<0:

```
bind {allwindows} [<key-sequence>] ["<gnuplot commands>"]
bind <key-sequence> ""
reset bind
```

bind $O! "% [%C%H%-! <$ND j5A! ": ED j5A$K; HMQ$7$^$9! #% [%C%H%-! <HO! "F~NO%+! <%=%k$,%I%i%$%P$N%&%#%s%I%&Fb K"kH$-$K! "$"$k%-! <! "$^$?$OJ#?t$N%-! <$r2!$9$3HG! "gnuplot $N%3%^%s%INs$r<B9T5;$k5!G=$N3H$r 8@$$^$9! #**bind** $O! "gnuplot $, **mouse** $r%5%]! <%H$9kh$&$K%3%s%Q%$%k$5lF$$$F$+$D%^%&%9$,M-8z$J=PNO 7A<0>e$G; H$olF$k>l9g$KN_M-8zG"k3HKCm0U7F$/$@$5$$! #%f! <%6; XDj$N%-! <3dEv (binding) $O! "AH $_9~$_ (builtin) %-! <3dEvrCV-49$ ($^$9$,! "<space> $H'q' $ODL>o$O:ED j5AOG$-$^$;$s! #$=$NM#0l$NNc30 KD$$$F$O! "0J2<; 2>H: **bind space (p. 41)**! #

%^%&%9%\%?%s$O! "%\%?%s 1 N_! "2 <!85IA2hMQKN$_Dj5A2DG=$G$9! #

% [%C%H%-! <$N0lMw$rF@kK$O **show bind**, $^$?$O **bind** $H%?%$%W9k$+! "%0%i%U%&%#%s%I%&>e$G% [%C%H%-! < 'h' $rF~NO$7F/$@$5$$! #

%-! <Dj5A$O! "**reset bind** $G%G%U%)%k%H$N>uBV$KI|5"$G$-$^$9! #

=$>~%-! <$r4^$'J#?t$N%-! <$NDj5A$O0zMQId$G0O$'I,MW$,$"k3HKCm0U7F$/$@$5$$! #

I8='GO% [%C%H%-! <$O8=:_$NIA2h%&%#%s%I%&>e$KF~NO%+! <%=%k$,$"$k>l9gN_G'<1$5$l$^$9! #**bind allwindows <key> ...** (**bind all <key> ...** $H>JN,2D) $O! "<key> $N3dEv$r! "$=$l$,8=:_$NM-8zJbN+H]$+$K4Xoi $:! "$9YF$N gnuplot $NIA2h%&%#%s%I%&>e$G2DG=K7$^$9! #3N>l9g! "gnuplot JQ?t MOUSE_KEY_WINDOW K=l,9TJol?%&%#%s%I%&$NID $,J]B8$5lkNG$=$l$r%-! <$K3djEvF$?%3%^%s%I$G; HMQ9k3H$,$G $-$^$9! #

Nc:

- %-! <3dEv$N@_Dj:

```
bind a "replot"
bind "ctrl-a" "plot x*x"
bind "ctrl-alt-a" 'print "great"'
bind Home "set view 60,30; replot"
bind all Home 'print "This is window ",MOUSE_KEY_WINDOW'
```

- %-! <3dEv$rI=<(:

```
bind "ctrl-a"          # ctrl-a $KBP$9$k%-! <3dEv$rI=<(
bind                   # A4$F$N%-! <Dj5A$rI=<(
show bind              # A4$F$N%-! <Dj5A$rI=<(
```

- %-! <3dEv$r:o=|:

```
bind "ctrl-alt-a" ""   # ctrl-alt-a $N%-! <3dEv$r:o=|
                         (AH$_9~$_%-! <Dj5A$O:o=|$5$l$^$;$s)
reset bind             # %G%U%)%k%H (AH$_9~$_) $N%-! <Dj5A$rF3F~
```

- %H%0%k%9%$%C%A7A<0$K%-! <3dEv:

```
v=0
bind "ctrl-r" "v=v+1;if(v%2)set term x11 noraise; else set term x11 raise"
```

=$>~%-! <(ctrl / alt) $OBgJ8;z>.J8;z$N6hJLO"j^$;$s$,! "%-! <$O$=$&GO$"$j$^$;$s:

```
ctrl-alt-a == CtRl-alT-a
ctrl-alt-a != ctrl-alt-A
```

=$>~%-! <(alt == meta) $N0lMw:

```
ctrl, alt (%\%?%s 1 $G$N$_M-8z)
```

%5%]! <%H5l$F$$$kFC<l%-! <$N0lMw:

```
"BackSpace", "Tab", "Linefeed", "Clear", "Return", "Pause", "Scroll_Lock",
"Sys_Req", "Escape", "Delete", "Home", "Left", "Up", "Right", "Down",
"PageUp", "PageDown", "End", "Begin",
```

```
  "KP_Space", "KP_Tab", "KP_Enter", "KP_F1", "KP_F2", "KP_F3", "KP_F4",
  "KP_Home", "KP_Left", "KP_Up", "KP_Right", "KP_Down", "KP_PageUp",
  "KP_PageDown", "KP_End", "KP_Begin", "KP_Insert", "KP_Delete", "KP_Equal",
  "KP_Multiply", "KP_Add", "KP_Separator", "KP_Subtract", "KP_Decimal",
  "KP_Divide",

  "KP_1" - "KP_9", "F1" - "F12"
```

0J2<$O!"<B:]$N%-!<GOJ/!"%&%#%s%I%&$K4X$9$k%$%Y%s%H$G$9:

```
  "Button1" "Close"
```

0J2<$b;2>H **mouse (p. 140)**!#

Bind space

gnuplot $,!"configure ;~$K%*%W%7%g%s–enable-rase-console rD1F%$%s%9%H!<%k$5l?>19g$O!"IA2h%&%#%s%I%&Fb$G<space> $r%?%$%W9k$Hgnuplot $N%3%^%s%I%&%#%s%I%&$,A0LL$K=P$^$9!#$3$N%[%C%H%-!<$O!"gnuplot -ctrlq' Nh$&$K7F gnuplot $r5/F0$9k+!"$^$?$O X %j%=!<%9$N'gnuplot*ctrlq' $r@_Dj$9k3HG ctrl-space $KJQ9$G$-$^$9!#0J2<;2>H **x11 command-line-options (p. 250)**!#

%^%&%9MQ$NJQ?t (Mouse variables)

mousing (%^%&%95!G=) $,M-8z$J>19g!"8=:_$N%&%#%s%I%&>e$G$N%^%&%9%/%j%C%/$KhC$F gnuplot $N%3%^%s%I%i%$%s>e$G;H$&3H$,$G$-$k?'!9$J%f!<%6JQ?t$,@_Dj5l$^$9!#%/%j%C%/;~$N%^%&%9$N:BI8$OJQ?t MOUSE_X, MOUSE_Y, MOUSE_X2, MOUSE_Y2 $KBeF~$5l^$9!#%/%j%C%/$5l?%\%?%s$d!"$=NH$-$N%a%?%-!<NBVO MOUSE_BUTTON, MOUSE_SHIFT, MOUSE_ALT, MOUSE_CTRL $KBeF~$5l^$9!#$3li$NJQ?t$OG$0U$NIA2h$N3+;O;~$KOLDj5A$G!"M-8z$JIA2h%&%#%s%I%&CfGN%^%&%9%/%j%C%/%$%Y%s%H$KhC$F=i$a$FDj5A$5l^$9!#M-8z$JIA2h%&%#%s%I%&Cf$G%^%&%9$,4{$K%/%j%C%/$5l?$+$I$&$+$r%9%/%j%W%H$+$iD4$YkK$O!"$3li$NJQ?t$N$&$ANIl+0lD,Dj5A5l$F$$$k$+$I$&$+$r%A%'%C%/$9lP==J,$G$9!#

```
plot 'something'
pause mouse
if (exists("MOUSE_BUTTON")) call 'something_else'; \
else print "No mouse click."
```

IA2h%&%#%s%I%&>eGN0lO"$N%-!<F~NO$rDI@W9k3H$b!"%^%&%9%3!<%I$r;H$&$3HG2DG=HJj^$9!#

```
plot 'something'
pause mouse keypress
print "Keystroke ", MOUSE_KEY, " at ", MOUSE_X, " ", MOUSE_Y
```

pause mouse keypress $,!"%-!<F~NO$G=*N;7?>19g$O MOUSE_KEY KO2!5l$?%-!<$N ASCII %3!<%I$,J]B8$5l^$9!#MOUSE_CHAR KO$=$NJ8;z<+?H$,J8;zNsCM$H7FJ]B8$5$l$^$9!#pause %3%^%s%I$,(Nc$(P ctrl-C $dIA2h%&%#%s%I%&$,30It$+$iJD8ilkJI7F) 0[>o=*N;7?>19g$O MOUSE_KEY $O-1 KJj^$9!#

%^%&%9Kh$k3HBg$N8e$N?7$7$IA2hHOOO$O!"GPVAL_X_MIN, GPVAL_X_MAX, GPVAL_Y_MIN, GPVAL_Y_MAX $G;2>H$G$-$k3H$KCm0U$7F/$@$5$$!#0J2<;2>H **gnuplot-defined variables (p. 32)**!#

;DN1 (Persist)

gnuplot $NB?$/$N=PNO7A<0 (aqua, pm, qt, x11, windows, wxt, ...) $,!"%9%/%j!<%s>e$K%0%i%Ur=NCfKIA$$$?I=<(MQ$N%&%#%s%I%&rJL$K3+$-$^$9!#%*%W%7%g%s **persist** $O!"<g$?$k%W%m%0%i%'$,=*N;7?H-Kb!"$=$liN%&%#%s%I%&$r;D$9h&gnuplot $K;X<($7$^$9!#3l$O!"HsBPOC7?=PNO7A<0=PNO$G$O2?$b7^$;$s!#Nc$($P!"0J2<$N%3%^%s%I$r<B9T9k$H

```
gnuplot -persist -e 'plot [-5:5] sinh(x)'
```

gnuplot $O! "I=< (%&%#%s%I%&$r3+$-! "$=NCfK%0%i%UrIA-! "$=$7$F=*N;$7! "I=< (%&%#%s%I%&$O%0%i%U$r$=$NCf$K; }$C$?$^$^%9%/%j! <%s$K; Dj^$9! #=PNO7A<0$KhCFO! "$=$N; DC?%&%#%s%I%&>eGbB?>/$N%^%&%9A`:n$,2DG=$J>l9g$b$"$j$^$9! #$7$+$7! "%0%i%U$N:FIA2h$rMW5a$9$k%:! <%`($H$=$N5U) Nh$&$JA`:n$O! "4{$K%W%m%0%i%`$,=*N;$7$F$$kNG0lHLE*KOL5M}$G$9! #

?7$7$$=PNO7A<0$r@_Dj$9kH$-$K$b **persist** $d **nopersist** $r;XDj$G$-$^$9! #Nc:

```
set term qt persist size 700,500
```

IA2h (Plotting)

gnuplot KO%0%i%U$rIA2h$9$k4 DN%3%^%s%I **plot**, **splot**, **replot**, **refresh** $,$"j^$9! #B>$N%3%^%s%I$O! ":G=*E*$K%0%i%U>e$K@8@.$5lkIA2hMWAG$d! "%l%$%"%&%H! "%9%?%$%k$N@)8f$r9T$$^$9! #**plot** $O2<!85%0%i%U$r@8@.7^$9! #**splot** $O3<!85%0%i%U($bAm$s<B:]$KO=$N2<!85LL$X$N<M1F) $r@8@.$7$^$9! #**replot** $O! "D>A0$N **plot** $d **splot** %3%^%s%I$r:F<B9T7^$9! #**refresh** $O! "**replot** $H;w$F$$$^9,! "F~NO%G! <%?$r%U%!%$%kdF~NO%9%H%j! <%`$+$i:FFI$_9~$_9kBeoj$K! "A0$KJ]B8$7$?%G! <%?$r:F;HMQ$7$^$9! #

3l$i4 DN%3%^%s%IN&AN0lDr<B9T7?>l9g$O! "8=:_Dj5A$5lF$$$k<4! "%i%Y%k! "%?%$%H%k! "$*hS85$Nplot %3%^%s%I$G;XDj5l$?5^6^J4X?t$d%G! <%?N9YF$r4^$`=PNO$N%9%/%j! <%s$r:FIA2h9k$+! "?7$7$$=PNO%Z! <%8$r@8@.$7$^$9! #b7! "0lDN%Z! <%8$KJ#?t$N%0%i%UrNYj9g$&$h$&$KJBYF=PNO7?$$>l9g! "Nc$($PJ#?t$N?^$N%Q%M%k$r:n@.$7$?$j! "Bg$-$J%0%i%UNCfK>.5J%0%i%U$rA^F~$7$?$j7?$>l9g$O! "%3%^%s%I **set multiplot** $r;HMQ$7! "3FIA2h%3%^%s%I$G?7$7$%Z! <%8$,:nilkN$rM^@)$7F/$@$5$$! #

IA2h$K4X$9$k0lHLE*$J>pJs$NBgH>$O! "**plot** $K4X$9$k9`$G8+$D$+$j$^$9! #3<!85IA2h$K8GM-$N>pJs$O **splot** $N9`$K$"$j$^$9! #

plot $O xy D>8r:BI87O$H6K:BI87O$,;H$($^$9! #0J2<;2>H: **set polar (p. 157)**! #**splot** $O xyz D>8r:BI8$,;H$($^9,! "3<!856K:BI8! "1_C1:BI8%G! <%?$bF~NO$G$-$^$9! #0J2<;2>H: **set mapping (p. 137)**! #**plot** GO! "4 DN6-3& x (2<), x2 (>e), y (:8), y2 (1&) r=l>$lFHN)$J<4H7$F07$&3HbG$-$^$9! #%*%W%7%g%s **axes** $G! "M?$(il$?4X?t$d%G! <%?=89grI$N<4$N%Z%"$GI=< ($5$;$k$+$rA*Y^$9! #$^$?! "3F<4$N=L<\$d8+=P7E1r40A4$K@)8f$9k?aK==J,$JJd:4$HJk **set** %3%^%s%I72$,B8:_$7$^$9! #$$/D+$N%3%^%s%I$O! "**set xlabel** Nh$&$K<4$NL>A0$r$=$NCf$K; }$C$F$$^$9$7! "$=$l0J30NbNO **set logscale xy** Nh$&$K! "1$D! "$^$?$OJ#?t$N<4$NL>A0$r%*%W%7%g%s$H7FHj$^$9! #z<4$r@)8f$9$k%*%W%7%g%s$d%3%^%s%I$O2<!85%0%i%U$K$O8zNO$r;}A^;$s! #

splot $O! "E@$d@~$K2C$($F6JLL$dEy9b@~$r=q$/3H$,$G$-$^$9! #3<!85$N4X?t$N3J;RDj5A$K4X9k>pJsKD$$$F$O! "0J2<;2>H: **set isosamples (p. 129)**! #3<!85%G! <%?$N%U%!%$%kKI,MWJ7ABVKD$$$F$O! "0J2<;2>H: **splot datafile (p. 185)**! #Ey9b@~$K4X$9$k>pJs$K$D$$$F$O! "0J2<;2>H: **set contour (p. 115)**, **set cntrlabel (p. 112)**,**set cntrparam (p. 113)**! #

splot GN=L<\$d8+=P$7IU$1$N@)8f$O! "z<4KbM-8zG"k3$H! "$*hSx2<4! "y2<4$N%i%Y%kIU$1$, **set view map** $r;H$C$F:n$ilk5?;wE*$J2<!85IA2h$KN_2DG=G"k3Hr=|1P **plot** $HA4$/F1$8$G$9! #

=i4|2= (Startup (initialization))

5/F0;~$K! "gnuplot O^$:%7%9%F%`MQ$N=i4|@_Dj%U%!%$%k **gnuplotrc** $rC5$7$^$9! #$=$N%U%!%$%k$NCV$->l=j$Ognuplot $N%$%s%9%H! <%k;~$K7hDj$5$l! "**show loadpath** $GCN$k$3$H$,$G$-$^$9! #<!$K%f! <%6$N%[!<%`%/%H%jFb$K8D?MMQ$N@_Dj%U%!%$%k$rC5$7$^$9! #$=$N%U%!%$%k$OUnix 7O$N%7%9%F%`GO **gnuplot** G"$j! "$=$NB>$N=hM}7OGO **GNUPLOT.INI** HJCF$$$^$9! #(OS/2 GO! "4D6-JQ?t **GNUPLOT** $K@_Dj$5lF$$$kL>A0$N%G%#%l%/%H%jFb$K$=$l$rC5$7$^$9; Windows GO! "**APPDATA** $r;HMQ$7$^$9)! #Cm0U: %$%s%9%H! <%k;~$K **gnuplot** $,:G=i$K%+%l%s%H%G%#%l%/%H%j$rC5$9h&$K@_Dj$G$-$^9,! "%;%-%e%j%F%#>e4m81JNG=lO?d>)7^$;$s! #

J8;zNsDj?t$HJ8;zNsJQ?t (Strings)

J8;zNsDj?t$K2C$($F! "$[HsIN gnuplot %3%^%s%I$OJ8;zNsJQ?t! "U8;zNs<0$^$?$OJ8;zNsrJV94X?t$b<u$l1IU1^$9! #Nc$($P! "0J2<$N4DN plot Nd$jU}$O7k2LH7$FA4$FF1$8IA2h%?%$%H%k$r@8@.$7$^$9:

```
four = "4"
graph4 = "Title for plot #4"
graph(n) = sprintf("Title for plot #%d",n)

plot 'data.4' title "Title for plot #4"
plot 'data.4' title graph4
plot 'data.4' title "Title for plot #".four
plot 'data.4' title graph(4)
```

```
N = 4
plot 'data.'.N title "Title for plot #".N
```

```
plot = "my_datafile.dat"
title = "My Title"
plot plot title title
```

```
if ("A"."B" eq "AB") print "TRUE"
```

CV49$H%3%^%s%I%i%$%s%^%/%m (Substitution)

gnuplot XNL?NaJ8;zNs$,:G=i$KFI$_9~$^l?;~E@!"9JoA$^$@$=$l$,2r<a$5$l!"$b7/$O<B9T$5lkA0$NCJ3,$G!"2 DN7A<0$NC18l$NCV49$,<B9T$5l^$9!#$=li$O5U0zMQId(!.) (ASCII HV9f96) $G0O$^lF$$k$+!"$^$?$O@ (ASCII HV9f64) $,F,$K$D$$?J8;zNsKBP7$F9T$Jol$^$9!#

5U0zMQIdKh$k%7%9%F%`%3%^%s%I$NCV49 (Substitution backquotes)

%7%'%k%3%^%s%I$r5U0zMQId(!.) $G0O$`3HKhCF%3%^%s%ICV49$r9T$&3H$,$G$-$^$9!#$3$N%3%^%s%I$O;R&W%m%;%9$G<B9T$5$l!"$=$N=PNO7k2L$G%3%^%s%I%i%$%s$N5U0zMQId$G0O$^l?%3%^%s%IrCV-49$($^$9!#=hM}7O$KhCFO%Q%$%W&,%5%]!<%H$5lF$$k>19gb"j^$9!#0J2<;2>H:**plot datafile special-filenames (p. 90)**!#

%3%^%s%ICV49$O!"C10l0zMQIdFb$NJ8;zNs0J30$O!"**gnuplot** $N%3%^%s%I%i%$%sCf!"I3GG$b;HMQ2DG=$G$9!#

Nc:

0J2<NNcO!"**leastsq** $H$$&%W%m%0%i%`$r<B9T$7!"$=$N=PNO7k2L$G!"**leastsq** $r($^oj$N0zMQId$3$_$G) CV-49($^$9:

```
f(x) = `leastsq`
```

$?$@$7 VMS GO!"

```
f(x) = `run leastsq`
```

0J2<$O8=:_$NF|IU$H%f!<%6!<>$N%i%Y%k$r@8@.$7$^$9:

```
set label "generated on `date +%Y-%m-%d` by `whoami`" at 1,1
set timestamp "generated on %Y-%m-%d by `whoami`"
```

J8; zNsJQ?t$N%^%/%mCV49 (Substitution macros)

J8; z@ $O!"%3%^%s%I%i%$%s>eG=$NJ8; zNsJQ?t$NCMXNCV49$r9T$J$&$N$K; H$ol^$9!#J8; zNsJQ?t$NCMH7$F $NJ8$O!"J#?t$NC181$+iJk3Hb2DG=$G$9!#$3$1Kh$jJ8; zNsJQ?t$r%3%^%s%I%i%$%s%^%/%m$H7F; H$&$3$H $,2DG=$KJj$^$9!#3N5!G=Kh$jE83+$G$-$kNOJ8; zNsDj?tN_$G!"U8; zNs$rCM$K<h$k?t<0$r; H$&3HOG $-$^$;$s!#Nc:

```
style1 = "lines lt 4 lw 2"
style2 = "points lt 3 pt 5 ps 2"
range1 = "using 1:3"
range2 = "using 1:5"
plot "foo" @range1 with @style1, "bar" @range2 with @style2
```

3N@ 5-9f$r4^$`9T$O!"$=$NF~NO; ~$KE83+5l!"$=$l$,<B:]$K<B9T5lkH$-$K$O<!$Nh&$KA4ItBG$A9~$s $@>19g$HF1$8$3HKJj$^$9!#

```
plot "foo" using 1:3 with lines lt 4 lw 2, \
     "bar" using 1:5 with points lt 3 pt 5 ps 2
```

4X?t exists() $O%^%/%m$NI>2A$K4X$7$FM-MQ$G7g$&!#0J2<$NNc$O!"C $,0BA4$K%f!<%6Dj5AJQ?t$NL>A0$KE83+$G $-$k$+$I$&$+$r%A%'%C%/$7$^$9!#

```
C = "pi"
if (exists(C)) print C," = ", @C
```

%^%/%m$NE83+$O!"C10l0zMQIdFb!"$^$?$OFs=E0zMQIdFb$G$O9T$Jol$^$;s,!"5U0zMQId(!.) FbGO%^%/%mE8 3+5l$^$9!#

%^%/%m$NE83+$O!"gnuplot $,?7$7$%3%^%s%I9T$r8+$?$H$-$KHs>o$KAa$$CJ3,$Ggnuplot $,=hM}$7!"$=$7F?$@ 0lEY$@1=lr9T$$$^$9!#$hCF!"

```
A = "c=1"
@A
```

Nh$&$J%3!<%I$O@5$7$/<B9T$7$^$9$,!"0J2<$Nh&$J9T$O$@$a$G$9!#$=$l$O!"%^%/%m$NDj5A$,F1$89TK"k? $aE83+$K4V$K9g$o$J$$$+iG$9!#

```
A = "c=1"; @A   # will not expand to c=1
```

%3%^%s%I$r40@.$5$;$F<B9T9kKO!"%3%^%s%I **evaluate** $bM-MQ$G7g$&!#

J8; zNsJQ?t!"%^%/%m!"%3%^%s%I%i%$%sCV49 (mixing_macros_backquotes)

J8; zNsJQ?t$d5U0zMQId(!.) Kh$kCV49!"%^%/%m$KhkCV49$NAj8_4X78$O>/7dd3$7$$G$9!#5U0zMQId$O%^%/ %mCV49$rK8$2$J$$N$G!"

```
filename = "mydata.inp"
lines = ‘ wc --lines @filename | sed "s/ .*//" ‘
```

$O!"mydata.ipn $N9T?t$r@0?tJQ?t lines $KJ]B8$9k3HKJj$^$9!#$^$?!"Fs=E0zMQId$O5U0zMQId$NCV49$rK8 2J$$N$G!"

```
mycomputer = "‘uname -n‘"
```

$O!"%7%9%F%`%3%^%s%I **uname -n** NUV9J8; zNs$rJ8; zNsJQ?t mycomputer $KJ]B8$9k3HKJj$^$9!#

7+$7!"%^%/%mCV49$OFs=E0zMQIdFbGO5!G=7J$$N$G!"%7%9%F%`%3%^%s%I%r%^%/%mH7$FDj5A$7F=lr%^ %/%mH7$FMxMQ$7$+$D5U0zMQIdCV49$r9T$J$&$3HOGG$-$^$;$s!#

```
machine_id = "uname -n"
mycomputer = "‘@machine_id‘"  # $&$^$/$$$+$J$$ !
```

3N<:GT$O!"Fs=E0zMQId$, @machine_id $r%^%/%m$H7F2r<a9k3H$rK8$2$F$$$k$+$i$G$9!#%7%9%F%`%3%^%s %I%r%^%/%mH7$FJ]B8$7!"$=$N8e$=$l$r<B9T$9kK$O!"5U0zMQIdK+BN$b%^%/%mFb$K4^$akI,MW,$"$j$^$9!#$3 lOJ2<Nh$&$K%^%/%m$rDj5A$9k3HG<B8=G-$^$9!#sprintf $N=q<0$K$O3 <oN‘$N0zMQIdA4F,F~$l;R$K JC$F$$k3H$KCm0U$7F/$@$5$$!#

```
machine_id = sprintf('"‘uname -n‘"')
mycomputer = @machine_id
```

6h@Zjd%+%C%3$N;H$J} (Syntax)

%j%9%H$d:BI8$,%3%s%^(,) 6h@ZjG$"$kNKBP$7!"%*%W%7%g%s$d$=$l$KH<$&%Q%i%a!<%?$O%9%Z!<%9( ) 6h@Z$j$G$9!#HOOO$O%3%m%s(:) $G6h@Z$CF+$.$+$C$3([]) G/$/$j$^$9$7!"U8;zNs$d%U%!%$%kL>$OOzMQIdG/$/$j!"B>$K$$/D+%+%C%3(()) G/$/$kbN$,$"j^$9!#

%3%s%^$OOJ2<$N6h@ZjG;HMQ5l$^$9!#**set** %3%^%s%I$N**arrow**, **key**, **label** $N:BI8;Ev$FOa(fit) il$kJQ?t$N%j%9%H(%3%^%s%I **fit** $N%-!<%o!<%I **via** $KB3$/%j%9%H); %3%^%s%I **set cntrparam** $G;XDj$5lkHSHS$NEy9b@~$NCMd=$N%k!<%W%Q%i%a!<%?$N%j%9%H; **set** %3%^%s%I$N**dgrid3d dummy**, **isosamples**, **offsets**, **origin**, **samples**, **size**, **time**, **view** $N0z?t; L\@9$j$N0lCV$d$=$N%k!<%W%Q%i%a!<%?$N%j%9%H; %?%$%H%k$d<4$N8+=P7N0lCV; **plot**, **replot**, **splot** %3%^%s%I$Nx,y,z :BI8$N7W;;$K;H$olkG^2pJQ?t4X?t$N%j%9%H; **plot**, **replot**, **splot** %3%^%s%I$NJ#?t$NIA2h(%G!<%?!"$^$?$O4X?t) N=l>lN0lO"$N%-!<%o!<%I$N%j%9%H!#

(4]) %+%C%3$O!"L\@9$j$N8+=P$7$r(%k!<%W%Q%i%a!<%?$GOJ$/) L@<(E*$K=89gM?$($k>l9g$N6h@Z$jH7$F!"$^$?$O **fit**, **plot**, **replot**, **splot** %3%^%s%I$N **using** %U%#%k%?$G$N7W;;$r;X<($9%k$?a$K;H$ol^$9!#

(%+%C%3$d%3%s%^$ODL>o$N4X?t$NI=5-Gb;Hol$^$9!#)

$+$.$+$C3O!"**set**, **plot**, **splot** %3%^%s%IGOHOOO$r6h@Z$kNK;Hol$^$9!#

%3%m%s$O **range** (HOOO) ;XDj(**set**, **plot**, **splot** %3%^%s%I$G;H$olk) $NN>C<$NCM$r6h@Z$kNK!"$^$?$O **plot**, **replot**, **splot**, **fit** %3%^%s%I$N **using** %U%#%k%?$N3F%(%s%H%j$r6h@Z$kNK;Hol$^$9!#

%;%_%3%m%s(;) $O!"0l9T$N%3%^%s%I9TFb$GM?($ilkJ#?t$N%3%^%s%I$r6h@ZkN$K;H$ol^$9!#

Cf%+%C%3({}) $O!"3HD%J8;zNs=hM}%b!<%I(enhanced text mode) $N5-=R$d!"if/then/else J8$N%V%m%C%/$N6h@ZjH7F;Hol$^$9$7!"$^$?$OJ#AG?t$r5-=R$9kNKb;Hol$^$9:{3,2} = 3 + 2i HJj^$9!#

EEPIC, Imagen, Uniplex, LaTeX, TPIC $N3F=PNO7A<0$G$O!"C10l0zMQIdFb$N\\ $^$?$OFs=E0zMQIdFb$N\\\\ $G2~9T$r<($9%3$H$,2DG=$G$9!#

0zMQId (Quotes)

gnuplot $O!"J8;zNs$r6h@ZkN$K!"Fs=E0zMQId(ASCII %3!<%I34 HV)!"C10l0zMQId(ASCII %3!<%I39 HV)!"$*$h$S5U0zMQId(!.) (ASCII %3!<%I96 HV) $N3 <oN'$N0zMQId$r;H$$^$9!#

%U%!%$%kL>$OC10l0zMQId!"$"$k$$$OFs=E0zMQIdFb$G0O$_$^$9!#3N%^%K%e%"%kGO1HL$K%3%^%s%I$NNc<(GO!"o+jd9/9k$?$a$K%U%!%$%kL>$OC10l0zMQId$G$/$/$j!"B>$NJ8;zNs$Fs=E0zMQId$G$/$/j^$9!#

8+=P$7(label)!"%?%$%H%k(title)!"$^$?O=$NB>$NIA2hMWAG$G;HMQ$5lkJ8;zNsDj?t$dJ#?t9TJ8;zNs$OC10l0zMQId!"$"$k$$$Fs=E0zMQIdFb$G0O$_$^$9!#0zMQId$G0O$^l?J8;zNsN5iJ$k=hM}$N7k2L$O!"$I$N0zMQId5-9f$rA*V+KhCFJQoj$^$9!#

\n (2~9T) $d\345 (8 ?JI=5-$NJ8;z%3!<%I) Nh$&$J%P%C%/%9%i%C%7%e(\) Kh$kFC<lJ8;zI=8=$O!"2=E0zMQIdFb$NJ8;zNs$G$O8zNO$r;}A^$9!#C10l0zMQIdFb$G$O!"%P%C%/%9%i%C%7%e<+BN$,DI>o$NJ8;z$H8+J5l^$9!#C10l0zMQIdFb$NJ8;zNs$GC10l0zMQId<+BN(ASCII %3!<%I39 HV) $r;H$&KO!"$=$l$r=E$M$F=q$/I,MW$,$"j^$9!#$D$^$j!"J8;zNs "d\" s' b\\" $H!"d" s'' b\' $O40A4$KF1$8$bNHJj$^$9!#

1 DNJ#?t9TJ8;zNs$K4X$9$k0lCV9g$o$;$O3F9T$KF1Ey$KF/$-$^$9!#$hCF!"Cfl{$K0lCV9g$o$;$5l?J8;zNs

```
"This is the first line of text.\nThis is the second line."
```

$O<!$Nh&$KI=<($5l^$9:

```
                    This is the first line of text.
                       This is the second line.
```

7+$7

```
'This is the first line of text.\nThis is the second line.'
```

$@$H<!Nh$&$KJj$^$9!#

```
        This is the first line of text.\nThis is the second line.
```

3HD%J8;zNs=hM}(enhanced text processing) $OFs=E0zMQId$KBP7F$bC10l0zMQId$KBP7F$b5!G=$7$^$9!#7+$7!"$=$N%b!<%I(I%r%5%]!<%H$7$F$$$k=PNO7A<0GN$_F/$-$^$9!#0J2<;2>H: **enhanced text (p. 25)**!#

5U0zMQId$O,%3%^%s%I%i%$%sCf$NCV4 9$N$?$a$K%7%9%F%'%3%^%s%I$r0O$'$N$K;H$$^$9!#0J2<;2>H: **substitution (p. 43)**!#

;~4V/F|IU%G!<%? (Time/Date)

gnuplot $OF~NO%G!<%?$H7F;~4V/F|IU>pJs$N;HMQ$r%5%]!<%H7F$$$^$9!#$3$N5!G=$O **set xdata time**, **set ydata time** JIKN%3%^%s%IKhCFM-8zKJj^$9!#

FbItGOA4FN;~4V/F|IU$O1970 G/$+iNIC?t$KJQ49$5l^$9!#%3%^%s%I **set timefmt** $OA4$F$NF~NO$KBP9k%G%U%)%k%H$N=q<0$rDj5A7^$9!#%G!<%?%U%!%$%k!"HCOO!"<4$NL\@9$j$N8+=P$7!"%i%Y%k$NOLCV$H!"F|;~%G!<%?CM$r<u$1F~lk9YFNbNXNF~NO$N=q<0$,!"%G%U%)%k%HG3lKJj^$9!#01;~$KOOlD$N%G%U%)%k%HF~NO=q<0$N$_$,M-8z$G$9!#hC$F!"%U%!%$%kFb$Nx $Hy $NN>J}$,;~4V/F|IU%G!<%?G"$k>l9g$O!"%G%U%)%k%HGO$=$l$OF1$8=q<0$H2r<a$5l^$9!#$7$+$7!"3N%G%U%)%k%H$O!"**using** ;XDj$G4X?t **timecolumn** $rMQ$$$F!"$=$l$KBP1~$9$kFCDj$N%U%!%$%k$dNs$+$i%G!<%?rFI_3`3HKh$j!"UQ$(k3H,2DG=$G$9!#

IC?t$X(IC?t$+$i) $NJQ49$O9q:]I8=';~(UT;%0%j%K%C%8I8=';~(GMT) $HF1$8) $,;H$ol^$9!#3F9qI8=';~$d2F;~4VXNJQ49$N5!G=$O2?$b;}$A9go;$F$$$^;$s!#$b$7%G!<%?$,9Y$FF1$8I8=';~4VBS$K=>$C$F$$kJi($=$7$FA4$F$,2F;~4V$+!"$=$&GJ$$$+NIAi$+0lJ}$KN_=>$&$J$i)$3lK4X7F2?$b?4G[$9k3HO$"$j$^$;$s!#$7$+$7!"$"$J$?$,;HMQ9k%W%j1!<%7%g%s$G@dBPE*$J;~9o$r87L)$K9M;!7J1l$P$$$1J>l9g$O!"$"J?<+?H$,UT $KJQ49$9Y-G7g&!#

show xrange Nh$&$J%3%^%s%I$O!"$=$N@0?tCM$r **timefmt** $K=>$C$F2r<a$7D>7^$9!#**timefmt** $rJQ99$7Fb$&lEY **show** G=NCMrI=<(5;kH!"$=$l$O?7$7$$ **timefmt** $K=>$C$FI=<($5l^$9!#$3N?$a!"(**set xdata** JIKh$j)$=$N<4$KBP9k%G!<%?$rF|;%C%H$9kH!"$=NCMO@0?tCM$H7FI=<(5lk3HKJj$^$9!#

%3%^%s%I **set format** $^$?$O **set tics format** $O!";XDj$5l?<4KBP9$kF~NO$,;~4V/F|IUG"kJ7K4Xoi$:L\@9$j$N8+=P$7$K;H$olk=q<0$rDj5A$7$^$9!#

;~4V/F|IU>pJs$,%U%!%$%k$+$iIA2h5l$k>l9g!"**plot**, **splot** %3%^%s%IGO **using** %*%W%7%g%s$r!VI,$:!W;H$&I,MW$,$"$j$^$9!#**plot**, **splot** GO3F9T$N%G!<%?$Ns$NJ,N%$K%9%Z!<%9$r;H$$$^9,!";~4V/F|IU%G!<%?O=NCfK%9%Z!<%9$r4^$_F@k+iG$9!#%b%?%?%V6h@Z$j$r;HMQ$7$F$$kNJ$i!"$"J?%9%F%`$,$=lrI&07$&$+3N$+$ak?aK2?EY$b%F%9%H$9kI,MW,$"$kG7g&!#

4X?t **time** $O!"8=:_$N%7%9%F%`;~9o$rF@$kNK;H($^$9!#3NCM$O!"**strftime** 4X?t$GF|;~J8;zNs$KJQ49$G$-$^$9$7!"**timecolumn** HA_9go;$FjBPE*$JF|;~%0%i%U$r:n@.$9kNKb;H($^$9!#0z?t$N7?$O$=$l$,JV$9bN$r7hDj$7$^$9!#0z?t$,@0?t$N>l9g$O time() $O8=:_$N;~9o$r1970 G/1 7n1 F|$+iN@0?tH7$FJV$7!"0z?t$,<B?t($^$?$OJ#AG?t)Ji$PF1MM$NCM$r<B?t$H7FJV7^9,!">.?t(IC0J2<)ItJ,$N@:EY$O!"%*%Z%l!<%#%s%0%7%9%F%`$K0MB8$7$^$9!#0z?t$,J8;zNs$JiP!"$=$l$r=q<0J8;zNs$G$"$kH_$J$7!"=q<02=5l$?F|;~J8;zNs$rDs6!9kh&$=$l$r **strftime** KEO7$^$9!#

<!NNcO;~4V/F|IU%G!<%?$NIA2h$NNc$G$9!#

```
%U%!%$%k "data" $O0J2<$N$h$&$J9T$+$i$J$k$H$7$^$9:

     03/21/95 10:00  6.02e23

$3$N%U%!%$%k$O0J2<$N$h$&$K$7$FI=<($5$l$^$9:

     set xdata time
     set timefmt "%m/%d/%y"
     set xrange ["03/21/95":"03/22/95"]
     set format x "%m/%d"
     set timefmt "%m/%d/%y %H:%M"
     plot "data" using 1:3

$3$3$G!"x <4$NL\@9$j$N8+=P$7$O "03/21" $N$h$&$KI=<($5$l$^$9!#

8=:_$N gnuplot $O!";~9o$r%_%jIC@:EY$GD>I@W$7!";~9o$N%U%)!<%^%C%H$b$=$l$KH<$C$FJQ99$5$l$F$$$^$9!#Nc:
8=:_$N;~9o$r%_%jIC@:EY$GI=<(
    print strftime("%H:%M:%.3S %d-%b-%Y",time(0.0))
    18:15:04.253 16-Apr-2011
```

0J2<;2>H: **time_specifiers (p. 125)**!#

Part II

IA2h%9%?%$%k (plotting styles)

gnuplot GO! "$?$/5s$NIA2h%9%?%$%k$,MxMQ$G$-$^$9! #$=li$O! "%"%k%U%!%Y%C%H=g$KOJ2<$K>R2p$5lF$$$^$9! #%3%^%s%I **set style data** $H **set style function** $O! "$=$lOJ9_$N**plot** $d **splot** %3%^%s%I$KBP7F%G%U%)%k%H$NIA2h%9%?%$%k$rJQ99$7$^$9! #

IA2h%9%?%$%k$O! "%3%^%s%I **plot** $d **splot** $N0lItJ,$H$7F! "L@<(E*$K%*%W%7%g%s;XDj9k3HbG$-$^$9! #0l$D$NIA2h$NCf$G! "J#?t$NIA2h%9%?%$%k$rAH$_9g$o$;$?$>19g$O! "3FMWAGKBP7$FIA2h%9%?%$%k$r;XDj$9kI,MW,$"$j$^$9! #

Nc:

```
plot 'data' with boxes, sin(x) with lines
```

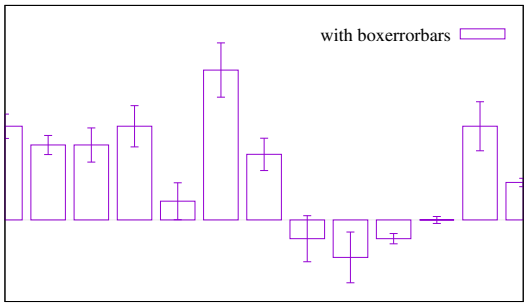
3FIA2h%9%?%$%k$O! "$=$l<+BN$,%G!<%?%U%!%$%k$+$i$N$$$/D+$N%G!<%?$NAH$r4|BT$7$^$9! #Nc$($P! "%G%U%)%k%HGO **lines** %9%?%$%k$O! "y NCM@1N1 Ns$N%G!<%?(x NCMCOEL[$K=gHV$K<hil$k)! "$^$?$O:G=i$, x, <! $, y $N2 DNNs$r4|BT7F$$$^$9! #%U%!%$%k%N2?Ns%N%G!<%?rIA2h%G!<%?$H2r<a$5$;$k$&$^$J}K!$K4X9k>pJsKD$$$F$O! "0J2<;2>H: **using (p. 92)**! #

Boxerrorbars

IA2h%9%?%$%k **boxerrorbars** $O2<!85$N%G!<%?IA2hGN$_MxMQ2DG=$G$9! #$3lO! "3 Ns! "$^$?$O4 Ns! "$^$?$O5 Ns$N%G!<%?$,I,MW$G$9! #F~NCNs$rDI2C(4,5,6 NsL\) 9k$H! "$=li$O3F%G!<%?E@Kh$Nvariable color >pJs(0J2<;2>H: **linecolor (p. 37)**, **rgbcolor variable (p. 38)**) H7$F;H$ol^$9! #8m:9@~$O! "H"$N6-3&$HF1$8?'$GIA2h5l$^$9! #

```
3 Ns:  x  y  ydelta
4 Ns:  x  y  ydelta xdelta        # H"$NI} != -2
4 Ns:  x  y  ylow  yhigh          # H"$NI} == -2
5 Ns:  x  y  ylow  yhigh  xdelta
```

y $N8m:9$, "ydelta" $N7A<0$GM?$($ilF! "H"$N2#I}$,$"$i$+$8$a-2.0 $K@_Dj$5lF(**set boxwidth -2.0**) $$$J1l$P! "H"$N2#I}$O4 NsL\$NCM$GM?$(il$^$9! #y $N8m:9$, "ylow yhigh" $N7A<0$GM?$($ilk>19g$OH"$N2#I}$O5 NsL\$NCM$GM?$(il$^$9! #FCJL$J>19g$H7F! "'ylow yhigh" $N8m:97A<0$N4 Ns$N%G!<%?$KBP9k **boxwidth = -2.0** $H$$&@_Dj$,$"j^$9! #$3$N>19gH"$N2#I}$O! "NY@\$9$kH"$K$/$CD/h&$K<+F0E*$K7W;;5l$^$9! #B Ns$N%G!<%?$N>19g$b! "2#I}$O<+F0E*$K7W;;$5l^$9! #



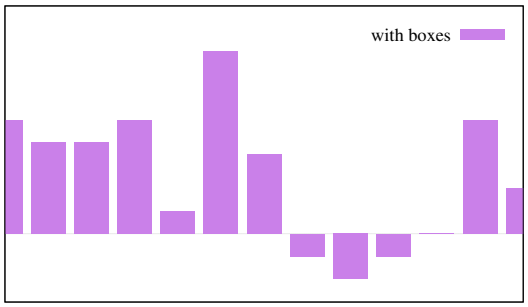
H"$N9b$5$O! "**yerrorbars** %9%?%$%kF1MM$Ky $N8m:9$NCM$+$i7hDj5l$^$9! #y-ydelta $+$iy+ydelta $^$G! "$"$k$$$Oylow $+$iyhigh $^$G! "3liO2?Ns$N%G!<%?$,M?$($ilF$$$k$+$KhC$F7h$^j^$9! #

Boxes

boxes %9%?%$%k$O2<!85IA2hGN$_MxMQ2DG=$G$9! #$3lOM?$($il?x :BI8$rCf?4$H$7! "x <4$+$i(%0%i%U$N6-3&$+$i! "GO$"$j$;$s)M?$($il?y :BI8$^$G$NH"$r=q$-$^$9! #$3lO4pK\E*$K! "2 Ns! "$^$?$O3 Ns$N%G!<%?r;HMQ$7$^$9! #M>J,$JF~NCNs$O! "variable 9TdEIjDY$7?'$N>pJs$,Ds6!$5l?bNH$7F;HMQ$5l^$9(0J2<;2>H: **rgbcolor variable (p. 38)**)! #

```
2 Ns:  x  y
3 Ns:  x  y  x_width
```

H"$NI}$O3 DN$&$A0lDNJ}K!$G7hDj$5l^$9!#F~NC%G!<%?$,3 NsL\$N%G!<%?$r;}$C$F$$$k>19g$O!"$=l,H"$NI}$K%;%C%H5l$^$9!#$=$&GJ$/$F **set boxwidth** %3%^%s%I$GH"$NI}$,%;%C%H$5lF$$$?>19g$O!"$=l,;Hol$^$9!#$=$NIAiGbJ$$>19g!"H"$NI}$O!"NY@\$9$kH"$,$/$CD/h&$K<+F0E*$K7W;5l$^$9!#



H"$NCf?H$O8=:_NEIjDV$7%9%?%$$k (fillstyle) $K=>$CFEIjDV5l$^$9!#>\:Y$O!"0J2<;2>H **set style fill (p. 163)**!#7$7$EIjD$V$7%9%?%$$k$rplot %3%^%s%I>e$G;XDj9k3HbG$-$^$9!#EI$jDV$7%9%?%$$k, **empty** $N>19g$O!"H"OEIjDV5l$^$;$s!#EI$jDV$7%9%?%$$k, **solid** $N>19g$O!"H"$O8=:_$NIA2h?'$G%Y%?EI$j5l$^$9$,!"fillstyle %Q%i%a!<%?$rDI2C9k3HGEIjDV$7L)EY$r@)8fG-$^$9!#0 $OGX7J?'!"1 $OIA2h?'$=NbNKJj$^$9!#EIjD$V$7%9%?%$$k, **pattern** $N>19g$O!"H"$O8=:_$NIA2h?'$G!"$"$k%Q%?!<%s$GEIjDV7$^$9!#

Nc:

%G!<%?U%!%$%k$rEIjDV7$?H"$GIA2h$7!"H"F1;N$r>/$7?bD>J}8~$K%9%Z!<%9$r6u$1$k (K@%0%i%U):

```
set boxwidth 0.9 relative
set style fill solid 1.0
plot 'file.dat' with boxes
```

%Q%?!<%sGNEIjD$V$7%9%?%$$k$NH"$G sin $H cos $N%0%i%U$rIA2h:

```
set style fill pattern
plot sin(x) with boxes, cos(x) with boxes
```

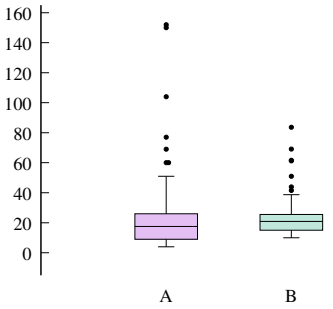
sin $O%Q%?!<%s0 $G!"cos $O%Q%?!<%s1 $GIA2h$5l^$9!#DI2C$5lkIA2h$O=PNO%I%i%$%P$,%5%]!<%H$9$k%Q%?!<%s$r=[4DE*$K;HMQ$7$^$9!#

$=$l$>$l$N%G!<%?=89g$GL@<(E*KEIjDV$7%9%?%$$k$r;XDj:

```
plot 'file1' with boxes fs solid 0.25, \
     'file2' with boxes fs solid 0.50, \
     'file3' with boxes fs solid 0.75, \
     'file4' with boxes fill pattern 1, \
     'file5' with boxes fill empty
```

Boxplot

boxplot $O!"CM$NE}7WE*$JJ,I[$rI=8=9k0lHIE*$JJ}K!$G$9!#;MJ,0L6-3&$O!"1/4 $NE@$,Bh0l;MJ,0L6-3&0J2<NCMr;}Dh$&$K!"1/2 $NE@$,BhFs;MJ,0L6-3&(%a%8%"%s)0J2<NCMr;}Dh$&$K!"Ey$H7hDj$5l^$9!#Bh0l;MJ,0L$HBh;0;MJ,0L$N4V$NNN0h$r0C$`h&$KH"$rIA2h$7!"%a%8%"%sCM$NH3mK$O?eJ?@~$rIA$-$^$9!#H"$R2O!"H"$+$i%f!<%6;XDj8B3&$^$G1dD9$5$l$^$9!#$=$liN8B3&$N30$K$"$kE@$O!"$RHDRH$DIA2h$5l^$9!#



Nc:

```
# x :BI8$O 1.0!"y $O 5 NsL\$NCM$N$H$3$m$K boxplot $rG[CV
plot 'data' using (1.0):5


# >e$HF1$8$@$,!"HCOC30$NE@$O1#$7!"boxplot $NI}$r 0.3 $K$9$k
set style boxplot nooutliers
plot 'data' using (1.0):5:(0.3)
```

%G%U%)%k%HGO! "using ;XDjKh$k2 NsL\$Ny N9YFNCMKBP9k boxplot $r1 D@$1@8@.7^$9! #7+ $7! "DI2C$N(4 $DL\$N) Ns$r;XDj$9kH! "$=$NNsNCMr$"$k0x;RJQ?t$NN%;6E*$J%l%Y%kCMG"kH8+$J$7! "$= $NN%;6CM$N%l%Y%kNCMN?t$@$1$N boxplot $rIA2h$7$^$9! #$=$liN boxplot $N4V3V$O%G%U%)%k%HGO1.0 $G$9 $,! "$3lO **set style boxplot separation** $GJQ99$G$-$^$9! #%G%U%)%k%H$G$O! "0x;RJQ?t$NCM$O! "3F boxplot $N2<($^$?$O>e) $NL\@9$j$N%i%Y%k$KI=<(7^$9! #

Nc

```
# 'data' $N 2 NsL\$O "control" $+ "treatment" $N$$:$l$+$NJ8;zNs$G
# 0J2<$NNc$O! "$=$N0x;RKh$N 2 $D$N boxplot $r@8@.$9$k
plot 'data' using (1.0):5:(0):2
```

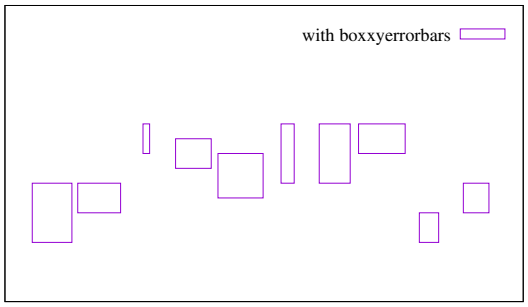
$=$NH"$N%G%U%)%k%H$NI}$O **set boxwidth <width>** $G@_Dj$G$-$^9,! "plot %3%^%s%I$N **using** Kh$k3 HVL\$N%*%W%7%g%sNsGb;XDjG-$^$9! #1 HVL\$H3 HVL\$NNs(x :BI8$HI}) $ODL>o%G!<%?Ns$GOJ$/Dj?t$H7FM?$($^$9! #

%G%U%)%k%HGO! "H"R2$OH"$NC<$+$i! "y NCM,;MJ,0IHOOO$N1.5 G\$NCf$K<}$^CF$$$F:G$bN%$l$F$$$kh&$JE@$^$G1dD9$5l^$9! #%G%U%)%k%H$G$O! "HOOO30$NE@(outlier) $O1_(pointtype 7) GIA+l^$9! #H"$R2NC<$NK@$NI}$O **set bars** $r;H$C$F@)8f$G$-$^$9! #

3liN%G%U%)%k%H$N@-<A$O **set style boxplot** %3%^%s%I$GJQ99$G$-$^$9! #0J2<;2>H: **set style boxplot (p. 162)**, **bars (p. 109)**, **boxwidth (p. 111)**, **fillstyle (p. 163)**,**candlesticks (p. 49)**! #

Boxxyerrorbars

boxxyerrorbars %9%?%$%k$O2<!85$N%G!<%?IA2h$GN_MxMQ2DG=$G$9! #3l$O! "**xyerrorbars** %9%?%$%k$,C1$K@~J,$N8r:9$GI=8=$9kH3m$rD9J}7A$GI=8=9k3H$r=|$1$P! "$[$\F1$8$G$9! #3l$O! "F~NO%G!<%?$N4 Ns! "$^$?$O6 Ns$r;HMQ7^$9! #M>J,$JF~NONs$O! "variable 9T$dEIjDY7?'$N>pJs$,Ds6!$5$1$?$bNH7F;HMQ5l$^$9(0J2<;2>H: **rgbcolor variable (p. 38)**)! #




```
4 Ns:  x  y  xdelta  ydelta
6 Ns:  x  y  xlow  xhigh  ylow  yhigh
```

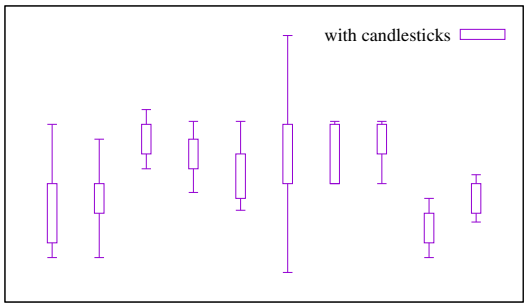
H"$NI}$H9b5O **xyerrorbars** %9%?%$%kF1MMx, y $N8m:9$+$i7hDj$5l^9D$^$j! "xlow $+$i xhigh $^$G$H ylow $+$i yhigh $^$G! "$^$?$Ox-xdelta $+$i x+xdelta $^$G$Hy-ydelta $+$i y+ydelta $^$G! #3liO2?Ns$N%G!<%?,M?$(il$F$$$k$+$KhC$F7h$^j^$9! #

F~NONs$rDI2C(5,7 NsL\) 9k$H! "$=li$O3F%G!<%?E@Kh$Nvariable color >pJs(0J2<;2>H: **linecolor (p. 37)**, **rgbcolor variable (p. 38)**) G"kH7F;Hol$^$9! #

H"$NFbIt$O8=:_NEIjDV$7%9%?%$%k(fillstyle) $K=>$CFEIil^$9! #\:Y$O! "0J2<;2>H: **set style fill (p. 163)**, **boxes (p. 47)**! #plot %3%^%s%I>e$G?7$7EIjDV$7%9%?%$%k$r;XDj$9k3HbG-$^$9! #

Candlesticks

candlesticks %9%?%$%k$O!"6bM;%G!<%?$N2 <!85$N%G!< %?IA2h!"$*$h$SE}7W%G!<%?$NR2IU$-$NK@%0%i%U$r@8@. 9kNK;H$($^$9!#5-9f$O!"?eJ?J}8~KOx $rCf?4$H$7!" ?bD>J}8~$K$O3+;OCM(open) $H=*CM(close) $r6-3&$H9k D9J}7A$,;H$ol^$9!#$=7F!"$=$Nx :BI8NH3m$KD9 J}7A$NFCZs$+$i:G9bCM(high) $^$G$H!"D9J}7A$ND l$+ $i:G0BCM(low) $^$G$N?bD>@~$,0z$+$l$^$9$,!"$3$N?bD> @~$O:G9bCM$H:G0BCM$,F~lBXoCF$bJQ99$5l^$;$s!#



4pK\E*$K5 Ns$N%G!<%?$,I,MW$G$9:

```
6bM;%G!<%?:   date  open  low  high  close
H"$R$2IA2h:   x  box_min  whisker_min  whisker_high  box_high
```

D9J}7A$NI}$O%3%^%s%I **set boxwidth** $G@)8f$G$-$^9,!"0JA0$N gnuplot XN8eJ}8_49@-H7$F!"boxwidth %Q%i%a!<%?$,@_Dj5l$F$$$J$>$l9g$O**set bars** <**width**> $G@)8f$5lkh&KJCF$$^$9!#

3lNBeojK!"H"$R$2(box-and-whisker) $N%0%k!<%W2=$K4X9kL@<(E*$JI}$N;XDj$r!"DI2C$N6HVL\$N%G!< %?$G;XDj$G$-$^$9!#$=$NI}$O!"x :BI8$HF1$8C10L$GM?$(J1lP$$$1$^$;$s!#

F~NCNs$rDI2C(6 NsL\!"$^$?$O6 NsL\$,%G!<%?$NI}$H7F;Hlk>19g$O7 NsL\) 9k$H!"$=li$O3F%G!<%?E@ Kh$Nvariable color >pJs(0J2<;2>H:**linecolor (p. 37)**, **rgbcolor variable (p. 38)**) H7$F;H$ol^$9!#

%G%U%)%k%HGO!"1tD>@~J,NFCZsHDlKO?bD>$K8r$o$k?eJ?@~$O0z$+$l$^$;$s!#$=lr0z$-$?$>19g!"Nc$($PE57?E*$JNc$OH"$R$2?^(box-and-whisker plot) GN;HMQG9$,!"IA2h%3%^%s%I$K%-!<%o!<I **whiskerbars** $rDI2C$7F$/$@$5$$!#%G%U%)%k%HGO!"?eJ?@~$OH"(candlestick) $N?eJ?I}0lGU$K0z$+$l$^$9$,!"$=lOA4BN$N I}$KBP9k3d9g$r;XDj$9$k3$H$GJQ99$G$-$^$9!#

6bM;%G!<%?$NDL>o$N47=,GO!"(3+;OCM) < (=*CM) $N>19g$OD9J}7A$O6u$G!"(=*CM) < (3+;OCM) $N>19g$OEI$j DY$5l^$9!#8=:_$Nfillstyle $K"empty" $r%;%C%H$7F$$$k>19g$O!"<B:]$K3&Jj$^$9!#0J2<;2>H: **fillstyle (p. 163)**!#fillstyle KEIjDY$7!"$^$?O%Q%?!<%s$r%;%C%H$7F$$$k>19g$O!"3+;OCM!"=*CM$K4X78J/!"9Y$F $NH"$K$=$l$;H$ol^$9!#0J2<;2>H: **set bars (p. 109)**,**financebars (p. 53)**!#$^$?!"0J2<$b;2>H$7F$/$@ $5$$!#

```
candlestick
```

$H

```
finance
```

$N%G%b!#

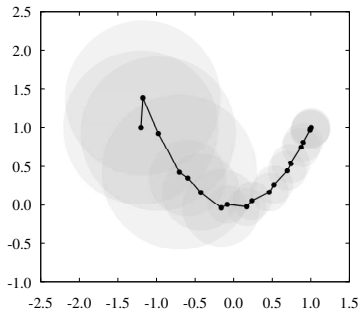
Cm0U: Cfl{CM$rI=$9$?$a$N5-9f$JIrDI2C7?$>19g!"0J2<$NNcNh$&$K!"R2IU$-$NK@%0%i%U$KB>$NIA2h%3 %^%s%I$rDI2C$9kI,MW,$"$j$^$9:

```
# %G!<%?Ns:   X ':G>.CM' '1/4 0L$NCM' 'Cfl{CM' '3/4 0L$NCM' ':GBgCM'
set bars 4.0
set style fill empty
plot 'stat.dat' using 1:3:2:6:5 with candlesticks title 'Quartiles', \
     ''         using 1:4:4:4:4 with candlesticks lt -1 notitle


# $R$2$N>e$K?eJ?@~$rH<$&IA2h$G!"?eJ?@~$NI}$rA4BNI}$N 50% $K$9$k
plot 'stat.dat' using 1:3:2:6:5 with candlesticks whiskerbars 0.5
```

0J2<;2>H: **set boxwidth (p. 111)**, **set bars (p. 109)**, **set style fill (p. 163)**, **boxplot (p. 48)**!#

Circles

%9%?%$%k **circles** $O! "3F%G! <%?E@$KL@< (5l$?H>7B$Nl_ $rIA2h$7$^$9! #3 Ns$N%G! <%?$rM?$ ($?>l9g$O! "$=$l$r x, y, H>7B$H2r<a7^$9! #H>7B$O! ">o$KIA2h$N?eJ?<4 (x $^$? $O x2) $NC10L$G2r<a5l$^$9! #y J}8~$N=L<\$HIA2h$N%" %9%Z%/%HHf$O! "$$$:lbL5; k5l$^$9! #2 Ns$N%G! <%?$7$+ M?$ ($J$$H! "H>7B$O **set style circle** $+$i<hj^$9! #$3 $N>l9g! "H>7B$O graph $+screen $N:BI87O$GM?$ (k3H, G-$^$9! #



%G%U%)%k%HGO40A4$J1_$rIA2h7^9,! "4 NsL\! "5 NsL\ $K3+; O3Q! "=*N;3Q$r; XDj9k3H$G@p7A$rIA2h9k3H$b G-$^$9! #4 NsL\! "$"$k$$O6 NsL\$N%G! <%?$rDI2C$7$FItJ,1_$N?'$r; XDj$9k3HbG-$^$9! #@p7A$N3+; O3Q! "=*N;3Q$NC10LOEYG; XDj9kI,MW$,$"j^$9! #0J2<; 2>H: **set style circle (p. 166)**,**set style fill (p. 163)**! #Nc:

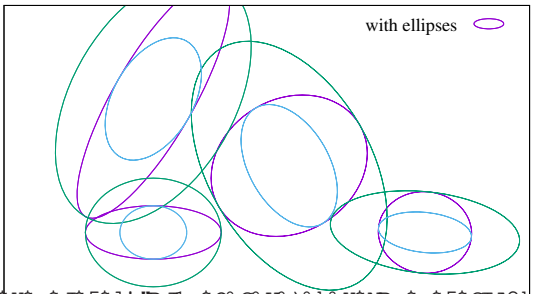
```
# LI@Q$, 3 NsL\$NCM$KHfNc$9$k$h$&$J1_$rIA2h
set style fill transparent solid 0.2 noborder
plot 'data' using 1:2:(sqrt($3)) with circles, \
     'data' using 1:2 with linespoints

# 1_$NBe$o$j$K%Q%C%/%^%s$rIA2h
plot 'data' using 1:2:(10):(40):(320) with circles

# %$%s%i%s%G! <%?$G1_%0%i%U$rIA2h
set xrange [-15:15]
set style fill transparent solid 0.9 noborder
plot '-' using 1:2:3:4:5:6 with circles lc var
0    0    5    0    30    1
0    0    5   30    70    2
0    0    5   70   120    3
0    0    5  120   230    4
0    0    5  230   360    5
e
```

3l$O! "pointstyle 7 $GE@$N%5%$:$r variable H7$? **points** Kh$kIA2h$H; w$F$$$^9,! "circles $Ox <4$NHO 0O$G?-=L$5lkE@$,0 [$Jj^$9! #0J2<$b; 2>H: **set object circle (p. 146)**, **fillstyle (p. 163)**! #

Ellipses

%9%?%$%k **ellipses** $O! "3F%G! <%?E@$KBJ1_(ellipse) $rIA2h 7^$9! #3N%9%?%$%k$O! "2 <!85IA2h$KN_E,MQ5l$^ $9! #3FBJ1_$O! "Cf?4! "<g<4D>7B! "I{<4D>7B! "x <4$H<g<4$N J93Q! "$GI=8=$5l^$9! #

```
2 Ns: x y
3 Ns: x y major_diam
4 Ns: x y major_diam minor_diam
5 Ns: x y major_diam minor_diam angle
```



2 Ns$N%G! <%?$N$_$,M?$ (il$?>l9g$O! "$=$liOCf?4$N:BI8$H$_$J5l! "BJ1_$O%G%U%)%k%H$NBg$-$5$GIA2h$5 l^$9 (0J2<; 2>H: **set style ellipse (p. 166)**)! #BJ1_$N8~$-$O! "<g<4$Hx <4NJ$93Q$GDj5A5l$^$9$,! "$= lb%G%U%)%k%H$Nellipse $N%9%?%$%k$+$i<hil$^$9 (0J2<; 2>H: **set style ellipse (p. 166)**)! #3 Ns$N%G! <%? $,M?$ (il$?>l9g$O! "3 NsL\$O<g! "I{N><4$ND>7B(I}) H7$F; H$ol^$9! #8~$-$O%G%U%)%k%H$G0 KJj^$9! # 4 Ns$N%G! <%?$,M?$ (il$?>l9g$O! "$=$liOCf?4$N:BI8! "<g<4D>7B(I}) ! "I{<4D>7BH7$F; H$ool$^$9! #3l iOD>7BG"$j! "H>7B$G$J$$3HKCm0U7F$/$@$5$$! #5 Ns$N%G! <%?$,M?$ (il$?>l9g$O! "5 NsL\$NCM$OEYC1 0L$N8~$-$N3QEY$N; XDj$H7F; Hol$^$9! #BJ1_$O! "3,4,5 Ns$NCMOIiNCMH7$F; XDj$9k3HG! "$=$liN%G %U%)%k%HNCMrMxMQ7FBJ1_$r=q$+$;$k3HbG$-$^$9! #

>eN9YF$N>l9g$G!"variable color %G!<%?$r:G8e$NNs(3,4,5,6 NsL\) H7$FDI2C$G$-$^$9!#>\:Y$O0J2<;2>H: **colorspec (p. 37)**!#

%G%U%)%k%HGO!"<g<4D>7B$O?eJ?<4(x $^$?$O x2) $NC10L!"I{<4D>7B$O?bD><4(y $^$?$O y2) $NC10L$G$"$k$H $_$J5l$^$9!#3l$O!"x <4$H y <4$N=L<\$,0[Jk>l9g!"<g<4$HI{<4$NHf$O2sE>8e$K$O@5$7$/$OJi$J$$!"$H $$$&3H$r0UL#$7$F$$$^$9!#$7$+$7$3$N5sF0$O!"%-!<%o!<%I **units** $GJQ99$G$-$^$9!#

3l$K4X$7FO!"3 <oN'$NBeMQIJ$,$"$j$^$9: **units xy** $,IA2h;XDj$K4^$^$l$F$$$k>l9g!"$=$N<4$O>e$K=RY?h&$K=L<\$5l^$9!#**units xx** H9kH!"D>7B$ON><4$H$b x <4$NC10L$G7W;;$5$l!"**units yy** $ON><4$H$b y <4$NC10L$G7W;;$5l^$9!#8e$N2 DO!"IA2h$N%5%$%:$rJQ99$7Fb!"BJ1_$O@5$7$$%"%9%Z%/%HHf$r;}$A$^$9!#

units $r>JN,$7$?>l9g$O!"%G%U%)%k%H$N@_Dj$,;HMQ5l!"**units xy** HJj^9,!"3l$O!"**set style ellipse** $G:FDj5A2DG=$G$9!#

Nc(BJ1_$rM-8z$J@~<o$r<~4|E*$K;HMQ7FIA2h):

```
plot 'data' using 1:2:3:4:(0):0 with ellipses
```

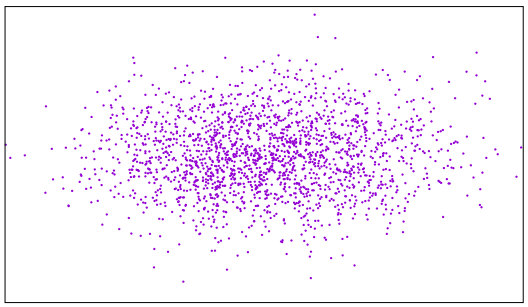
0J2<$b;2>H: **set object ellipse (p. 146)**, **set style ellipse (p. 166)**, **fillstyle (p. 163)**!#

Dots

dots %9%?%$%k$O3FE@$K>.$5$J%I%C%H$rIA2h7^$9!#$3lO$?$/5s$NE@$+iJ$k;6I[?^$NIA2h$KJXMx$G7g$&!#2 <!85IA2h$G$O1 Ns!"$^$?$O2 Ns$NF~NO%G!<%?$,!"3 <!85IA2hGO3 Ns$N%G!<%?$,I,MW$G$9!#

=PNO7A<0KhCF$O(post, pdf JI)!"%I%C%HNBg-5O linewidth $rJQ99$9k3HG@)8fG-k3Hb$"$j$^$9!#

```
1 Ns:  y          # x $O9THV9f
2 Ns:  x  y
3 Ns:  x  y  z    # 3D $N$_ (splot)
```



Filledcurves

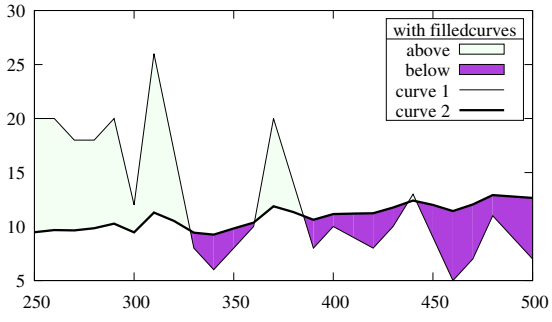
%9%?%$%k **filledcurves** $O2 <!85IA2h$GN_MxMQ2DG=$G$9!#3l$O3 <oN'$N0[Jk;XDj$,2DG=$G$9!#:G=i$N2 <oN'$O4X?tIA2h!"$"$k$$$O2 Ns$NF~NO%G!<%?MQ$NbN$G!"8e$G>R2p9kh&$K%*%W%7%g%s$G99Jk;XDj$,$G$-$^$9!#

=q<0:

```
plot ... with filledcurves [option]
```

$3$3$G!"%*%W%7%g%s$O0J2<N&AN$$$:l+$G$9:

```
[closed | {above | below}
{x1 | x2 | y | r}[=<a>] | xy=<x>,<y>]
```



:G=iNbNO **closed** $G!"$3lO6J@~$=$l<+?H$rJDB?3Q7A$H8+J7$^$9!#F~NO%G!<%?$,2 Ns$N>l9gKO3l$,%G%U%)%k%H$G$9!#

2 <oN'L\$O;XDj5l$?<4!"$"$k$$$O?eJ?@~!"?bD>@~!"M?$($il?E@JI$H!"6J@~$H$N4V$K:nil$kNN0h$rEIjDV7$^$9!#

```
filledcurves closed    ... CzEYJD6J@~$G0O$^$l$kNN0h
filledcurves x1        ... x1 <4
filledcurves x2        ... x2 <4 (y1, y2 <4$bF1MM)
filledcurves y=42      ... D>@~ y=42, $9$J$o$A x <4$HJ?9T
filledcurves xy=10,20 ... x1,y1 <4$G$NE@ 10,20 (@p7?$N$h$&$J7A>u)
filledcurves above r=1.5  6K:BI8$G$NF07B<4$N 1.5 $N30B&$NNN0h
```

3 <dN'L\$O3 Ns$NF~NO%G!<%?$rI,MW$H$7!"$=$liOx :BI8$H!"$=lKBP9k2 DNy :BI8$+$iJj!"$=$l$i $OF1$8x :BI8$N=89g$KBP9k2 DN6J@~$Ny :BI8$KBP1~7^$9!#$=7F$=$N2 DN6J@~$N4V$NNNOh$,EI$j$D V5l^$9!#F~NO%G!<%?$,3 Ns0J>e$N>19g$KO3l,%G%U%)%k%H$G$9!#

```
3 Ns:  x  y1  y2
```

F~NO5l$?2 DN6J@~$N4V$NNNOhNEIjDV7NNc:

```
6J@~4V$NEI$j$D$V$7%G%b!#
plot 'data' using 1:2:3 with filledcurves
```

above $H **below** %*%W%7%g%s$O

```
... filledcurves above {x1|x2|y|r}=<val>
```

$*$h$S

```
... using 1:2:3 with filledcurves below
```

$N7A$N%3%^%s%I$KE,MQ2DG=$G$9!#$IAi$N>19g$G$b!"$3li$N%*%W%7%g%s$OEIjDV7NNOh$r!"6-3&@~!"$^$? $O6-3&6J@~$NJRB&$K@)8B$7$^$9!#

Cm0U: 3NIA2h%b!<%I$OA4$F$N=PNO7A<0$G%5%]!<%H5lkH$O8B$j$^$;$s!#

```
3 Ns$N%G!<%?IA2h$G$O!"x=  $H y=  $N%-!<%o!<%I$OL5;k$7$^$9!#
```

%G!<%?%U%!%$%k$+iIA+l?6J@~NEIjDV7r3HBg9k$H!"2?$bJ/JC$?$j@5$7$/JNNOhKJk3H, $"$j$^$9$,!"$=lO gnuplot $,!"NNOh$GOJ$/E@$d@~$r%/%j%C%T%s%0$7$F$$k$+$i$G$9!#

<a>, <x>, <y> $,IA2hNNOh$N30K"$k>19g!"$=li$O%0%i%U$N6-3&$X0\F0$5l^$9!#$hCF!"%*%W%7%g%s xy=<x>,<y> $r;XDj$7$?>19g$N<B:]NEIjDV$7NNOh$O!"xrange $d yrange $K0MB8$7$^$9!#

Financebars

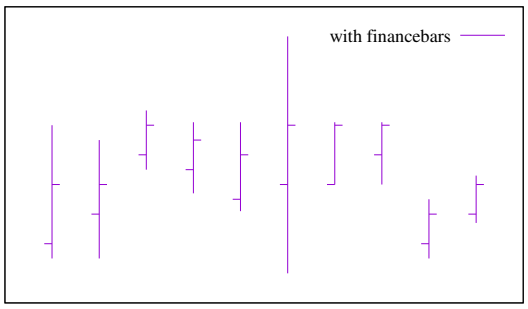
financebars %9%?%$%k$O6bM;%G!<%?$N2<!85$N%G!<%?IA2hGN$_MxMQ2DG=$G$9!#$3lO!"x :BI81 $D(DI>cF|IU) $H!"4 DNy :BI8(6b3[) rI,MWH7^$9!#

```
5 Ns:   date  open  low  high  close
```

F~NONs$rDI2C(6 NsL\) 9k$H!"$=li$O3F9TKh$N variable color >pJs(0J2<;2>H: **linecolor (p. 37)**, **rgbcolor variable (p. 38)**) H7$F;H$ol^$9!#

5-9f$O!"?eJ?J}8~$KO=$Nx :BI8$KCV$+$l!"?bD>J}8~KO :G9bCM(high) $H:G0BCM(low) $rC<$H9k@~J,$,;H$ol^$9!#$=7F!"$=$N@~J,$K?eJ?:8B&$N9o$_$,3+;OCM(open) $N=j$K!"?eJ?1&B&$N9o$_$,=*$jCM(close) $N=j$KD-$^$9!#$=$N9o$_$ND9$5$O **set bars** $GJQ9$G$-$^$9!#5-9f$O :G9bCM$H:G0BCM$,F~lBXoCFbJQoj^$;$s!#0J2<;2>H: **set bars (p. 109)**, **candlesticks (p. 49)**!#0J2<$b;2>H$7F/$@$5$!#

```
6bM;%G!<%?%G%b!#
```

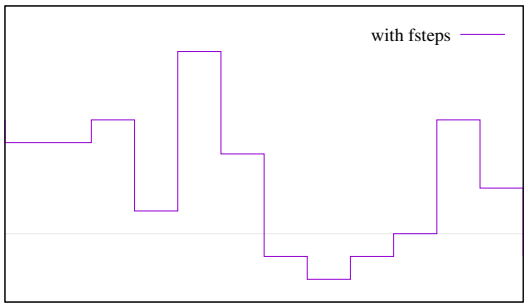


Fsteps

fsteps %9%?%$%k$O2<!85IA2hGN$_MxMQ2DG=$G$9!#3$1$O 2 K\$N@~J,GNYj9g$&E@$rDJ$.$^$9: 1 K\L\$O(x1,y1) $+$i(x1,y2) $^$G!"2 K\L\$O(x1,y2) $+$i(x2,y2) $^$G!# F~NCNs$N>r7o$O!"**lines** $d**points** KBP9kbNHF1$8$G $9!#**fsteps** $H**steps** $NOc$$$O!"**fsteps** $O!"@^$l@~$r@h$K y J}8~$K=q$$$F$+$i<!$K x J}8~$K=q$/$N$KBP$7!"**steps** $O@h$K x J}8~$K=q$$$F$+$i<!$K y J}8~$K=q$-$^$9!#

0J2<$b;2>H

steps %G%b!#

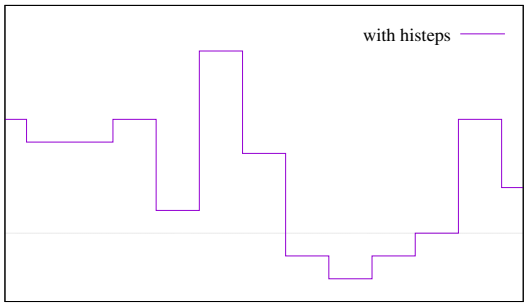


Fillsteps

fillsteps %9%?%$%k$O!"**steps** H[$\F1$8G9$,!"6J@~$H y=0 HN4V$NNN0h$r8=:_$Nfillstyle GEIjDY7^$9!#0J2<;2>H: **steps (p. 61)**!#

Histeps

histeps %9%?%$%k$O 2 <!85IA2hGN$_MxMQ2DG=$G$9!# $3$1$O%R%9%H%0%i%`$NIA2h$GNMxMQ$r0U?^7F$$$^$9!# y NCMO!"x NCMrCf?4KCV/$H9M$(!"x1 GNE@$O ((x0+x1)/2,y1) $+$i((x1+x2)/2,y1) $^$G$N?eJ?@~$H$7 $FI=8=$5l^$9!#C<$NE@GO!"$=$N@~O=$N x :BI8$,Cf ?4KJkh$&$K1dD9$5$l$^$9!#NY$j9g$&E@F1;N$N?eJ?@~ $NC<$O!"$=$NN><T$NJ?6QCM$NH3mG$N1tD>@~!"$9Jo $A((x1+x2)/2,y1) $+$i((x1+x2)/2,y2) $N@~J,$G7kPl $^$9!#F~NCNs$N>r7o$O!"**lines** $d**points** KBP9kbNH F1$8$G$9!#



autoscale $,M-8z$G$"$k>19g!"x $NHC0O$O!"$=$N1dD9$5$l$??eJ?@~$NHC0OGOJ/!"%G!<%?E@$NHC0O$,A*Br$5 l^$9!#$hCF!"C<$NE@$K4X7FO=$N?eJ?@~$OH>J,7+IA$+lJ$$$3HKJj$^$9!#0J2<$b;2>H

steps %G%b!#

Histograms

%9%?%$%k **histograms** $O2<!85IA2h$GN_M-8z$G$9!#$3$1$O!"%G!<%?$N3FNsNJBS$+$iJ?9T$JK@%0%i%U$r:n j^$9!#**plot** %3%^%s%I$N3FMWAG$O!"$=lK4X9kL\@9jNCM$dK^Nc(key) $N%?%$%H%k$,IUB0$9k+bCNl$^$; s,!"C10l$NF~NC%G!<%?$r;XDj9kI,MW$,$"j^$9(Nc$($PF~NO%U%!%$%k$N1$D$NNs)!#8=:_$O!"4<dN`$N%R%9 %H%0%i%`7A<0$N%9%?%$%k$r%5%]!<%H$7$F$$$^$9!#

```
set style histogram clustered {gap <gapsize>}
set style histogram errorbars {gap <gapsize>} {<linewidth>}
set style histogram rowstacked
set style histogram columnstacked
set style histogram {title font "name,size" tc <colorspec>}
```

%G%U%)%k%H$N%9%?%$%k$O**set style histogram clustered gap 2** $KBP1~$7$F$$$^$9!#$3$N%9%?%$%kGO!"JB Ns$K;XDj$5l?%G!<%?NCMN=89g$O!"A*Br$5l?%G!<%?NsN$=$N$=$l$>$l$N=xNs(9THV9f) $KBP1~$9$k x :BI8 $N>l=j$K!"3F!9H"$N%0%k!<%W$H7F8GailFCV$+$l$^$9!#hC$F!"<n> 8D$N%G!<%?Ns$rJBNs$K;XDj7?>l 9g!":G=i$N8G$^jO x=1 $rCf?4$H9k<n> 8D$NH"$N8G$^$j$+$iJj!"$=$N3F!9$N9b$5$O!"$=$N<n> %G!<%? Ns3F!9$N:G=i(1 9TL\) NCM,<hil$^$9!#$=$N8e$K>/$76uGr(gap) $,6u$1il!"<!$K3F%G!<%?Ns$N<!(2 9TL\) NCMKBP1~9kH"$N8G$^j,x=2 $rCf?4$H7FCV$+$l$^$9!#0J2<F1MM$G$9!#%G%U%)%k%H$N6uGr(gap) I}$N2 $O!"H"$N8G$^$jF1;N$N4V$N6uGr$,!"H"2 DNI}KEy7$$3Hr0UL#7^$9!#F1$8NsKBP9$kH"$OA4$FF1$8?'$^ $?$OF1$8%Q%?!<%s$GM?$($il^$9(0J2<;2>H: **set style fill (p. 163)**)!#

H"$N8G$^j=l>lO! "%G!<%?%U%!%$%k$N1 DN9T$+$iF@il$^$9!#$=$Nh&$JF~NO%U%!%$%k$N3F9T$N:G=i$N 9'L\$,8+=P$7(%i%Y%k) Gk3H$ON I$/$"$k3H$G$9!#$=$NNsK"$k8+=P$7(%i%Y%k) $O! "**using** $K**xticlabels** %*%W%7%g%srDlk3H$G! "$=lKBP1~9kH"$N8G$^jN?2<$N x<4$K1hC?H3mKCV$/$3H,G-$^$9!#

errorbars %9%?%$%k $O! "3F%(%s%H%j$KBP7FDI2C$NF~NONs$rI,MWH9$k0J30$O**clustered** %9%?%$%k$KHF$b NI$/;w$F$$^$9!#:G=i$NNs$O! "**clustered** %9%?%$%k$N>19g$HA4$/F1MM$KH"$N9b$5(y $NCM) H7$FJ];}$5l^$9!#

```
2 Ns:       y yerr          # @~$O y-yerr $+$i y+err $X?-$S$k
3 Ns:       y ymin ymax     # @~$O ymin $+$i ymax $X?-$S$k
```

8m:9@~$N8+$?L\$O! "8=:_$N**set bars** NCMH<linewidth> %*%W%7%g%s;XDj$G@)8f$G$-$^$9!#

@Q$_>e$27?$N%R%9%H%0%i%'$b2 DN7A<0$,%5%]!<%H$5lF$$$^$9!#$=li$O%3%^%s%I**set style histogram {rowstacked|columnstacked}** $GA*Br$G$-$^$9!#$3li$N%9%?%$%kK*$$F! "A*Br5l$?Ns$N%G!<%?NCMO @Q$_>e$2il$?H"$H$7F=8$ail$^$9!#@5NCMO! "y=0 $+$i>e$NJ}$X@Q$_>e$2il! "TiNCMO2<$X8~$+CF@Q $_>e$2il$^$9!#@5NCMHIiNCM,:.8CF>19g$O! ">e8~$-$H2<8~$-$NN>J}$N@Q$_>e$2$,@8@.$5l^$9!#%G %U%)%k%H$N@Q$_>e$2%b!<%I$O**rowstacked** $G$9!#

%9%?%$%k**rowstacked** $O! "$^$::G=i$KA*Br5l$?Ns$N3F9TNCMrx<4N=l>lNOLCV$KG[CV$7$^$9:1 9TL\ NCMOx=1 $NH"! "2 9TL\$N$Ox=2! "0J2<F1MM$HJj$^$9!#2 HVL\0J9_$KA*Br$5l?Ns$KBP1~$9$kH"$O! "$=$l iN>e$K@Q$_=EMilF9T$-$^$9!#$=7F7k2LH7$F! "x=1 KG$-$kH"$N@Q$_=EMO! "3FNs$N:G=i$NCM(1 9T L\$NCM) $+$iJj! "x=2 $NH"$N@Q$_=E$M$O3FNs$N2 9TL\$NCM! "JINh$&$KJj$^$9!#F1$8Ns$KBP9kH"$OA4 $FF1$8?'$^$?$OF1$8%Q%?!<%s$GM?$(il$^$9(0J2<;2>H: **set style fill (p. 163)**)!#

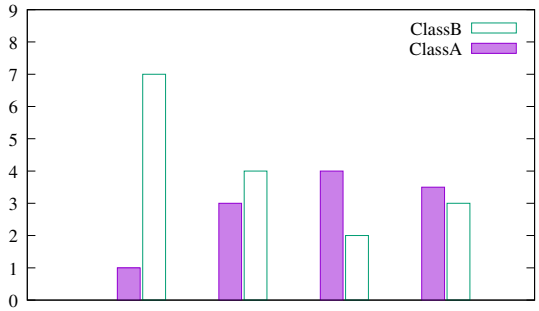
%9%?%$%k**columnstacked** $bF1MM$G9,!"3AiO3FH"$N@Q$_>e2O(3F9T$N%G!<%?$N?$+$iGOJ/)3FNs$N%G!< %?$+iJj^$9!#:G=i$K;XDj5l$?Ns$N3F9T$N%G!<%?$,x=1 $NH"$N@Q$_>e$2$r@8@.$7!"2 HVL\$K;XDj7?Ns$N 3F9T$N%G!<%?$,x=2 $NH"$N@Q$_>e$2!"JINh$&$KJj$^$9!#3N%9%?%$%k$G$O!"3FH"$N?'$O!"3F%G!<%?9'L\ $N(NsHV9f$GOJ$/)9THV9f$+$i7hDj$5l^$9!#

H"$NI}$O%3%^%s%I**set boxwidth** $GJQ99$G$-$^$9!#H"$NEIjD$V$7%9%?%$%k$O%3%^%s%I**set style fill** $G@_Dj G-$^$9!#

histograms $Ox<4$O>o$Kx1<4$r;H$$^9,!"y<4$K4X$7FOy1<4$+y2<4$+$rA*Br$G$-$^$9!#plot L?Na$,!" histograms $HB>$N%9%?%$%k$NIA2h$NN>J}$r4^$'>19g!"histogram GJ$$J}$O!"x1<4$r;H$&$+x2<4$r;H$&$+$r A*BrG-$^$9!#

Nc

F~NO%U%!%$%k$O!"2, 4, 6, ... NNsK%G!<%?CM$r;}$A!"3, 5, 7, ... NNsK8m:9I>2A$r;}$DH7$^$9!#0J2<NNcO!"2 NsL\!"4 NsL\$NCM$rH"$N8G$^$j7?(clustered; %G%U%)%k%H %9%?%$%k) $N%R%9%H%0%i%'$H$7FIA2h$7$^$9!#$3$3GO!" plot %3%^%s%I$G7+$jUV$7(iteration) $r;HMQ$7$F$$$^9N $G! "G$0U$N8D?t$N%G!<%?Ns$r0l$D$N%3%^%s%I$G=hM}G-$^$9!#0J2<;2>H: **plot for (p. 98)**)!#



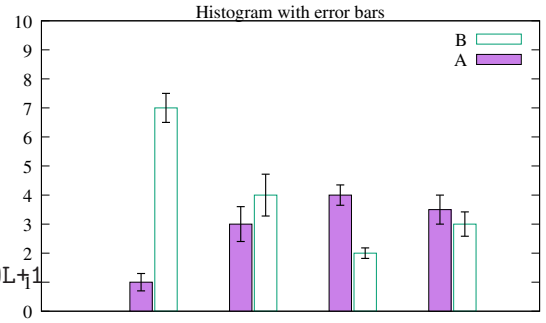

```
set boxwidth 0.9 relative
set style data histograms
set style histogram cluster
set style fill solid 1.0 border lt -1
plot for [COL=2:4:2] 'file.dat' using COL
```

3l$O! "x<4>e$N3F@0?tCM$rCf?4$H9k$=$l$>$l2 DNH"(1tD>$JK@) Kh$N8G$^$jKh$kIA2h$r@8@.7^$9!#F~ NO%U%!%$%k$N:G=i$NNs$K%i%Y%k,4^$^lF$$kJi$=$l$r! "0J2<$N>/$7JQ99$7$?%3%^%s%I$G x<4$K1h$C$FG[CV G-$^$9!#

```
plot for [COL=2:4:2] 'file.dat' using COL:xticlabels(1)
```

%U%!%$%k$,!"3F%G!<%?$NB,DjCM$HHC0C$N>pJs$NN>J}$r4^$s $G$$%k>l9g!"IA2h$K8m:9@~$rD12C$9%k$3H,G-$^$9!#0J 2<$N%3%^%s%I$C8m:9@~$r(y-<error>) $+$i(y+<error>) $K0z$-!"$=$NF,$KH"$HF1$8I}$N?eJ?@~rD1^$9!#8m:9 @~$H8m:9@~$NC<$N@~$O!"9u$G@~I}2 $GIA2h$5l^$9!#

```
set bars fullwidth
set style fill solid 1 border lt -1
set style histogram errorbars gap 2 lw 2
plot for [COL=2:4:2] 'file.dat' using COL:COL+1
```



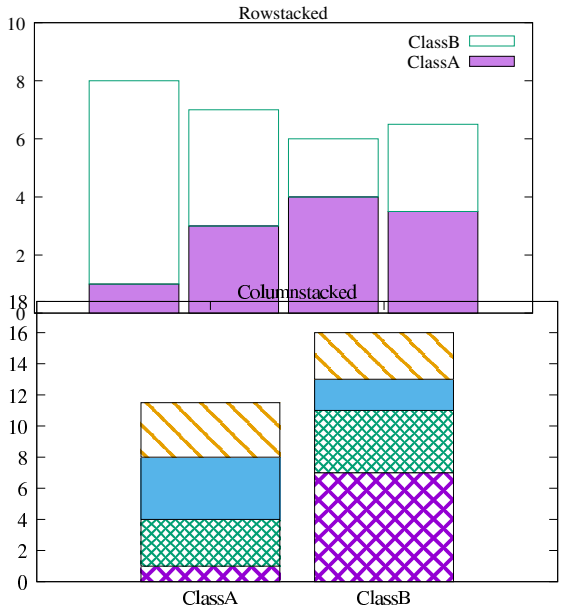
0J2<$O!"F1$8%G!<%?$r9TKh$N@Q$_>e$27?(rowstacked) $N%R%9%H%0%i%'$GIA2h9kJ}K!$r<(7$F$$$^$9!#$3l^ GH$C0c$$!"0J2<NNcG$O7+$jJV7r;H$&$NGJ$/!"L@<(E*$KJL!9NNsr;XDj7^$9!#

```
set style histogram rowstacked
plot 'file.dat' using 2, '' using 4:xtic(1)
```

3l$O!"0l$D0lDN1tD>$JK@$,!"%G!<%?$N0l$DNNsKBP 1~9kIA2h$r@8@.$7$^$9!#BFK@$O!"2 DNItJ,$N@Q$_>e$2 $N7A$G$"j!"$=l>lNItJ,$N9b$5$,!"%G!<%?%U%!%$%k $N2 NsL\$H4 NsL\$NCM$KBP1~$7$^$9!#

:G8e$K0J2<$N%3%^%s%I

```
set style histogram columnstacked
plot 'file.dat' using 2, '' using 4
```



$O!"0l$D0lD,$=$l$>$l%G!<%?Ns$KBP1~$9$k!"2 DN1t D>$J@Q$_=EMNK@$r@8@.7^$9!#x=1 K"$kK@$O!"%G!< %?%U%!%$%k$N2 NsL\$N3F9TNCMKBP1~9kH"$+$iJj$^ $9!#x=2 K"$kK@$O!"%G!<%?%U%!%$%k$N4 NsL\$N3F9T$N CM$KBP1~9kH"$+$iJj$^$9!#

3l$O!"gnuplot $NDI>o$NF~NO$N=D!"2#$N2r<a$rF~$l49$(k3HKJj$^$9NG!"K^Nc$N%?%$%H%k$dx <4$NL\@9$j $N8+=P$7$N;XDj$bJQ99$9$kI,MW$,$"j^$9!#0J2<$N%3%a %s%HItJ,$r;2>H$7F/$@$5$$!#

```
set style histogram columnstacked
plot '' u 5:key(1)            # 1 NsL\$rK^Nc%?%$%H%k$K;HMQ
plot '' u 5 title columnhead  #
```

3N2 DNNc$O!"A4$/F1$8%G!<%?$rM?$($F$$$kNG9,!"0[Jk=q<0G"k3HKCm0U7F$/$@$5$$!#

Newhistogram

=q<0:

```
newhistogram {"<title>" {font "name,size"} {tc <colorspec>}}
             {lt <linetype>} {fs <fillstyle>} {at <x-coord>}
```

0l2s$NIA2h$K2 $D0J>e$N%R%9%H%0%i%'NAHr:nk3HbG-$^$9!#3N>l9g%3%^%s%I **newhistogram** $r;H$& 3H$G!"$=li$r6/@)E*$KJ,N%7!"$^$?$=$l$>$l$N%i%Y%k$rJ,N%9%k3H$,$G$-$^$9!#Nc:

```
set style histogram  cluster
plot newhistogram "Set A", 'a' using 1, '' using 2, '' using 3, \
     newhistogram "Set B", 'b' using 1, '' using 2, '' using 3
```

%i%Y%k"Set A" $H"Set B" $O!"$=l>lN%R%9%H%0%i%'NAHN2<!"x <4$NA4$F$N%i%Y%k$N2<$N0LCV$K8=ol $^$9!#

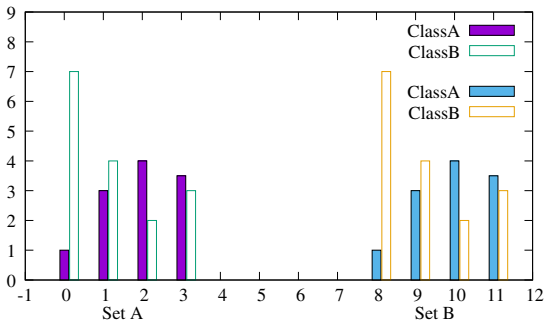
%3%^%s%I newhistogram $O!"%R%9%H%0%i%'$N?'IU1r6/@)E*$K;XDj$7$?'(linetype) $G;O$akNKb;H$($^$9!# %G%U%)%k%H$G$O!"?'$NHV9f$O%R%9%H%0%i%'$N6-3&r^$?$$G5($bO"B3E*$KA}2C$7B3$1$^$9!#<!NNcO!"J#?t $N%R%9%H%0%i%'$KF1$8?'IU$1$r;\$7$^$9!#

```
plot newhistogram "Set A" lt 4, 'a' using 1, '' using 2, '' using 3, \
     newhistogram "Set B" lt 4, 'b' using 1, '' using 2, '' using 3
```

F1MM$K!"<!$N%R%9%H%0%i%'$r;XDj$7$?fillstyle $G;O$a5;k3H,2DG=$G$9!#$=$Nfillstyle $rpattern $K%;%C%H$7$?>19g!"EI$jDY7K;HMQ5l$k%Q%?!<%sHV9f$O<+F0E*$KA}2C$5lF$$$-$^$9!#

%*%W%7%g%sat <x-coord> $O!"$=$N8e$N%R%9%H%0%i%'$Nx:BI8$NOICV$r<x-coord>$K@_Dj7^$9!#Nc:

```
set style histogram cluster
set style data histogram
set style fill solid 1.0 border -1
set xtic 1 offset character 0,0.3
plot newhistogram "Set A", \
     'file.dat' u 1 t 1, '' u 2 t 2, \
     newhistogram "Set B" at 8, \
     'file.dat' u 2 t 2, '' u 2 t 2
```



3N>19g!"2 $DL\$N%R%9%H%0%i%'$NOICV$Ox=8 $+$i;O$^$j$^$9!#

J#?tNNsKEO$k<+F0E*$J7+jJV7 (automated)

0lDN%G!<%?%U%!%$%k$N$?$/5sNNs+$i!"0l$D$N%R%9%H%0%i%'$r@8@.7?$>19g!"plot $N7+$jJV$7 (iteration) 5!G=$r;H$&$HJXMxG7g&!#0J2<;2:Hplot for (p. 98)!#Nc:($P!"3 NsL\$+$i8 NsL\$^GN%G!<%?$r@Q$_>e2?7A$N%R%9%H%0%i%'$r@8@.9kNc:

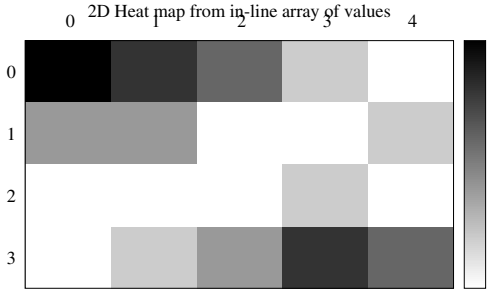
```
set style histogram columnstacked
plot for [i=3:8] "datafile" using i title columnhead
```

Image

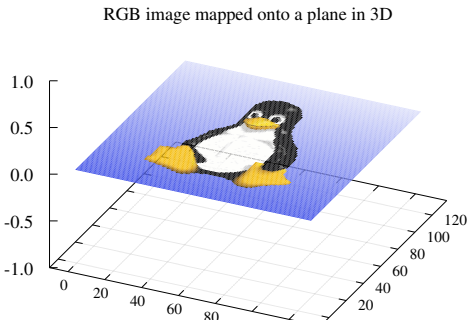
IA2h%9%?%$%kimage, rgbimage, rgbalpha $O!"$$$:lb0lMM$KI8K\E@$r<hC?3J;R>u%G!<%?CM$r!"2<!85!"$^$?$O3<!85Cf$N%"$kJ?LI>e$K<M1F$7$^$9!#F~NO%G!<%?$O!"4{$K$"$k%S%C^%C%W2hA|%U%!%$%k(PNG Nh$&$JI8="E*J%U%)!<%^%C%H$+$iJQ49$7$?%bNG$h$$) $+!"C1=c$J?tCMG[Ns$G$9!#

3N?^$O!"%9%+%i!<CM$NG[Ns$+$i29EYJ,I[$r@8@.$7$?Nc$G$9(LuCm ?^$,I=<(5l$F$$$k>19g)!#8=:_$N%Q%l%C%H$r!"3F%9%+%i!<CM$+$iBP1~9k%T%/%;%k$N?'$X$N3d$jEvFK;HMQ7^$9!#

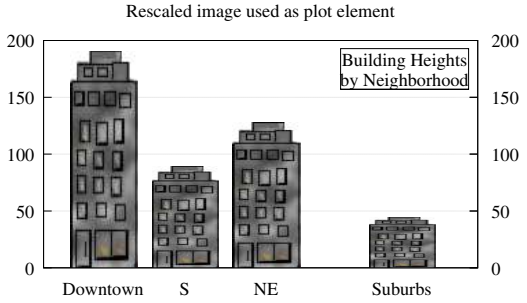
```
plot '-' matrix with image
5 4 3 1 0
2 2 0 0 1
0 0 0 1 0
0 1 2 4 3
e
e
```



F~NO2<!852hA|$N3F%T%/%;%k(%G!<%?E@)$O!"IA2h%0%i%UCfGOD9J}7A!"$^$?$OJ?9TO;LIBN$HJj$^$9!#2hA|$N3F%G!<%?E@$N:BI8$O!"U?9TO;LIBN$NCf?4$r7hDj$7$^$9!#9JoA!"M x N 8D$N%G!<%?=89g$OM x N %T%/%;%k$N2hA|$r@8@.7^$9!#$3$1$O!"M x N 8D$N%G!<%?=89g$, (M-1) x (N-1) MWAG$r:n@.$9$kpm3d $N9=B$$H$OO[$Jj^$9!#P%$%J$j2hA|%G!<%?$N3J;R$NAv::J8~$O!"DI2C%-!<%o!<%IG5iK@)8f2DG=$G$9!#0J2<;2:H: binary keywords flipx (p. 84),keywords center (p. 84), keywords rotate (p. 84)!#



3F%T%/%;%k$Nx $Hy NBg-5r<($9$3HG!"2hA|%G!<%?$r2<!85IA2h:BI87CFb$NFCDj$ND9J}7A$K<}$^$kh&$K?-=L$9k3H,G-$^$9!#0J2<;2>H:**binary keywords dx (p. 84), dy (p. 84)**!#1&$N2hA|$r@8@.9kNK$O!"F1$8F~NO2hA|$r!"$=l>$l dx, dy, origin $r;XDj$7$FJ#?t2sG[CV$7$^$7$?!#F~NO PNG 2hA|$G$"$k%s%k$N3($O50x128%T%/%;%k$G$9!#9b$$%S%k$O!"**dx=0.5 dy=1.5** $G3d$jEvFFIA2h$7!"Dc$$%S%k$O!"**dx=0.5 dy=0.35** H7$F$$$^$9(LuCm ?^$,I=<(5l$F$$k>19g)!#



%9%?%$%k **image** $O!"%0%l%$%9%1!<%k(3%?'3,D4)!"$^$?$O%+%i!<%Q%l%C%HCM$r4^sG$$$k%T%/%;%k$NF~NO$r=hM}7^$9!#$hCF2<!85IA2h(**plot** %3%^%s%I) GO3Ns$N%G!<%?(x,y,value) $r!"3<!85IA2h(**splot** %3%^%s%I) GO4Ns$N%G!<%?(x,y,z,value) $,I,MW$KJj$^$9!#

%9%?%$%k **rgbimage** $O!"@V!"NP!"@D$N3 DN?'@.J,(RGB) $G5-=R$5l?%T%/%;%k$NF~NO$r=hM}7^$9!#$hCF **plot** GO5<!85%G!<%?(x,y,r,g,b) $,!"**splot** GO6<!85%G!<%?(x,y,z,r,g,b) $,I,MW$KJj$^$9!#@V!"NP!"@D$N3F@.J,$O[0:255] $NHC0CFb$K$"$k%H2>Dj5l$^$9!#

%9%?%$%k **rgbalpha** $O!"@V!"NP!"@D$NRGB @.J,$K2C$($F!"%"%k%U%!CM(F)2a%Q%i%a!<%?) $N>pJs$b4^s@%T%/%;%k$NF~NO$r=hM}7^$9!#$hCF!"**plot** GO6<!85%G!<%?(x,y,r,g,b,a) $,!"**splot** GO7<!85%G!<%?(x,y,z,r,g,b,a) $,I,MW$KJj$^$9!#@V!"NP!"@D!"$*$h$S%"%k%U%!$N3F@.J,$O[0:255] $NHC0CFb$K$"$k$H2>Dj$5l^$9!#

F)L@2=(transparency)

IA2h%9%?%$%k **rgbalpha** $O!"F~NO%G!<%?$N3F%T%/%;%k$,[0:255] $NHC0CFb$N%"%k%U%!CM$r;}$C$F$$kI,MW$,$"j^$9!#alpha = 0 $N%T%/%;%k$O4 0A4$JF)L@$G!"$=$N2<(1|) $NIA2hMWAG$rA4$/JQ$($^$;$s!#alpha = 255 $N%T%/%;%k$O4 0A4$JIIF)L@$G$9!#$9YF$N=PNO7A<0$O!"3l$i2 DNN>6KC<JCMr%5%]!<%H7^$9!#0 < alpha < 255 $N%T%/%;%k$OH>F)L@$G!"$3lO2,3 $N=PNO7A<0$7$+4 0A4$K$OBP1~$7F*i:!"B>$N=PNO7A<0$GO3lr0$+255 H7$F07$&3HKh$k6a;w7+9T$$^;$s!#

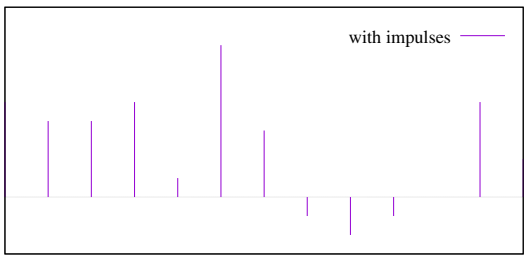
Image pixels

=PNO7A<0KhCF$O!"2<!85$ND9J}7ANN0hFbGN2hA|%G!<%?IA2h$N!"%G%P%$%9%d%i%$%V%i%j$K0MB8$7$?:GE,2=%k!<%A%s$r;HMQ$7$F$$$^$9!#$3lO!"Nc$($P%/%j%C%T%s0$d?-=L$,$&$^$/$J$+$C$?j!"1o$,7g1kJI!"K>$^$7$/$J$=PNO$r@8@.9k3H$,$"j^$9!#-!<%o!<%I**pixels** $O!"$=Nh$&$J%k!<%A%sNBeojK!"2hA|$r1%T%/%;%k$:DIA2h9kh&$J0lHLE*$J3!<%I$r;HMQ$9kh$&gnuplot $K;X<($7$^$9!#3NIA2h%b!<%IGO!"IA2hOCY/!"HFbBg-$J=PNO%U!%$%k$r@8@.$7$^$9$,!"$I$N=PNO7A<0$G$b6&DLE*$J8+$?L\$r:n@.7F$/$lkG7g$&(%*%W%7%g%s **pixels** $O!"0JA0$Ngnuplot GO **failsafe** $H8F$PlF$$$^7?)!#Nc:

```
plot 'data' with image pixels
```

Impulses

impulses %9%?%$%k$O!"2<!85IA2hGOy=0 $+$i3FE@$Ny NCMX$N!"3<!85IA2hGOz=0 $+$i3FE@$Nz NCMX$N!"?bD>$J@~J,$rI=<(7^$9!#y $dz NCMOIiNCMGbh$$$3HKCm0U7F$/$@$5$$!#%G!<%?$NDI2CNs$r3F?bD>@~J,$N?'$N@)8f$KMxMQ$G$-$^$9!#$3$N%9%?%$%k$r3<!85IA2h$G;HMQ9k>19g!"B@$$@~(linewidth > 1) $rMxMQ$9kHhj8z2LE*G7g&!#$=$l$O3<!85$NK@%0%i%U;w$?$bNKJj$^$9!#

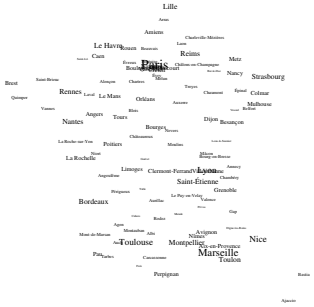



```
1 Ns:  y
2 Ns:  x  y     # [x,0] $+$i [x,y] $X$N@~ (2D)
3 Ns:  x  y  z  # [x,y,0] $+$i [x,y,z] $X$N@~ (3D)
```

Labels

%9%?%$%k **labels** $O!"%G!<%?%U%!%$%k$+$i:BI8$HJ8;zNs rFI_9~$_!"$=$NJ8;zNsr=$N2<!85!"$^$?$O3<!85 :BI8KCV-$^$9!#$3lO4pK\E*$K3Ns!"$^$?$O4Ns$NF~ NO$rI,MWH7$^$9!#5i$KM>J,$JF~NONs$O!"J8;zNs$N2s E>3Q(%-!<%o!<%I **rotate variable**) $dJ8;z?'(0J2<;2>H: **textcolor variable (p. 38)**) Nh$&$J!"E@Kh$KJQF0$9 $kB0@-CM$,;XDj5l$?$H$_$J5l$^$9!#

```
3 Ns:  x  y  string    # 2 <!85HG
4 Ns:  x  y  z  string # 3 <!85HG
```



%U%)%s%H!"?'!"2sE>3Qd=$NB>$NIA2h%F%-%9%H$NB0@-$CDI2C%*%W%7%g%sH7$F;XDj2DG=$G$9(0J2<;2>H: **set label (p. 133)**)!#<!NNcO!"F~NO%U%!%$%k$N1NsL\$+$i<h$C$?;T$NL>A0$+$i:nil$kJ8;zNs$r!"4,5NsL\$+ $i<h$C$?CO?^:BI8$KIA2h7^$9!#%U%)%s%H%5%$%:$O!"3NsL\$NCM$+$i7W;;7F$$$F!"3N>19gO=lO?M8}$r 0UL#$7$F$$$^$9!#

```
CityName(String,Size) = sprintf("{/=%d %s}", Scale(Size), String)
plot 'cities.dat' using 5:4:(CityName(stringcolumn(1),$3)) with labels
```

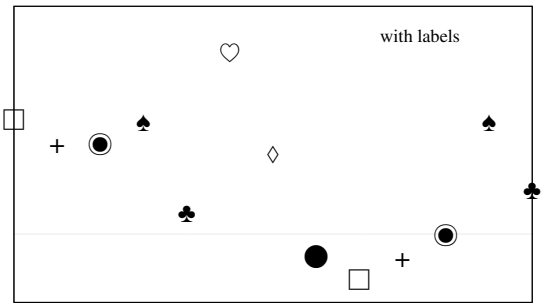
%U%)%s%H%5%$%:$r!"8D!9$N;T$NL>A0KBP7F0[Jk%5%$%:$K9go;J/$F$$$$JiP!"%3%^%s%IObCH4JC1 $G$9:

```
plot 'cities.dat' using 5:4:1 with labels font "Times,8"
```

labels $K **hypertext** $,$D$$F$$k>19g!"$=$NJ8;zNs$O%^%&%9$,$=$l$KBP1~$9$kE@$N>eKMh?H-K@$18=$o l^$9!#0J2<;2>H: **hypertext (p. 135)**!#3N>19g$O%$%Q!<%F%-%9%HNCV->l=jH7$F5!G=$9$kE@$r:nk?$a K=$N%i%Y%k$N**point** B0@-$rM-8z$K9kI,MW$,$"j^$9:

```
plot 'cities.dat' using 5:4:1 with labels hypertext point pt 7
```

%9%?%$%k **points** G"i+8aDj5A5l$F$$$kE@$N5-9f $,E,@Z$G$J$$!"$"$k$$$O==J,GJ$$>19g!"$=$NBeoj$H 7F%9%?%$%k **labels** $r;H$&$3H$bG-$^$9!#Nc$($P!"0J 2<$OC10lJ8;z$H7FA*Br5lkAHrDj5A$7!"3NsL\$N%G!< %?CM$KBP1~$9k=$N0l$D$r%0%i%U$N3FE@$K3d$jEvFkNc $G$9(LuCm 0J2<$N%5%s%W%k$N<UTF-8 J8;zNs> $NItJ, KO!"85!9!"4]$KCfE@5-9f$d""!"\!"%H%i%s%W5-9fJI$N UTF-8 J8;zNs$,JBsG$$$^$9,!"$3$NF|K\8lLu$H$ON>N) 7J$$$?a<h$j=|$$F$$$^$9):



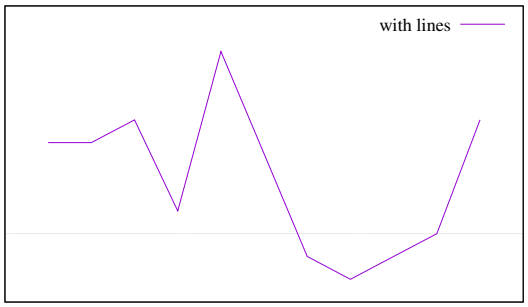

```
set encoding utf8
symbol(z) = "<UTF-8 J8;zNs>"[int(z):int(z)]
splot 'file' using 1:2:(symbol($3)) with labels
```

0J2<$O!"4NsL\$NCM$r2DJQCM$N2sE>3Q$H$7!"5NsL\$NCM$rJ8;z?'("tc") H9$k%i%Y%k$N;HMQNc$G$9!#2DJQCM$N ?';XDj$O!">c$K**using**;XDj$N:G8eNNs+$i<h$k3H$KCm0U$7F$/$@$5$$!#

```
plot $Data using 1:2:3:4:5 with labels tc variable rotate variable
```

Lines

lines %9%?%$%k$ONY@\$9$kE@$r??D>$J@~J,$G7kS^$9!#$3lO!"2 <!85IA2hGb!"3 <!85IA2hGb;HMQG-!"4pK\E*KO!"1 Ns$+2 Ns$+3 Ns$+$NF~NO%G!<%?rI,MWH7^$9!#M>J,$JF~NONs$O!"@~$N?'$NJQ99$JIN>pJs$,Ds6!$5l?bNH7$F;HMQ$5l^$9(0J2<;2>H: **rgbcolor variable (p. 38)**)!#



2 <!85$N>l9g

```
1 Ns:  y        # 9THV9f$K$h$k0EL[$N x
2 Ns:  x  y
```

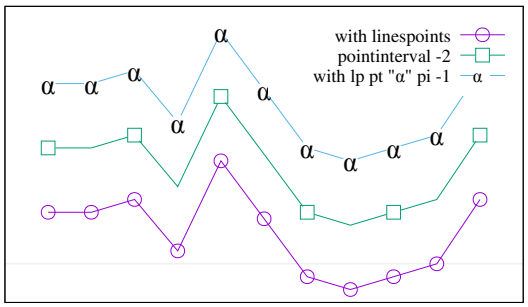
3 <!85$N>l9g

```
1 Ns:  z        # x $O0EL[$N9THV9f!"y $O index $+$i
3 Ns:  x  y  z
```

0J2<$b;2>H: **linetype (p. 135)**, **linewidth (p. 164)**, **linestyle (p. 164)**!#

Linespoints

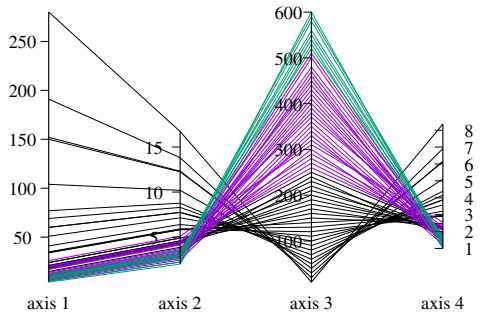
linespoints %9%?%$%k(>JN,7A **lp**) $O!"NY@\$9$kE@$r??$CD>$0$J@~J,$G7k$S!"$=$N8e$G:G=iKLaC$F3FE@$K>.5J5-9frIA-$^$9!#E@5-9f$O!"**set pointsize** $G7h$^$k%G%U%)%k%H$NBg$-$5GIA-$^$9$,!"plot %3%^%s%I>e$GE@$N%5%$%:$r;XDj$7$?$j!"$"$k$$$OF~NO%G!<%?$NDI2ONs$G8DJL$NE@%5%$%:$r;XDj$9k3HbG-$^$9!#DI2C$NF~NONs$O!"8DJL$N@~$N?'JI$N>pJs$rDs6!9kNK$b;H$ol^$9!#0J2<;2>H: **lines (p. 59)**, **points (p. 60)**!#



@~<o(linetype) $NB0@-$G$"$k **pointinterval** (>JN,7A **pi**) $G!"%0%i%U$N9YFNE@$rM?$($?5-9f$K9k$+$I$&$+$r@)8f$G$-$^$9!#Nc$($P!"**with lp pi 3** $O!"$9YF$N%G!<%?E@4V$K@~J,$r0z$-$^$9$,!"E@$N5-9f$O3 D*$-$K7+=q$-$^$;$s!#**pointinterval** rIiNCMK7$?>l9g$O!"5-9f$N2<$N@~J,$NItJ,$r>C7^$9!#>C$9ItJ,$N%5%$%:$O **set pointintervalbox** $G@)8f$G$-$^$9!#

Parallelaxes

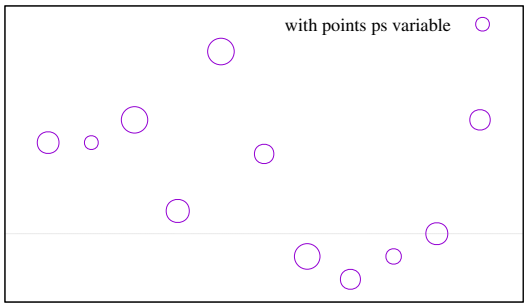
J?9T:BI8IA2h(parallel axis plot, parallel coordinates plot Hb8FPl$k) $O!"B?<!85%G!<%?$NAj4X$r;k3P2=$7$^$9!#3FF~NONs$O!"JL!9$N%9%1!<%k$N=D<4$K3djEvFil$^$9!#F~NO1 9T$+$iFI$_9~$s$@$=l>lNNsNCMO!"1 $DL\$N<4$+$i2 $DL\$N<4$X!"2 $DL\$N<4$+$i3 $DL\$N<4XH@~J,$G7k$Pl^$9!#$9Jo$AJ?9T:BI8IA2hCf$G$O!"F~NO$N3F9T$,$=l>$lFHN)$7$?@^$l@~KJj^$9!#$=li$r?t<oN`$KJ,N`$7$F?'$r3djEvFk3HOh/9Tol$^$9$,!"$=lO!"$=$NJ,N`$H<4$H$N4V$N4X78$r;k3PE*$KD4::9k3H$r2DG=$K7^$9!#%G%U%)%k%H$G$O!"gnuplot $O<+F0E*$K8D!9$N<4$NHC0O!"%9%1!<%k$rF~NO%G!<%?$+$i7hDj$7$^$9$,!"DL>o$N **set axis range** %3%^%s%IKhCF$=$l$r%+%9%?%^%$%:9k3H$b2DG=$G$9!#0J2<;2>H: **set paxis (p. 148)**!#



J?9T<4$N:GBg8D?t$O!"gnuplot $N%3%s%Q%$%k;~$K8GDj$5$l!"$=$N:GBgCM$O!"**show version long** $GI=<($5l^$9!#

Points

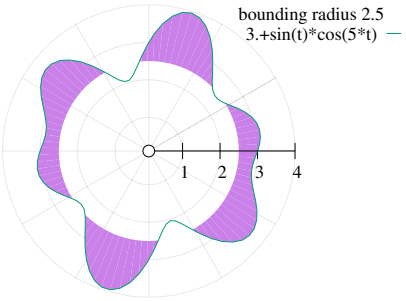
points %9%?%$%k$O3FE@$K>.$5$J5-9f$rI=<(7^$9!#$=$N 5-9f$N%G%U%)%k%HNBg-5rJQ99$9$kKO%3%^%s%I **set pointsize** $,;H$($^$9!#4pK\E*$K2<!85IA2h$G$O1Ns!" $^$?$O2Ns$NF~NO%G!<%?$,I,MW$G!"3<!85IA2hGO1Ns!" $^$?$O3Ns$N%G!<%?$,I,MW$G$9!#0J2<;2>H **style lines** (**p. 59**)!#M>J,$JF~NONs$O!"E@$N%5%$:$dE@?'$NJQ99JI $N>pJs$,Ds6!5l$?$bNH7F;HMQ5l$^$9!#



:G=i$N8 DNE@<o$O!"$9YF$N=PNO7A<0$G6&DLG9$,!" hjB?$/$NE@<o$r8DJL$K%5%]!<%H9k=PNO7A<0b"j^ $9!#8=:_$N=PNO7A<0$,$INh$&$JE@<o$r;}$C$F$$$k$+$r 8+kK$O!"%3%^%s%I **test** $r;HMQ$7F/$@$5$$!#$^$?!"0J2<NNcNh&K7$F!"G$0U$N0u;z2DG=J8;z$rE@<o$N Be$ojK;HMQ9k3HbG$-$^$9!#$h$jD9$$J8;zNs$O!"IA2h%9%?%$%k **points** GOJ/ / **labels** $r;H$($P=PNO G-$^$9!#

Polar

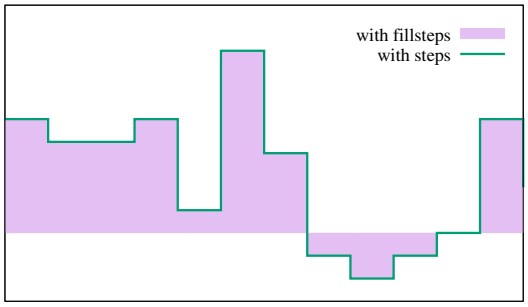
6K:BI8IA2h(polar) $O!"<B:]$K$OIA2h%9%?%$%k$N0l$D$G O"j^$;s,!"40A4$r4|9?aK3$N0lMw$K>e2F$* $-$^$9!#%*%W%7%g%s **set polar** $O!"F~NO$9$k2<!85:BI8 $r<x>,<y>$NBeoj$K<3Q>,<H>7B>$H2r<a9k$3 Hrgnuplot $K;X<($7$^$9!#9YFGOJ$$,!"B?/$N 2<!85IA2h%9%?%$%k,6K:BI8%b!<%I$G%b5!G=$7$^$9!#?^ $O!"IA2h%9%?%$%k **lines** $H **filledcurves** NAH_9go;$r <($7$F$$$^$9!#(LuCm ?^$,I=<(5l$F$$$k>19g)0J2<;2 >H**set polar** (**p. 157**), **set rrange** (**p. 159**), **set size square** (**p. 159**)!#



Steps

steps %9%?%$%k$O2<!85IA2hGN$_MxMQ2DG=$G$9!#3$l$O 2K\$N@~J,GNYj9g$&E@$rDJ$.$^$9:1K\L\$O(x1,y1) $+$i(x2,y1)$^$G!"2K\L\$O(x2,y1)$+$i(x2,y2)$^$G!# F~NONs$N>r7o$O!"**lines** $d **points** KBP9kbNHF1$8$G $9!#**fsteps** $H **steps** $NOc$$$O!"**fsteps** $O!"@^$l@~$r@h$K y J}8~$K=q$$$F$+$i<!$Kx J}8~$K=q$/$N$KBP$7!"**steps** $O @h$Kx J}8~$K=q$$$F$+$i<!$Ky J}8~$K=q$-$^$9!#6J@~$H %Y!<%9%i%$%s$G$"$k y=0 HN4V$NNN0h$rEIjDY9KO!" **fillsteps** $r;HMQ$7F/$@$5$$!#0J2<$b;2>H

```
steps %G%b!#
```



Rgbalpha

0J2<;2>H **image** (**p. 57**)!#

Rgbimage

0J2<;2>H **image** (**p. 57**)!#

Vectors

2 <!85$N **vectors** %9%?%$%k$O(x,y) $+$i(x+xdelta,y+ydelta) $^$G$N%Y%/%H%k$r=q$-$^$9!#3 <!85$N **vectors** %9%?%$%k$bF1MMG9$,!"%G!<%?$O4pK\E*$K6 NsI,MW$G$9!#3F%Y%/%H%k$N@hC<KO>.5JLp@h$b=q$+l^$9!#

```
4 Ns:  x  y  xdelta  ydelta
6 Ns:  x  y  z  xdelta  ydelta  zdelta
```

N>J}$N>l9g$G!"F~NONs$rDI2C(2D GO5 NsL\!"3D GO7 NsL\) 9k$H!"$=li$O3F%G!<%?2E@Kh$N variable color >pJs(0J2<;2>H **linecolor (p. 37)**,**rgbcolor variable (p. 38)**) H7$F;H$ol^$9!#

vectors %9%?%$%k$r;HCF$Nsplot $O **set mapping cartesian** N_$G%5%]!<%H$5lF$$$^$9!#

%-!<%o!<%I"with vectors" $O!"$=$N8e$m$K!"%$%s%i%$%s$N arrow %9%?%$%k;XDj$d!"$"$i$+$8$aDj5A$5lF$$$k arrow %9%?%$%k$N;2>H!"$"$k$$$ONs$+$i3F%Y%/%H%kKBP9kI,MWJ arrow %9%?%$%k$N%$%s%G%C%/%9$rFI$`$h$&$J;XDj$rH<$&3H$,$G$-$^$9!#Cm0U "arrowstyle variable" $r;HMQ$9$k>l9g!"BP1~$9$k%Y%/%H%k$,IA2h5l$k:]$KO=l,arrow $NB0@-CM$9YFrKdakNG=$Nplot %3%^%s%IFb$KB>$N@~B0@-$darrow %9%?%$%k;XDj$r3$N%-!<%o!<%I$H:.:_5;k3HOG-$^$;$s!#

```
plot ... with vectors filled heads
plot ... with vectors arrowstyle 3
plot ... using 1:2:3:4:5 with vectors arrowstyle variable
```

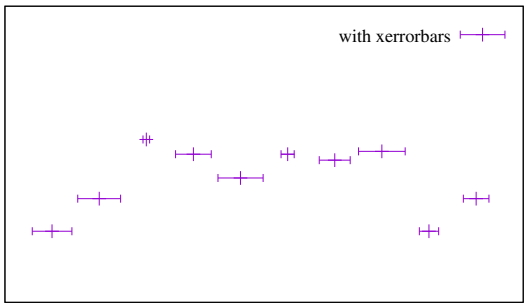
Nc:

```
plot 'file.dat' using 1:2:3:4 with vectors head filled lt 2
splot 'file.dat' using 1:2:3:(1):(1):(1) with vectors filled head lw 2
```

set clip one $H **set clip two** $O2 <!85$N%Y%/%H%k$NIA2h$K1F6A$rM?$(($^$9!#0J2<;2>H **set clip (p. 112)**, **arrowstyle (p. 161)**!#

Xerrorbars

xerrorbars %9%?%$%k$O2 <!85$N%G!<%?IA2h$N$_$GMxMQ2DG=$G$9!#**xerrorbars** $O!"?eJ?$N8m:9;X<(@~(error bar) $,I=<($5lk0J30$O**points** $HF1$8$G$9!#3FE@(x,y) K*$$$F(xlow,y) $+$i(xhigh,y) $^$G!"$^$?$O(x-xdelta,y) $+$i(x+xdelta,y) $^$G$N@~J,$,0z$+$l$^$9$,!"$3li$O$$$/DN%G!<%?Ns$,M?$(ilk+KhCFUQoj$^$9!#8m:9;X<(@~$NC<$K$O9o$_$N0u$,IUlil^$9(**set bars** $,;H$olF$$$J1l$P!#>\:Y$K4X7F$O!"0J2<;2>H **set bars (p. 109)**)!#3N%9%?%$%k$O4pK\E*$K!"3 Ns$+4 Ns$N%G!<%?2DG=$G$9!#

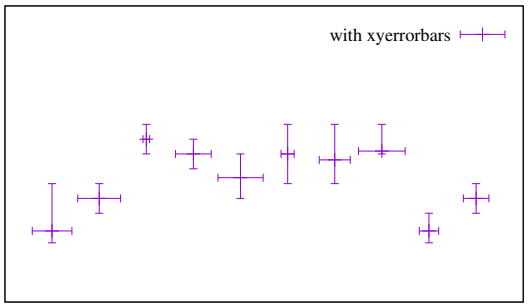



```
3 Ns:  x  y  xdelta
4 Ns:  x  y  xlow  xhigh
```

F~NONs$rDI2C(4,5 NsL\) 9k$H!"$=li$OE@$N variable color >pJsH7$F;H$ol^$9!#

Xyerrorbars

xyerrorbars %9%?%$%k$O 2 <!85$N%G!<%?IA2h$N$_$GMx MQ2DG=$G$9!#**xyerrorbars** $O!"?eJ?!"?bD>$N8m:9;X<(@~(error bar) $bI=<($5$1$k0J30$O **points** $HF1$8$G$9!#3FE@(x,y) K*$$$F(x,y-ydelta) $+$i(x,y+ydelta) $^$G$H(x-xdelta,y) $+$i(x+xdelta,y) $^$G!"$^$?$O(x,ylow) $+$i(x,yhigh) $^$G$H(xlow,y) $+$i(xhigh,y) $^$G$N@~J,$,0z$+$1$^$9$,!"$3$1$i$O$$/DN%G!<%?Ns$,M?$(i1k+KhCFUQoj$^$9!#8m:9;X<(@~$NC<$K$O9o$_$N0u$,IU1i1^$9(**set bars** $,;H$o1F$$J$1$1$P!#>\:Y$K4X7F$O!"0J2<;2>H: **set bars (p. 109)**)!#$3$1$O4 Ns $+!"6 Ns$N%G!<%?$,I,MW$G$9!#




```
4 Ns:  x  y  xdelta  ydelta
6 Ns:  x  y  xlow  xhigh  ylow  yhigh
```

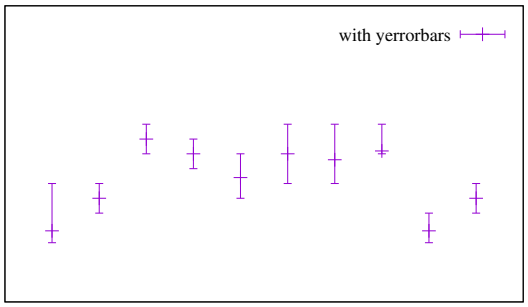
%G!<%?$,!"%5%]!<%H$5$1$F$$J$$:.9g7?$N7A<0$GM?$($i1?>19g!"**plot** %3%^%s%I$N **using** %U%#%k%?$r;HCFE,@Z$J7A$KD>5J$$H$$1$^;$s!#Nc$($P%G!<%?$,(x,y,xdelta,ylow,yhigh) $H$$&7A<0G"$k>19g!"0J2<$Nh&&K7$^$9:

```
plot 'data' using 1:2:($1-$3):($1+$3):4:5 with xyerrorbars
```

F~NONs$rDI2C(5,7 NsL\) 9k$H!"$=1i$O3F%G!<%?E@Kh$N variable color >pJsH7$F;H$o1^$9!#

Yerrorbars

yerrorbars ($^$?$O **errorbars**) %9%?%$%k$O2<!85$N%G!<%?IA2hN_$GMxMQ2DG=$G$9!#**yerrorbars** $O!"?bD>$N8m:9;X<(@~(error bar) $,I=<($5$1$k0J30$O **points** $K;w$F$$$^$9!#3FE@(x,y) K*$$$F(x,y-ydelta) $+$i(x,y+ydelta) $^$G!"$^$?$O(x,ylow) $+$i(x,yhigh) $^$G$N@~J,$,0z$+$1$^$9$,!"$3$1$i$O$$/DN%G!<%?Ns$,M?$(i1k+KhCFUQoj$^$9!#8m:9;X<(@~$NC<$K$O9o$_$N0u$,IU1i1^$9(**set bars** $,;H$o1F$$J$1$1$P!#>\:Y$K4X7F$O!"0J2<;2>H: **set bars (p. 109)**)!#




```
2 Ns:  [0EL[$N x]  y  ydelta
3 Ns:  x  y  ydelta
4 Ns:  x  y  ylow  yhigh
```

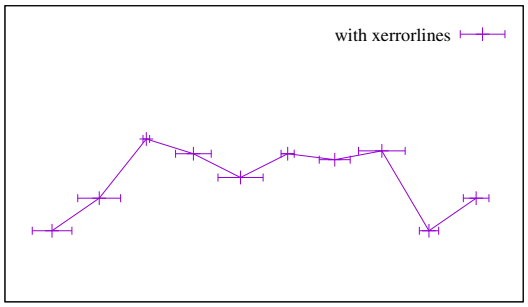
F~NONs$rDI2C(4,5 NsL\) 9k$H!"$=1i$OE@$N variable color >pJsH7$F;H$o1^$9!#

0J2<$b;2>H

errorbar %G%b!#

Xerrorlines

xerrorlines %9%?%$%k$O 2 <!85$N%G!<%?IA2h$N$_$GMx MQ2DG=$G$9!#**xerrorlines** $O **linespoints** $K;w$F$$$^9,!"?eJ?$N8m:9@~$,IA$+$1k3H,0c$$$^$9!#3FE@(x,y) $G!"%G!<%?Ns$N8D?t$K1~$8$F(xlow,y) $+$i(xhigh,y) $^$G!"$^$?$O(x-xdelta,y) $+$i(x+xdelta,y) $^$G$N@~J,$,IA$+$1!"$=$7$F9o$_$N0u$,8m:9@~$NC<$KCV$+$1$^$9(**set bars** $,;H$o1F$$J$>19g!#>\:Y$O!"0J2<;2>H: **set bars (p. 109)**)!#4pK\E*KO!"3 Ns$+4 Ns$N%G!<%?$,I,MW$G$9:

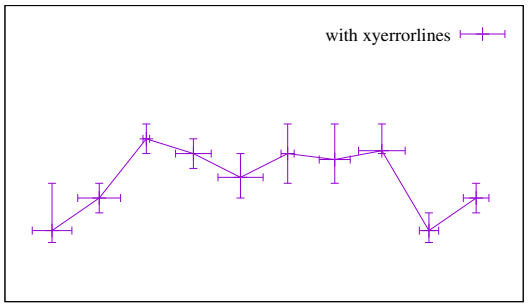



```
3 Ns:  x  y  xdelta
4 Ns:  x  y  xlow  xhigh
```

F~NONs$rDI2C(4,5 NsL\) 9k$H!"$=1i$OE@$N variable color >pJsH7$F;H$o1^$9!#

Xyerrorlines

xyerrorlines %9%?%$%k$O 2 <!85$N%G!<%?IA2h$N$_$GMx MQ2DG=$G$9!#**xyerrorlines** $O**linespoints** $K;w$F$$^$9 $,!"?eJ?$H?bD>$N8m:9@~$bIA$+$lk3H,0c$$^$9!#3F E@(x,y) $G!"%G!<%?Ns$N8D?t$K1~$8$F!"(x,y-ydelta) $+$i (x,y+ydelta) $^$G$H (x-xdelta,y) $+$i (x+xdelta,y) $^ $G!"$"$k$$O(x,ylow) $+$i (x,yhigh) $^$G$H (xlow,y) $+ $i (xhigh,y) $^$G$N@~J,$,IA$+$l!"$=$7$F9o$_$N0u$,8m :9@~$NC<$KCV$+$l$^$9(**set bars** $,;H$olF$$J$>19g!# >\:Y$O!"0J2<;2>H: **set bars (p. 109)**)!#3l$O!"4 Ns$+ 6 Ns$NF~NO%G!<%?$,I,MW$G$9!#




```
4 Ns:  x  y  xdelta  ydelta
6 Ns:  x  y  xlow  xhigh  ylow  yhigh
```

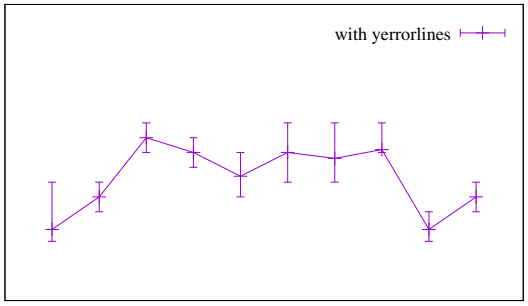
%G!<%?$,!"%5%]!<%H$5lF$$J$$:.9g7?$N7A<0$GM?$(B$il?>19g!"**plot** %3%^%s%I$N **using** %U%#%k%?$r;HCF E,@Z$J7A$KD>5J$$H$$1$^$;$s!#Nc$(B$P%G!<%?$,(x,y,xdelta,ylow,yhigh) $H$$&7A<0G"$k>19g!"0J2<$N$h $&$K7^$9:

```
plot 'data' using 1:2:($1-$3):($1+$3):4:5 with xyerrorlines
```

F~NONs$rDI2C(5,7 NsL\) 9k$H!"$=li$O3F%G!<%?E@Kh$N variable color >pJsH7$F;H$ol^$9!#

Yerrorlines

yerrorlines ($^$?$O **errorlines**) %9%?%$%k$O 2 <!85$N %G!<%?IA2hN_$GMxMQ2DG=$G$9!#**yerrorlines** $O **linespoints** $K;w$F$$^9,!"?hD>$N8m:9@~$,IA$+$lk3H,0c$$^$9!#3FE@(x,y) $G!"%G!<%?Ns$N8D?t$K1~$8$F(x,y-ydelta) $+$i (x,y+ydelta) $^$G!"$^$?$O (x,ylow) $+$i (x,yhigh) $^$G$N@~J,$,IA$+$l!"$=$7$F9o$_$N0u$,8m:9@~$N C<$KCV$+$l$^$9(>\:Y$O!"0J2<;2>H: **set bars (p. 109)**)!# 3l$O!"3 Ns$+4 Ns$NF~NO$,I,MW$G$9!#



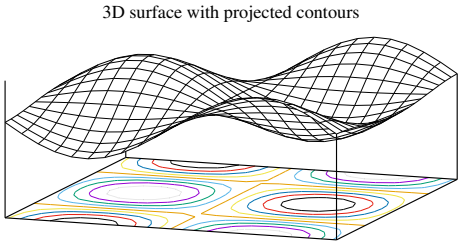

```
3 Ns:  x  y  ydelta
4 Ns:  x  y  ylow  yhigh
```

F~NONs$rDI2C(4,5 NsL\) 9k$H!"$=li$OE@$N variable color >pJsH7$F;H$ol^$9!#

0J2<$b;2>H!#

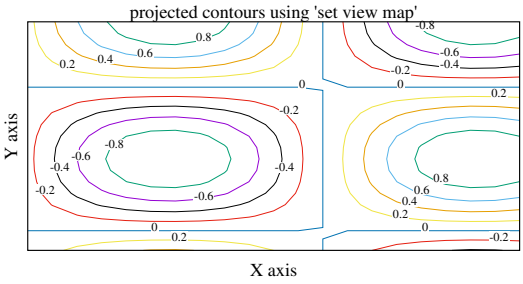
%(%i!<%P!<$N%G%b

3 <!85(6JLL) IA2h (3D (surface) plots)



6JLLIA2h$O!"%3%^%s%I **plot** GOJ/%3%^%s%I **splot** $r;H$C$F@8@.$7$^$9!#%9%?%$%k **with lines** $r;H$($P!"6JLL$r3J;R@~$G@8@.$G$-$^$9!#6JLL$NEIjDY7$O!"%9%?%$%k **with pm3d** $G9T$&3H$,$G$-$^$9!#6JLL$ODL>o!"$=$l$,3<!85$N6JLLG"kHOC$-$jo+kh$&$J;kJ}8~$+$iI=<(5l$^$9!#$=$N>19g!"X, Y, Z<4O9YFIA2hFb$KI=<($5l^$9!#3<!85E*$J:x3P$O!"1#@~=hM}$d!"6JLIMWAG$N?<$5@0NsKh$j!"$h$jA}I}$5l^$9!#0J2<;2>H **hidden3d (p. 128)**, $*$h$S **set pm3d (p. 149)** $N%*%W%7%g%s$G$"$k **depthorder (p. 150)**!#%3%^%s%I **splot** $O!"Dj?t$NZ CMKBP9$kEy9b@~$r7W;$7IA2h$9k3HbG-$^$9!#3liNEy9b@~$O!"6JLL$=$l<+BN$N>e$K=q$/3HbG$-$^$9$7!"XY J?LL$X<M1F$9k3HbG-$^$9!#0J2<;2>H **set contour (p. 115)**!#

2<!85<M1F (set view map)



%3%^%s%I **splot** $NFCJL$J>19gH7$F!"IA2h$NZ J}8~$N<M1F$Khk!"Z :BI8$N2<!856JLL$X$NCO?^:n@.(map) $,$"j^$9!#0J2<;2>H **set view map (p. 172)**!#3NIA2h%b!<%I$O!"Ey9b@~$NIA2h$d29EYJ,I[$r@8@.9kNKMxMQG-$^$9!#3N?^$OIA2h%9%?%$%k **lines** $r0lEY!"**labels** $r0lEYIA2h$7$?Ey9b@~$r<($7F$$$^$9(LuCm ?^$,I=<(5l$F$$$k>19g)!#

Part III

%3%^%s%I (Commands)

3N%;%/%7%g%sGO **gnuplot** $,<u$1IU1k%3%^%s%I$r%"
%k%U%!%Y%C%H=gKJBY$F$$^$9!#$3$N%I%-%e%a%s%H$r;f$K
0u:~7?bN$OA4$F$N%3%^%s%I$r4^sG$$^9,!"BPOC
7?$G;2>H$G$-$k%I%-%e%a%s%H$NJ}$O40A4GO$J$$2DG=@-$,$"j^$9!#<B:]!"$3$N8+=P$7$N2<$K2?$N%3%^%s%I$b
I=<(5l$J$$%7%9%F%'$,$"j^$9!#

$[$HsI$N>19g!"%3%^%s%IL>$H$=$N%*%W%7%g%s$O!"U6$io7$/$J$$HOO0$G>JN,$9k3H,2DG=$G$9!#9JoA!"
"plot f(x) with lines" NBeojK**"p f(x) w li"** H9k3H,G-$^$9!#

=q<0$N5-=R$K$*$$F!"Cf%+%C%3({}) $OI2C;XDj$G$-$k0z?t$r0UL#$7!"=DK@(|) $O8_$$$KGSB>E*$J0z?t$r6h@Z$k
bNH7$^$9!#

Cd

cd %3%^%s%I$O%+%l%s%H%G%#%l%/%H%j$rJQ99$7$^$9!#

=q<0:

```
cd '<%G%#%l%/%H%jL>>'
```

%G%#%l%/%H%jL>$O0zMQId$K0O$^$l$F$$$J1lPJj^$;$s!#

Nc:

```
cd 'subdir'
cd '..'
```

%P%C%/%9%i%C%7%e(\) $OFs=E0zMQIdFb(") GOFCJL$J0UL#$r;}CF7^$&$?aK%(%9%1!<%W9kI,MW$,$"j^
9N$G!"Windows %f!<%6$K$OC10l0zMQId$r;H$&$3Hr4+a^$9!#Nc$($P!"

```
cd "c:\newdata"
```

GO<:GT7^9,!"

```
cd 'c:\newdata'
cd "c:\\newdata"
```

Ji4|BTDLjKF0$/$G7g$&!#

Call

call %3%^%s%I$O!"FI$_9~$'%U%!%$%kL>$N8e$m$K!"9 D^GN%Q%i%a!<%?$rM?$(k3H,G-k3Hr=|1P
load %3%^%s%I$HEy2A$G$9!#

```
call "inputfile" <param-1> <param-2> <param-3> ... <param-9>
```

gnuplot $NOJA0$N%P!<%8%g%sGO!"$=$N%Q%i%a!<%?J8;zNs$NFbMF$r!"FCJL$J5-9f$0, $1, ..., $9 $r%^%/%m$Nh&
$KCV4($9k3HGI=8=7F$$$^7?!#3N;EAH$_$O!"8=:_$OHs?d>)$G$9(0J2<;2>H **call old-style (p. 67)**)!#

8=:_$N gnuplot $O!"U8;zNsJQ?t ARG0, ARG1, ..., ARG9 $H!"@0?tJQ?t ARGC $rDs6!$7$^$9!#**call** %3%^%s%I
$r<B9T$9kH!"ARG0 KOF~NO%U%!%$%kL>$,!"ARGC KO%Q%i%a!<%?J8;zNs$,!"ARG1 $+$i ARG9 KO
%3%^%s%I%i%$%s$sKJBYil$?%Q%i%a!<%?$NCM$,FI$_9~$^$l$^$9!#

DL>o%Q%i%a!<%?J8;zNsCMH7$FJ]B8$5lkNG!"$=$l$r%^%/%mE83+$7$F;2>H$9k3HbG-$^$9(8E$$7A<0
$N=q<0$NN`;w)!#7+$7!"B?$/$N>19g!"$=li$OB>$NUQ?t$HF1MM$KMxMQ9kJ}$,$h$j<+A3$G7g$&!#

Nc (Example)

```
0J2<$r call $9$k$H:
    MYFILE = "script1.gp"
    FUNC = "sin(x)"
    call MYFILE FUNC 1.23 "This is a plot title"
8F$S=P$5$l$?%9%/%j%W%HFb$G$O0J2<$N$h$&$K$J$j:
    ARG0 $O "script1.gp"
    ARG1 $OJ8;zNsCM "sin(x)"
    ARG2 $OJ8;zNsCM "1.23"
    ARG3 $OJ8;zNsCM "This is a plot title"
    ARGC $O 3
$=$N%9%/%j%W%HFb$G$O0J2<$N$h$&$J$b$N$r<B9T$G$-$k:
    plot @ARG1 with lines title ARG3
    print ARG2 * 4.56, @ARG2 * 4.56
    print "This plot produced by script ", ARG0
```

3NNc$N ARG1 $O%^%/%m$H7F;2>H7J1l$P$$$1$^$;s,!"ARG2 $O%^%/%m;2>H$G$b(?tCMDj?t$KJk)!"JQ?tN^$^$G$b(J8;zNs"1.23" $,<B?tCM$K<+F0E*$KJQ49$5l?8e$NF1$8?tCMKJ$k) 9=$o$J$$$3HKCm0U7F$/$@$5$$!#

%7%'%k%9%/%j%W%H$G gnuplot $r%3%^%s%I%i%$%s%*%W%7%g%s **-c** D-$G<B9T$9k3HG!"3l$HF1$8$3$H$rD>@\9T$&3HbG$-$^$9:

```
gnuplot -persist -c "script1.gp" "sin(x)" 1.23 "This is a plot title"
```

Old-style

0J2<$O!"0JA0$N%P!<%8%g%s$N gnuplot $G;H$olF$$$?call $N;EAH$_$N5-=R$G9,!"8=:_$OHs?d>)$G$9!#

```
call "<input-file>" <param-0> <param-1> ... <param-9>
```

F~NO%U%!%$%kL>$O0zMQId$G0O$^J1lPJj$^$;$s!#F~NO%U%!%$%k$N3F9T$rFI$_9~$`:]$K!"0J2<$NFCJL$JJ8;zNs$rAv:7^$9: $0 $1 $2 $3 $4 $5 $6 $7 $8 $9 $#!#$=l,8+D+C?$i!"V**$**+?t;z!WNNsO **call** %3%^%s%I%i%$%s$NBP1~9k%Q%i%a!<%?KCV-49$($^$9!#0zMQId$O%3%T!<$;$:!"J8;zNsJQ?tCV49$O9T$$$^$;$s!#J8;zNs **$#** $O%Q%i%a!<%??t$KCV-49($^$9!#$=$NB>$NJ8;z$,8emK$D$$F$$k **$** $O!"%(%9%1!<%W%7!<%1%s%9$H7F=hM}7^$9!#Nc$($P1 8D$N **$** $r;H$&KO **$$** H7$^$9!#

Nc:

```
%U%!%$%k'calltest.gp' $O0J2<$N9T$r4^$s$G$$$k$H$9$k$H:
   print "argc=$# p0=$0 p1=$1 p2=$2 p3=$3 p4=$4 p5=$5 p6=$6 p7=x$7x"
```

```
<!$N9T$rF~NO$9$k$H:
   call 'calltest.gp' "abcd" 1.2 + "'quoted'" -- "$2"
```

```
0J2<$N$h$&$KI=<(($5$l$k$G$7$g$&:
   argc=7 p0=abcd p1=1.2 p2=+ p3='quoted' p4=- p5=- p6=$2 p7=xx
```

Cm0U: J8;z **$** $O!"gnuplot <+?H$N%G!<%?NsMQ$N=q<0$HVD$+$j$^$9$7!"Unix 7O$N%7%'%k$N4D6-JQ?t$r;2>H9k **$** HbVD$+j^$9!#FCJL$JJ8;zNs**$#** $O!"gnuplot $N%P!<%8%g%s 4.5 $+$i 4.6.3 $^$G$O!"4V0c$($F%3%a%s%HJ8;zNs$N6h@Z$jJ8;z$H7F2r<a5l$F$$$^7?!#J8;zNsCV49GO0zMQId$OL5;k$5lkNG!"J8;zNsDj?t$O4JC1$K2ulF7^$$$^$9!#

Clear

clear %3%^%s%I$O!"**set terminal** $d **set output** $GA*Br$7$?2hLL!"=PNOAuCV$r%/%j%"7^$9!#%O!<%I%3%T!<AuCV$KBP7F$ODL>o2~%Z!<%8$r9T$$$^$9!#

$$/D+$N=PNOAuCV$O **clear** %3%^%s%IGO **set size** $GDj5A$5l?IA2hNN0hN_$r>C5n$7$^$9!#$=$N$?a!"**set multiplot** HHbK;HMQ9k3H$GA^F~?^$r0l$D:n$k3H$,$G$-$^$9!#

Nc:

```
set multiplot
plot sin(x)
set origin 0.5,0.5
set size 0.4,0.4
clear
plot cos(x)
unset multiplot
```

$3$1iN%3%^%s%I$N>\:Y$K$D$$F$O!"0J2<;2>H: **set multiplot (p. 141)**,**set size (p. 159)**, **set origin (p. 147)**!#

Do

=q<0:

```
do for <iteration-spec> {
     <commands>
     <commands>
}
```

$3$1$O!"%3%^%s%INs$rJ#?t2s<B9T7^$9!#%3%^%s%I$OCf%+%C%3{} $G0O$_!"$+$D3+;O%+%C%3"{" $O!"%-!<%o!<%I **do** $HF1$89TKCV/I,MW$,$"j^$9!#$3$N%3%^%s%I$O!"8E$7A<0($+C3$J$7) $Nif/else 9=J8$H0l=o$K;H$&3HOG$-$^$;$s!#7+jJV7;XDj<iteration-spec> NNcK$D$$F$O!"0J2<;2>H:**iteration (p. 35)**!#Nc:

```
set multiplot layout 2,2
do for [name in "A B C D"] {
    filename = name . ".dat"
    set title sprintf("Condition %s",name)
    plot filename title name
}
unset multiplot
```

Evaluate

%3%^%s%I **evaluate** $O!"0z?tJ8;zNs$H7FM?$($il?%3%^%s%I$r<B9T$7$^$9!#$=$NJ8;zNsCf$K2~9TJ8;z$rF~lF$O$$$1$^$;$s!#

=q<0:

```
eval <string expression>
```

$3$1$O!"FC$KF1MM$N%3%^%s%IN7+$jJV7KM-MQ$G$9!#

Nc:

```
set_label(x, y, text) \
  = sprintf("set label '%s' at %f, %f point pt 5", text, x, y)
eval set_label(1., 1., 'one/one')
eval set_label(2., 1., 'two/one')
eval set_label(1., 2., 'one/two')
```

J8;zNs$+$i%3%^%s%I$r<B9T$9kJLNJ}K!$K4X$7FO!"0J2<;2>H:**substitution macros (p. 44)**!#

Exit

exit $H **quit** $NN>%3%^%s%I$O END-OF-FILE J8;z(DL>o Ctrl-D) F1MM!"8=:_$NF~NO%9%H%j!<%'!"$9Jo$AC<Kv$NBPOC$d%Q%$%WF~NO!"%U%!%$%kF~NO(%Q%$%W) $+$i$NF~NO$r=*N;5;$^$9!#F~NO%9%H%j!<%'$,F~$l;R(3,AXE*$Jload $N%9%/%j%W%H$G) KJCF$$$k>19g!"FI$_9~$_$O?F$N%9%H%j!<%'$G7QB3$5$1$^$9!#%H%C%W%l%Y%k$N%9%H%j!<%'$,JD$8ilkH!"%W%m%0%i%'O=$l<+?H=*N;$7$^$9!#

%3%^%s%I **exit gnuplot** $O!"D>$A$K!"L5>r7o$K!"$=$7FNc(F~NC%9%H%j!<%`$,B?CJ3,$K%M%9%H5l$F$$$F$b!"gnuplot $r=*N;$5$;$^$9!#$=$N>l9g!"3+$+lF$$?A4FN=PNC%U%!%$%k$O$-$l$$K40A4$J7A$GOJD8il$J$$2DG=@-$,$"j^$9!#;HMQNc:

```
bind "ctrl-x" "unset output; exit gnuplot"
```

%3%^%s%I **exit error "error message"** $O!"5?;w%W%m%0%i%`%(%i!<$r9T$$$^$9!#BPOC7?%b!<%I$G$O!"$=$N%(%i!<%a%C%;!<%8$rI=<(($7!"$9$Y$N%M%9%H$5$l$?%k!<%W$dcall $rCfCG$7$F%3%^%s%I%i%$%s$K5"$j$^$9!#HsBPOC7?%b!<%I$G$O!"%W%m%0%i%`$r=*N;7^$9!#

>\:Y$O!"0J2<;2>H: **batch/interactive (p. 22)**!#

Fit

%3%^%s%I **fit** $O!"Marquardt-Levenberg K!Kh$kHs@~7A:G>.<+>hK!(NLLS) $rMQ$$$F!"%G!<%?E@$N=89g$K%f!<%6$,M?$($k<0$rEvFOa^$9!#FHN)JQ?t$O12 $^$G5v5l$F$$F!"=>B0JQ?t$O>o$K1 DG!"G$0U8D?t$N%Q%i%a!<%?rEvFOak3H,G-$^$9!#5i$KDI2C$G!"%G!<%?E@$N=E$_IU$1MQ$K8m:9I>2A$rF~NO$9k3Hb2DG=$G$9!#

fit $N:G$b4pK\E*$J;HMQK!$O!"0J2<$NC1=c$JNc$,<($7$F$$^$9:

```
f(x) = a + b*x + c*x**2
fit f(x) 'measured.dat' using 1:2 via a,b,c
plot 'measured.dat' u 1:2, f(x)
```

=q<0:

```
fit {<ranges>} <expression>
    '<datafile>' {datafile-modifiers}
    {{unitweights} | {y|xy|z}error | errors <var1>{,<var2>,...}}
    via '<parameter file>' | <var1>{,<var2>,...}
```

HC0O(xrange, yrange Ey) $O!"Ev$FOa$K;HMQ$9$k%G!<%?E@(B$9$kL\E*$G;H$&$3H,G-!"$=$NHC0O$rD6$($?%G!<%?$OL5;k7^$9!#$=$N=q<0$O**plot** %3%^%s%IF1MM

```
[{dummy_variable=}{<min>}{:<max>}],
```

$G$9!#0J2<;2>H: **plot ranges (p. 97)**!#

<expression> $O!"DL>o$O"i+8a%f!<%6Dj5A5l$?f(x) $^$?$Of(x,y) $N7A$N4X?tG9$,!"**gnuplot** $GM-8z$JIs$J?t<0$G$b;XDj$G$-$^$9!#$?$@$7<B?tCM4X?tGJ1l$P$$$1$^$;$s!#FHN)JQ?t$NL>A0$O!"%3%^%s%I **set dummy** $G@_Dj$9k+!"fit $NHC0O;XDjItJ,(<rangse>) $G@_Dj$7$^$9(0J2<$r;2>H)!#%G%U%)%k%H$G$O!":G=i$N2 DOx, y HJj^$9!#$5iK!"$=$N?t<0$O!"Ev$FOa$N:n6H$Khj7hDj9kCM$r;}$D1 $D0J>e$NJQ?t(%Q%i%a!<%?) $K0MB8$9Y-$G$9!#

<datafile> $O**plot** %3%^%s%I$HF1MM$K07$ol^$9!#**plot datafile** $N=$>~;R(**using**, **every**,...) $O!"**smooth** $r=|$$F!"A4$F**fit** $K;H$&3H$,$G$-$^$9!#0J2<;2>H:**plot datafile (p. 85)**!#

%G!<%?U%!%$%k$NFbMF$O!"plot %3%^%s%I$K;HMQ9kNHF1$8 **using** ;XDj$r;H$&$3HG=@Fp$K2r<a$5$;$k3H$,$G$-$^$9!#Nc$($P!"FHN)JQ?t x $r2 NsL\$H3 NsL\$NOBH7$F@8@.$7!"z NCMr6 NsL\$+$i<h$j!"=E$_$r1H7$?$>l9g$C0J2<$Nh&K7$^$9:

```
fit ... using ($2+$3):6
```

using ;XDj$,$J$>l9g!"fit $C0EL[$KFHN)JQ?t$O1 D@1H2>Dj7^$9!#%U%!%$%k<+?H!"$^$?using ;XDj$,1 Ns$@1N%G!<%?$r;}$D19g!"$=$N9THV9f$rFHN)JQ?tCM$H7F;HMQ7^$9!#**using** ;XDj$rM?($?>19g!":GBg128D(;XDj7F%3%s%Q%$%k7F$$$lP5iK$=$l0J>e)$NFHN)JQ?t$rMxMQG-$^$9!#

%*%W%7%g%s **unitweights** (3l$,%G%U%)%k%H) $O!"$9YF$N%G!<%?E@(B$,Ey7=E$_$r;}DH$_$J7^$9!#$3lO!"%-!<%o!<%I **error** $r;HMQ$9k3HGJQ99G-!"3l$O%G!<%?E@$N=E$_$K1/s**2 $N=E$_$r7W;;$9kN$K;HMQ$7$^$9!#

FHN)JQ?t$N8m:9I>2A$K$*$$$F!"$=$N=E$_$K$O!"'M-8zJ,;6K!"(effective variance method; Jay Orear, Am. J. Phys., Vol. 50, 1982) $K=>$C$F!"$5iKEvFO$a4X?t$NHyJ,78?tr+l^$9!#

%-! <% o! <% I **errors** KO! "$=$N8emK! "F~NO$,$I$NJQ?t$N8m: 9%G$ "kN$+$r< ($9%3%s%^6h@Z$j$N1 $D0J>e$NJQ ?tL>$N%j%9%H$,IU$-$^$9! #=>B0JQ?tz $O>o$K$=$NCfKJ1l$P$$$1$^$;s,! "FHN)JQ?t$OI,?\$GO "j^$;$s! # $=$N%j%9%H$N3FJQ?t$KBP$7! "%U%!%$%k$+$i$=$NJ,$N! "3FJQ?t$N8m: 9I>2A$r; }$DDI2CNNsrFI$_9~$_$^$9! #7+$j JV$7KJj^9,! "**using** ;XDjKh$j=@Fp$J2r<a$,2DG=$KJj$^$9! #hC$F! "FHN)JQ?t$N?t$O0EL[$K! "**using** ;XDjFbNNsN?t$+$i1 $r0z$$$F(=>B0JQ?tJ,)! "5i$K**errors** ;XDjFb$NJQ?t$N8D?t$r0z$$$??tKJk3HKCm 0U7F$/$@$5$$! #

NcH7$F! "2 DNFHN)JQ?t$,$ "$j! "$=7F1 $DL\$NFHN)JQ?t$H=>B0JQ?t$N8m: 9%G! <%?$,$ "$k>19g$O! "**errors x,z** ;XDj$H5 Ns$N**using** ;XDj$r; H$&3HKJj^9,! "$=$1$O x:y:z:sx:sz Nh$&$K2r<a$5$1$^$9 (x, y $OFH N)JQ?t! "z $,=>B0JQ?t! "Sx, sz $O x, z $NI8=`JP: 9)! #

errors ;XDjNAgCH7$?N,5-K!$b2,3 MQ0U$5$1$F$$$^$9: **yerrors** (FHN)JQ?t$, 1 Ns$ "kEvFOaMQ)! "**zerrors** (hj0lHL$N>19g) $O! "$$$:1b**errors z** $HF1CM$G! "1 Ns$@$1DI2C$N=>B0JQ?tMQ$N8m: 9Ns$,$ "k3Hr0UL#$7 $F$$$^$9! #

xyerrors $O! "FHN)JQ?t$O1 Ns$G! "$=$NFHN)JQ?t$H=>B0JQ?t$NN>J}$N2 Ns$N8m: 9Ns$,DI2C$5$1k3Hr0UL#$7 $^9! #$3$N>19g! "x $Hy $N8m: 9$O Orear $NM-8zJ,; 6K! (effective variance method) $G=hM}$5$1$^$9! #

yerror $H**xyerror** $N7A<0$*hS2r<a$O! "$=1>$1 2 <!85IA2h%9%?%$%k$N**yerrorlines** $H**xyerrorlines** $K F1Ey$G$ "k3HKCm0U7F$/$@$5$$! #

%3%^%s%I **set fit v4** $r; HMQ$9kH! "fit $N%3%^%s%I=q<0$O**gnuplot** %P! <%8%g%s 4 0JA0$H8_49$N=q<0KJj^ $9! #$=$N>19g! "**using** KO! "FHN)JQ?t$, 2 $D0J>e$JiP! "FHN)JQ?t$N?t$h$j2 $D(z $Hs) B?$$;XDj$,I,MW$G! " **gnuplot** $O! "**using** ;XDj$GM?$ (il$?Ns$N?t$K1~$8$F! "0J2<$N=q<0$K=>$$^$9:

```
z                       # FHN)JQ?t$O 1 $D (9THV9f)
x:z                     # FHN)JQ?t$O 1 $D (Bh 1 Ns)
x:z:s                   # FHN)JQ?t$O 1 $D (A4It$G 3 Ns)
x:y:z:s                 # FHN)JQ?t$O 2 $D (A4It$G 4 Ns)
x1:x2:x3:z:s            # FHN)JQ?t$O 3 $D (A4It$G 5 Ns)
x1:x2:x3:...:xN:z:s     # FHN)JQ?t$O N 8D (A4It$G N+2 Ns)
```

3l$O! "2 $D0J>e$NFHN)JQ?t$G fit r9$k>19g! "z-8m: 9s $rM?$ (kI,MW,$ "k3Hr0UL#9k3H$KCm0U$7$F $/$@$5$$! #=E$_$r1 K7$?$S>19g$O! "$=lr! "Nc$ ($P x:y:z:(1) Nh$&$J=q<0$r using $K; XDj$9k3HGL@< (E*$KM?$ (kI,MW,$ "j^$9! #

2>JQ?tL>$O! "2<$G>R2p9kh&$KHC0O; XDj$G; XDj9k3H$GJQ9$G$-$^$9! #: G=i$NHC0O$O**using** ;XDj$N: G=i$N bN$KBP1~$7! "0J2<F1MM$G$9! #=>B0JQ?tG "$kz $NHC0O; XDj$bG-$^$9$,! "$=lO! "f(x,...) NCMr$=$NHC0O30 K7F7$^$&h&$J%G! <%?E@$,! "; D: 9$r: G> .2=$9k3HK$O4sM?$7J>19g$KM-8z$G$9! #

J#?t$N%G! <%?=89g$bJ#?t$N1 JQ?t4X?t$KF1; ~KEvFOak3Hb! "y $r' 2>JQ?t' H9lP2DG=$G$9! #Nc$ ($P %G! <%?9THV9f$r; H$$! "2 JQ?t4X?tXNEvFO$a! "$H9l$P$$$$G7g$&! #0J2<; 2>H: **fit multi-branch (p. 75)**! #

via ;XDj; R$O! "%Q%i%a! <%?$N: GE,2=$r! "D>@\9T$&$+! "$^$?$O%Q%i%a! <%?%U%!%$%k$r; 2>H9k3HKhCF9T$& $+$r; XDj7^$9! #

Nc:

```
f(x) = a*x**2 + b*x + c
g(x,y) = a*x**2 + b*y**2 + c*x*y
set fit limit 1e-6
fit f(x) 'measured.dat' via 'start.par'
fit f(x) 'measured.dat' using 3:($7-5) via 'start.par'
fit f(x) './data/trash.dat' using 1:2:3 yerror via a, b, c
fit g(x,y) 'surface.dat' using 1:2:3 via a, b, c
fit a0 + a1*x/(1 + a2*x/(1 + a3*x)) 'measured.dat' via a0,a1,a2,a3
fit a*x + b*y 'surface.dat' using 1:2:3 via a,b
fit [*:*][yaks=*:*] a*x+b*yaks 'surface.dat' u 1:2:3 via a,b

fit [][][t=*:*] a*x + b*y + c*t 'foo.dat' using 1:2:3:4 via a,b,c

set dummy x1, x2, x3, x4, x5
h(x1,x2,x3,x4,s5) = a*x1 + b*x2 + c*x3 + d*x4 + e*x5
fit h(x1,x2,x3,x4,x5) 'foo.dat' using 1:2:3:4:5:6 via a,b,c,d,e
```

H?I |$N8D! 9$N%9%F%C%W$N8e$G! "EvFOaN8=:_$N>uBV$K$D$$$F$N>\:Y$J>pJs$,2hLL$KI=< (5l$^$9! #$=$7:G=i $H:G8e$N>uBV$K4X$9$kF1$8>pJs$, "fit.log" $H$$&%m%0%U%!%$%k$K$b=q$-=P5l$^$9! #3N%U%!%$%k$OA0NEvF Oa$NMzNr$r>C5J$$h$&$K>o$KDI2C$5lF$$$-$^$9! #3l$OK>$'Ji:o=|! "$"$k$$OJL$JL>A0$KG-$^$9! # %3%^%s%I **set fit logfile** $r;H$C$F%m%0%U%!%$%k$NL>A0$rJQ9$9$k3HbG$-$^$9! #

set fit errorvariables $r;HMQ$7$?>19g! "3FEv$FOa%Q%i%a!<%?$N8m:9$O$=$N%Q%i%a!<%?$H;w$?L>A0("_err" $,DI2C$5l?L>A0) $NUQ?t$KJ]B8$5$l$^$9NG! "$=$N8m:9r=$N8e$N7W;;$NF~NO$H7F;HMQ9k3H$,$G$-$^$9! #

set fit prescale H7$?>19g! "Ev$FOa%Q%i%a!<%?$r! "$=li$N=i4|CM$+$i%9%1!<%kJQ4$9$7$^$9! #$3lKhj! "8D!9$N%Q%i%a!<%?$NBg$-$5K+Jj0c$$,$"$kh&$J>19g$G$b! "Marquardt-Levenberg %k!<%A%s$,$hjAa/! "hj?.Mj@-$N! "$kCM$K<}B+$5;ilkh$&$KJj$^$9! #

EvFOaNH?I|$O Ctrl-C (wgnuplot GO Ctrl-Break) $r2!$9$3$H$GCfCG$G$-$^$9! #8=:_$NH?I|$,@5>o$K=*N;7?8e! "0J2<$N$$:l+$rA*$V3H$,$G$-$^$9:(1) Ev$FOa$r;_$a$F8=:_$N%Q%i%a!<%?NCMr:NMQ9k(2) EvFOarB39T9k(3) **set fit script** $+! "4D6-JQ?t **FIT_SCRIPT** $G;XDj$7$? **gnuplot** %3%^%s%I$r<B9T9k! #$=$N%G%U%)%k%H$O **replot** $G! "$b$7%G!<%?$HEvFO$a4X?t$r0lDN%0%i%U%K$"$i$+$8$aIA2h$7F"lP! "8=:_NEvFOa$N>uBV$rI=<(9k3H$,$G$-$^$9! #

fit $,=*N;$7$?8e$O! ":G8e$N%Q%i%a!<%?$NCM$rJ]B8$9kN$K **save fit** %3%^%s%I$r;H$$^$9! #$=NCMO:F$S%Q%i%a!<%?$NCMH7$F;H$&3H$,$G$-$^$9! #>\:Y$O! "0J2<;2>H: **save fit (p. 105)**! #

%Q%i%a!<%?$ND4@0 (adjustable parameters)

via $O%Q%i%a!<%?$rD4@a9k$?$a$N2$D$NJ}K!$r;XDjG-$^$9! #0lDO%3%^%s%I%i%$%s$+$iD>@\;X<($9kbNG! "b&0lDO%Q%i%a!<%?$r;2>H$7$F4V@\E*$K9T$&$bNG$9! #$3$N2$D$O=i4|CM$N@_Dj$G0c$C$?J}K! $r<h$j$^$9! #

D4@0$9$k%Q%i%a!<%?$O! "**via** %-!<%o!<%I$N8emK%3%s%^$G6h@Z$il?JQ?tL>$N%j%9%H$r=q$/$3HG;XDjG-$^$9! #Dj5A5l$F$$$J$$JQ?t$O=i4|CM1.0 H7$F:n$il^$9! #7+$7EvFOaO! "JQ?t$N=i4|CM$,$"i+8aE,@ZJCMK@_Dj$5lF$$$kJ}$,B?J,B.$/<}B+9kG7g&! #

%Q%i%a!<%?$U%!%$%k$O! 9$N%Q%i%a!<%?$r! "8DJL$K19T$K0l$D$:$D! "=i4|CM$r<!$Nh&$J7A$G;XDj7F=q$-$^$9! #

```
JQ?tL> = =i4|CM
```

'#' $G;O$^$k%3%a%s%H9T$d6u9T$b5v$5l^$9! #FCJL$J7A<0H7$F

```
JQ?tL> = =i4|CM        # FIXED
```

$O! "$3$NJQ?t$,8GDj5l$?%Q%i%a!<%?$G$"$k3H$r0UL#$7! "$=$lO3$N%U%!%$%k$G=i4|2=$5l^9,! "D4@aO5l^$;$s! #3l$O! "**fit** $G%l%]!<%HJQ?t$NCf$G! "$Il,8GDj5l$?JQ?t$G$"$k$+$rL@<(9kNKM-MQG7g&! #J*! "**# FIXED** $H8@$&%-!<%o!<%I$7K$3$N7A$GJ/FOJj$^$;$s! #

Fit $N35N, (fit beginners_guide)

fit $O! "M?$(il$?%G!<%?$E@$rM?$(il$?%f!<%6Dj5A4X?t$KbCHhNI$/Ev$FOakh$&$J%Q%i%a!<%?$r8+$D1kNK;Hol$^$9! #$=$NEvFOaO! "F1$8>l=j$G$NF~NO%G!<%?E@$H4X?tCMHN<+>h8m:9! "$"$k$$O;D:9(SSR:Sum of the Squared Residuals) NDBr4p$KH=Dj$5l^$9! #$3NNICDI>o&V(%+%$) <+>h$H8FPl$^$9! #3N%"%k%4%j%:%\$O SSR $r:G>.2=$9k3Hr7h$&$H7^$9! #$b$&>/$7>\$7$/8@&$H! "%G!<%?8m:9($^$?$O1.0) $N=E$_D-;D:9$N<+>hOB(WSSR) $N:G>.2=$r9TCF$$$^$9! #>\:Y$O! "0J2<;2>H:**fit error_estimates (p. 72)**! #

3l$,! "(Hs@~7A) :G>.<+>hEv$FOaK!$H8F$Plkf(sG$9! #Hs@~7A$,2?$r0UL#$7$F$$$kN+$r8+$D1k$?$a$K?a$NR2p7^9,! "$=$NA0$K$$/D+$N2>Dj$K$D$$F=RYF$*$-$^$9! #$3$3GO4JC1N?a! "1 JQ?t$N%f!<%6!<Dj5A4X?t$Oz=f(x), 2 JQ?t$N4X?t$Oz=f(x,y) Nh$&$K$7! "$$:lb>BJQ?tH7$Fz $rMQ$$$k3HK7$^$9! #%Q%i%a!<%?HO **fit** $,D4@0$7$FE,@Z$JCM$r7hDj$9$k%f!<%6Dj5AJQ?t$G! "4X?t$ND j5A<0Cf$NL$CN?t$G$9! #$3$3$G8@&! "@~7A@-/Hs@~7A@-HO! "=>BJQ?t z $H **fit** $,D4@0$9$k%Q%i%a!<%?$H$N4X78$KBP9kbNG"$j! "z $HFHN)JQ?t x ($^$?$O x $Hy) HN4X78N3HGO"j^$;$s(?t3XE*$K=R$YkH! "@~7A:G>.<+>hLdBjGO! "EvFO$a4X?t$N%Q%i%a!<%?Kh$k2 3, ($=7F9$K9b3,$N) F34X?t$O0! "$H$$&&3HKJj^$9)! #

@~7A:G>.<+>hK! (LLS) GO! "%f!<%6Dj5A4X?t$OC1=c$J4X?tNDBG$"$j! "$=$l$>$l$C0l$D$N%Q%i%a!<%?$NDj?tG\$GB>$N%Q%i%a!<%?$r4^$^$J$$$K'KJj^$9! #Hs@~7A:G>.<+>hK! (NLLS) GO%h$jU#;($J4X?t$r07$$! "%Q%i%a!<%?$O?'s$J;HolJ}$r5$l$^$9! #%U!<%j%(5i?t$O@~7A$HHs@~7A$N:G>.<+>hK!$N0c$$rI=$90l$DNNcG$9! #%U!<%j%(5i?t$G$C0l$D$N9'$O

```
z=a*sin(c*x) + b*cos(c*x).
```

Nh$&$KI=5l$^$9!#b7!"a $Hb $,L$CN$J%Q%i%a!<%?$Gc $ODj?t$@H9lP%Q%i%a!<%?$NI>2A$O@~7A:G>.<+>hLdBjKJj^$9!#$7$+$7!"c $,L$CN$J%Q%i%a!<%?$JiP$=$l$OHs@~7ALdBj$KJj$^$9!#

@~7A$N>l9g!"%Q%i%a!<%?$NCM$OHf3SE*4JC1$J@~7ABe?t$ND>@\K!$KhC$F7hDj$G$-$^$9!#$7$+$7$=$Nh&$JLLS $OFC<l$J>l9gG"$j!"'gnuplot' $,;HMQ$9$kH?I|K!$O!"bAms$=$l$b4^$a$F!"$h$j0lHIE*$JNLLS LdBj$r2r$/3H$,$G$-$^$9!#**fit** $O8!:w$r9T$&$3HG:G>.CM$rC5$=$&$H7^$9!#H?I|$N3F%9%F%C%W$O!"%Q%i%a!<%?$N?7$7$CMNAHKBP7FWSSR $r7W;;$7$^$9!#Marquardt- Levenberg $N%"%k%4%j%:%'$O<!$N%9%F%C%W$N%Q%i%a!<%?NCMrA*Br7^$9!#$=7F$=$lO"i+8aM?$($?4p=`!"9JoA!"(1) EvFOa,"<}B+7?"(WSSR $NAjBP8m:9$,$"$k8B3&CMhj>.5/JC$?>l9g!#0J2<;2>H:**set fit limit (p. 122)**)!"$^$?$O(2) $"$i$+$8$a@_Dj$5l?H?I|?t$N8B3&$KC#7?>l9g(0J2<;2>H: **set fit maxiter (p. 122)**)!"$N$$:l+$rK~$?9^$GB3$lil$^$9!#%-!<%\!<%I$+$i$=$NEvFOaNH?I|$OCfCG$G$-$^$9$7!"$=$l$KB3$$FCf;_9k3HbG$-$^$9(0J2<;2>H: **fit (p. 69)**)!#%f!<%6JQ?tFIT_CONVERGED $O!"D>A0$Nfit %3%^%s%I$,<}B+$Khj=*N;7?>l9g$O1 $r;}$A!"$=$l0J30$NM}M3$GCfCG7?>l9g$O0 $r;}$A$^$9!#FIT_NITER $O!"D>A0$NEvFOaG9Tol$?7+$jUV7N2s?t$r;}$A$^$9!#

EvFOaK;Hol$k4X?t$O7P7P$"$k%b%G%k($^$?O"$kM}O@) $r85$K7F$$$F!"$=$l$O%G!<%?$N?6Iq$r5-=R$7$?$j!"$"$k$$$OM=B,7h$&$H7^$9!#$hCF **fit** $O!"%G!<%?$,$=$N%b%G%kKIl/$i$$$&$^/Ev$FO^CF$$$kN+$r7hDj$9k?$a!"$=7F8D!9$N%Q%i%a!<%?$N8m:9$NHO0O$rI>2A9k$?$a$K!"%b%G%k$NK+M3$J%Q%i%a!<%?$NCM$r5a$akN$K;H$ol^$9!#0J2<;2>H:**fit error_estimates (p. 72)**!#

$=$&GJ1l$P!"6J@~$KhkEvFOaK$*$1$k4X?t$O!"%b%G%kHOL54X78$KA*$PlF$$$^$9($=lO=J,$JI=8=NO$H:G$b>/$J$?t$N%Q%i%a!<%?$r;}$A!"%G!<%?$N798~$r5-=R7=$&$J4X?tH7$F7P83$K4p$E$$$FA*PlkG7g$&)!#

7+$7!"$b7"J?$,A4$F$N%G!<%?2E@$rDLkh$&$J3ji+$J6J@~$rM_$7$$$J$i**fit** GOJ/!"$'7m**plot** $N**smooth** %*%W%7%g%s$G$=$l$r9T$&Y-G7g&!#

8m:9I>2A (error estimates)

fit K*$$F"8m:9" $H$$$&MQ8l$O2 DN0[JC$?J8L.$GMQ$$$il^$9!#0l$D$O%G!<%?2E@$NAjBPE*$J=E$_$r7W;;$9kN$KMQ$$$il^$9!#$=li$O%Q%i%a!<%?$N8m:9$G$9!#

%G!<%?8m:9$O!"J?J};D:9$N=E$_IU$-$NOBWSSR!"$9Jo$A&V<+>h$r7hDj9k:]8D!9$N%G!<%?2E@$NAjBPE*$J=E$_$r7W;;$9kN$KMQ$$$il^$9!#$=li$O%Q%i%a!<%?$NI>2A$K1F6A$rM?$($^$9!#$=lO!"$'Ev$FOail$?4X?t$+iN8D!9$N%G!<%?2E@$NJP:9$,:G=*E*$JCM$KM?$($k1F6A$NBg$-$5$r7hDj$9k3HKhj$^$9!#@53N$J%G!<%?8m:9I>2A$,M?$($ilF$$$k>l9gKO!"%Q%i%a!<%?8m:9I>2AEy$N**fit** $,=PNO$9$k>pJs$OhjLr$KN)$DG7g&!#

statistical overview GO**fit** $N=PNO$N$$/D+$r@bL@$7!"'practical guidelines' KBP9$kGX7J$r=RYF$$$^$9!#

E}7WE*$J35MW (statistical overview)

Hs@~7A:G>.<+>hK!(Non-Linear Least-Squares; NLLS) $NM}O@$O!"8m:9$N@55,J,I[$NE@$+$i0lHIE*$K5-=R$5lF$$$^$9!#$9Jo$A!"F~NO%G!<%?$OM?$($il?J?6QH=$NJ?6Q$KBP9kM?$($il?I8=`JP:9$r;}$D$,%&%9(@55,)J,I[$K=>$&Jl=8CD$+$i$NI8K\$H2>Dj$5$l$^$9!#==J,Bg$-$$I8K\!"$=$7$FJl=8CD$NI8=`JP:9rCNk3HKBP7FO!"&V<+>hJ,I[E}7W$rMQ$$F!"DL>o!V&V<+>h!W$H8F$PlkCM$rD4$Yk3HKhj!VEvFOaNNI$5!W$r=RYk3H$,$G$-$^$9!#8:$i5l$?<+M3EY$N&V<+>h(&V<+>h$N<+M3EY$O!"%G!<%?2E@$N?t$+iEvFOail$k%Q%i%a!<%?$NB?$($?$i$$$[Ib10z$$??t)$,1.0 G"$k>l9g$O!"8=:_$N%Q%i%a!<%?$NCMKBP9$k4X?t$HM?$($il?I8=`JP:9KhCFFCD'IU1il?Jl=8CD$N!"%i%s%@%%s%W%k$KBP9k<+>hOBH,A4$/F1$8G"k3Hr0UL#7^$9!#

J,;6 = Am7WG"$k?t$(>e$2E}7W3XF1MM!"Jl=8CD$NI8=`JP:9$,Dj?t$GJ>l9g!"3FE@$O4QB,$5lkJP:9NOBH4|BT5l$kJP:9$NOB$rHf3S$9kH$-$K8DJL$K=E$_E1$5$lkY$-$G$9!#

:G=*CJ3,$G**fit** $O'stdfit'!"$9Jo$A;D:9$NRMS (<+>hJ?6QJ?J:,) $G5a$ailkEvFOa$NI8=`JP:9$H!"%G!<%?E@$,=E$_E1il$F$$$k>l9g$K'8:$i5l$?&V<+>h'$H$b8F$Plk;D:9$NJ,;6$r%l%](<%H7^$9!#K+M3EY(%G!<%?E@$N?t$+$iEvFO$a%Q%i%a!<%?$N?t$r0z$$??b$N)$O3liNI>2A$G;HMQ$5l^$9!#$J$<J$i!"%G!<%?2E@$N;D:9$N7W;;$G;H$olk%Q%i%a!<%?$F$8%G!<%?$+$iF@ikbN$@$+iG$9!#%G!<%?2E@$,=E$_$r;}$D>l9g!"**gnuplot**

$O$$o$f$kp-CM$r7W;;$7$^$9!#$=$lO=$N<+M3EY$H7k2L$N&V<+>hCM$KBP9k&V<+>hJ,I[$NN_@QJ,I[4X?tCM$r1 $+$i0z$$?CM$G$9!#0J2<;2>H: **practical_guidelines (p. 73)**!#3liNCM$O0J2<$NJQ?t$KBeF~$5l^$9:

```
FIT_NDF = <+M3EY$N?t
FIT_WSSR = =E$_$D$-;D:9$N<+>hOB
FIT_STDFIT = sqrt(WSSR/NDF)
FIT_P = p-CM
```

%Q%i%a!<%?$K4X$9$k?.Mj%l%Y%k$rI>2A9k3H$G!"Ev$FOa$+$iF@il$k:G>.$N&V<+>h$H!"MW5a$9$k?.Mj%l%Y%k$N&V<+>hNCMr7hDj9k$?$a$N&V<+>h$NE}7W$rMQ$$$k3H$,=PMh$^$9!#$7$+$7!"$=$Nh&JCMr@8@.9k%Q%i%a!<%?NAHr7hDj9kKO!"AjEvN5iJ$k7W;;$,I,MWHJkG7g$&!#

fit $O?.Mj6h4V$N7hDjhj$'$7$m!":G8e$NH?I|8e$NJ,;;6-6&J,;;69TNs$+$iD>$A$KF@$ilk%Q%i%a!<%?$N8m:9I>2A$rJs9p7^$9!#$3li$NI>2A$O!"I8=`JP:9$H$7$F7W;;$5$l$kNL$N;XDj$K4X$9$kE}7W>e$N>r7o$,!"0lHL$K$OHs@~7A:G>.<+>hLdBj$G$OJ]>Z$5$l$J$$$N$G$9$,!"@~7A:G>.<+>hLdBj$G$NI8=`8m:9(3F%Q%i%a!<%?$NI8=`JP:9)$HF1$8J}K!$G7W;;$5$l$^$9!#$=$7$F$=$N$?$a47Nc$K$h$j!"$3$l$i$O"I8=`8m:9"$H$+"A26aI8=`8m:9"$H8F$P$l$F$$$^$9!#A26aI8=`8m:9$O0lHL$K3Z4Q2a$.!"?.Mj%l%Y%k$N7hDj$K$O;H$&Y-GO$"$j$^$;s,!"Dj@-E*$J;XI8$H7FOLrKN)DG7g$&!#

:G=*E*$J2r$O!"2r$NHO0O$K$*$1$k%Q%i%a!<%?$NAj4X$r<($9Aj4X9TNs$b@8@.$7$^$9:$=$N<gBP3QMWAG!"9JoA<+8JAj4X$O>o$K1$G!"A4$F$N%Q%i%a!<%?$,FHN)Ji$PHsBP3QMWAG$O9Y$F0$K6a$$CMKJj^$9!#4 0A4$KB>$rJd$$$"$&2$D$NJQ?t$O!"Bg$-$5$,1$G!"4X78$,@5$NAj4X$+I$i$NAj4X$+KhCF@5$+I$iKJ$kId9f$r;}$DHsBP3QMWAG$r;}A^$9!#HsBP3QMWAG$NBg$-$5$,>.$5$$$[$I!"3F%Q%i%a!<%?$NI8=`JP:9$NI>2A$O!"A26aI8=`8m:9$K6a$/Jj$^$9!#

<BMQE*$J%,%$%I%i%$%s (practical guidelines)

8D!9$N%G!<%?E@$X$N=E$_E1$N3d$jEvFN4pACrCNC$F$$$kJi!"$=$l$,B,Dj7k2L$KBP9khj>\$7$>pJs$r;HMQ$5;$h$&$H9kG7g&!#Nc$($P!"4vD+$NE@$OB>$NE@$hjEvFKJkH$$$&3H$r9MN8$KF~lk3H$,2DG=$G$9!#$=7F!"$=$liO:G=*E*$J%Q%i%a!<%?$NCM$K1F6A$7$^$9!#

%G!<%?N=E$_IU$1$O!":G8e$NH?I|8e$N**fit** $NDI2C=PNO$KBP9k2r<a$N4pAC$rM?$($^$9!#3FE@$KF1Ey$K=E$_IU1r9TJ&K7Fb!"=E$_1$r;H$&$3Hhjb$'$7$mJ?6QI8=`JP:9$rI>2A9k3H$,!"&V<+>h$,Dj5AKhj=$&$G$"$kh&K!"WSSR $rL5<!85JQ?t$H9k3HKJj^$9!#

EvFO$aH?I|$N3FCJ3,$G!"Ev$FOa$N?J9T$NI>2A$K;H$&3H$,=PMh$k>pJs$,I=<($5l^$9('*' Oh$j>.$5$$WSSR $r8+$D1ilJ$+$C$?$3$H!"$=7F:F;n9T7F$$$k3H$r0UL#$7$^$9)!#sum of squares of residuals' (;D:9$N<+>hOB) $O!"'chisquare' (&V<+>h) Hb8FPl$^$9$,!"$3lO%G!<%?HEvFO$a4X?t$H$N4V$NWSSR $r0UL#$7$F$$$F!"**fit** O3lr:G>.2=7h$&$H7^$9!#$3$NCJ3,$G!"=E$_IU$1$5$l$?%G!<%?$KhC$F!"&V<+>h$NCM$O<+M3EY(=%G!<%?E@$N?t-%Q%i%a!<%?N?t)$K6aIU$/3H$,4|BT$5l^$9!#WSSR $OJd@5$5l?&V<+>hCM(WSSR/ndf; ndf = <+M3EY)!"$^$?OEvFOaI8=`JP:9(stdfit = sqrt(WSSR/ndf)) $r7W;;$9kN$K;H$ol^$9!#$=li$O:G=*E*$JWSSR KBP7$F%l]!<%H$5l^$9!#

%G!<%?$,=E$_IU$1$5lF$$$J1l$P!"stdfit $O!"%f!<%6$NC10LGN!"%G!<%?HEvFO$a4X?t$NJP:9$NRMS (<+>hJ?6QJ?J}:,) KJj^$9!#

b7BEEv$J%G!<%?8m:9$rM?$(!"%G!<%?E@$,==J,B?$/!"%b%G%k$,@5$7$1lP!"Jd@5&V<+>hCMO[$\1$KJj$^$9(>\:Y$O!"E,Ev$JE}7W3X$NK\$N'&V<+>hJ,I['$N9`$r;2>H7F$/$@$5$$)!#3N>19g!"3N3MWK=q$+$l$F$$$k3$H0J30$K!"%b%G%k$,%G!<%?$KIl$/$iNI/EvF^CF$$$k$+$r7hDj9k$?$a$NDI2C$N;n83J}K!$,$$/D+$"$j$^$9!#

Jd@5&V<+>h$,1$hjOk+KBg-$/$JC?!"$=$l$OIT@5$J%G!<%?8m:9I>2A!"@55,J,I[7J$$%G!<%?8m:9!"%79%F%`>e$NB,Dj8m:9!"8IN)$7$?I8K\CM(outliers)!"$^$?$ONI$/$J$$%b%G%k4X?t$J$I$N$?a$G$7$g$&!#NcS($P**plot 'datafile' using 1:($2-f($1))** $J$I$H$7$F;D:9$rIA2h$9$k$3$H$O!"$=$l$i$N%79%F%`E*$J798~$rCNk?a$N<j$,$+$jHJJCF7$^$9!#%G!<%?E@$H4X?t$NN><T$rIA2h$9k3HO!"B>$N%b%G%k$r9M$($?a$N<j$,$+$jHJkG7g$&!#

F1MM$K!"1.0 hj>.$5$$Jd@5&V<+>h$O!"WSSR $,!"@55,J,I[$9$k8m:9$r;}$D%i%s%@%`$J%5%s%W%k$H4X?t$KBP7F4|BT5lkbNhjb>.$5$$$3Hr0UL#7^$9!#G!<%?8m:9I>2A$,Bg$-$9$.$kN+!"E}7WE*$J2>D;$,@5$7$/$J$$$N$+!"$^$?$O%b%G%k4X?t$,0lHLE*$9$.$F!"Fb:_E*798~$K2C$($FFC<l$J%5%s%W%kKh$kJQF0$NEvFOaKJC$F$$$kNG7g$&!#:G8e$N>19g$O!"$h$j%7%s%W%k$J4X?tK9lP&$^/9T$/G7g&!#

EvFOaNp-CM$O!"<+M3EY$H7k2L$N&V<+>hCM$KBP9k&V<+>hJ,I[$NN_@QJ,I[4X?tCM$r1 $+$i0z$$?CM$G$9!#3l$O!"Ev$FOaNNI5Nb$N5$7$rDs6!$7$^$9!#p-CM$NHO0O$O0 $+$i1 $^$G$G!"p-CM$,HF$b>.$5$$!"$"$k$$

$O&H$FbBg-$$>19g$O! "%b%G%k$,%G! <%?H=$N8m: 9$rAcsH5-=R7F$$J$$3Hr0UL#7^$9! #>e$G=RY?h&$K! "$3$1$O%G! <%?$KLdBj$,$"$k$+! "8m: 9$+%b%G%k$KLdBj$,$"$k! "$^$?O=1iNAH_9go;JN$@$m$&$H;W$$^$9! #p-CM$,>.$5$$3HO! "8m: 9$,2a>.I>2A$5$1$F$$kNG! "hC$F:G=*E*$J%Q%i%a! <%?8m: 9$r%9%1! <%kJQ49$9Y-$@$m$&$H$$&3H$r0UL#$9kG7g$&! #0J2<$b;2>H:**set fit errorscaling (p. 122)**! #

I8=`E*$J%(%i! <$r! "%Q%i%a! <%?$NIT3ND j@-$K4X9k! "$"$khj8=<BE*$JI>2A$K4X78IU1k3H! "$*$h$SAj4X9TNs$N=EMW@-$rI>2A$9k3H,G-kh$&$KJkA0$K! "$"J?$O **fit** $H! "$=1rE,MQ7h$&$H9k$"$k<o$NLdBj$K47$1$F$*$/I,MW$,$"kG7g$&! #

fit $O! "BgDo$NHs@~7A:G>.<+>hK!$N<BAu$G$O6&DL$7$F! "5wN%$N<+>h(y-f(x))**2 $N=E$_IU$-$NOB$r:G>.2=$7h&H9k3HKCm0U7F$/$@$5$$! #$=$1$O! "x NCMN"8m: 9" $r7W;;$K4X7FOIsJJ}K!$bM?$(FO$*$i$:! "C1$Ky $K4X$9$kI>2A$N$_$G$9! #$^$?! ""8IN)E@" (@55,J,I[$N%b%G%kN+$i30$1$F$$k%G! <%?E@) $O>o$K2r$r0-2=$5$;$k2DG=@-$,$"j^$9! #

@)8f (control)

%3%^s%I **fit** $N@_Dj$O! "**set fit** $G@)8f$7$^$9! #0JA0$N **gnuplot** $N%f! <%6JQ?t$O! "%P! <%8%g%s5 $GHs?d>)$HJC$F$$$^$9! #0J2<;2>H:**fit control variables (p. 74)**! #

gnuplot $N5/F0A0$K **fit** $K1F6A$rM?$($kh&$KDj5A$G$-$kB?$/$N4D6-JQ?t$,$"j^$9! #0J2<;2>H: **fit control environment (p. 74)**! #

@)8fJQ?t (control variables)

$3$3$G@bL@$9$k%f! <%6Dj5AJQ?t$O! "Hs?d>)$G$9! #0J2<;2>H: **set fit (p. 122)**! #

%G%U%)%k%HNbCH$b>.$5$$?t;z$N8B3&(1e-5) $O! "JQ?t

FIT_LIMIT

$GJQ99$G$-$^$9! #;D:9$NJ?J}<+>hOB$,2 DNH?I|%9%F%C%W4V$G! "3N?tCMhj>.$5$$?t7+JQ2=7J$+$C$?>19g! "Ev$FOa%k! <%A%s$O! "$3$1$r'<}B+7?' $H8+$J7^$9! #

H?I|?t$N:GBgCM$OJQ?t

FIT_MAXITER

$G@)8B$5$1$^$9! #0 ($^$?$CDj5A7J$>19g) $O@)8BL5$7$r0UL#$7$^$9! #

99K=$N%"%k%4%j%:%`$r@)8f$7$?$>19g$G! "$+$D Marquardt-Levenberg %"%k%4%j%:%`$rNI$/CN$C$F$$k>19g$O! "$5iK$=$1$K1F6A$rM?$($kJQ?t$,$"j^$9! #**lambda** (&K) $N:G=i$NCM$O! "DI>o ML 9TNs$+$i<+F0E*$K7W;;$5$1$^$9$,! "$b7=1r$"$i+8aMQ0U7?CM$K%;%C%H$7$?$1$1$P

FIT_START_LAMBDA

$K%;%C%H$7F/$@$5$$! #FIT_START_LAMBDA $r0 0J2<$K%;%C%H9k$H! "<+F0E*$K7W;;$5$1kh$&$KJj$^$9! #JQ?t

FIT_LAMBDA_FACTOR

$O! "&V<+>h2=$5$1$?4X?t$,A}2C! "$"$k$$$O:>/9kKD1F **lambda** $,A}2C$"$k$$$O:>/9k0x?t$rM?$($^$9! #FIT_LAMBDA_FACTOR $r0 H9kH! "$=1O%G%U%)%k%H$N0x?t 10.0 $,;HMQ$5$1$^$9! #

fit KOFIT_ $+$i;O$^$kJQ?t$,B>$Kb"j^9+$i! "%f! <%6Dj5AJQ?t$H7FO=Nh$&$JL>A0$G;O$^$kJQ?t$O;HoJ$$$h$&$K9kN,0BA4G7g&! #

JQ?t FIT_SKIP $H FIT_INDEX $O! "0JA0$NHG$N **gnuplot** $N! "**gnufit** $H8F$P1F$$?**fit** %Q%C%A$G;H$o1F$$?bNG! "8=:_$O;HMQ$5$1$F$$^$;$s! #FIT_SKIP $N5!G=$O%G! <%?%U%!%$%k$KBP9k**every** ;XDj;R$GMQ0U$5$1$F$$^$9! #FIT_INDEX $OJ#?tEv$FOaK! (multi-branch fitting) $G;H$o1F$$?bNG9$,! "1 JQ?t$NJ#?tEvFO$aK!$O! ":#GO5?;w3 <!85EvFOaH7F9TJo1F$$F! "$=$3GO;^$N;XDj$K$O2 JQ?t$H**using** $,;H$o1F$$^$9! #0J2<;2>H: **fit multi-branch (p. 75)**! #

4D6-JQ?t (control environment)

4D6-JQ?t$O **gnuplot** $,N)$A>e$,$kA0$KDj5A$7J1lPJj$^$;$s! #$=$N@_DjK!$O%*%Z%l! <%F%#%s%0%7%F%`$K0MB8$7$^$9! #

FIT_LOG

$O! "Ev$FOa$N%m%0$,=q$+$1$k%U%!%$%kL> ($*$h$S%Q%9) $rJQ99$7$^$9! #%G%U%)%k%HGO! ": n6H%G%#%1%/%H%j>e $N "fit.log" HJCF$$$^$9! #$=$N%G%U%)%k%H$NCM$O%3%^%s%I **set fit logfile** $r;H$C$F>e=q$-G-$^$9! #

FIT_SCRIPT

$O! "%f!<%6$,CfCG7?8e$K<B9T$9$k%3%^%s%I$r;XDj7^$9! #%G%U%)%k%H$G$O **replot** G9$,! "**plot** $d **load** %3%^%s%I$H$9$1$P! "Ev$FOa$N?J9T>u67$NI=< ($r%+%9%?%^%$:9kNKJXMxG7g&! #$=$N@_Dj$O! "**set fit script** $r;H$C$FJQ99$G$-$^$9! #

J#?tNEvFOa (multi-branch)

J#?tEvFO$aK! (multi-branch fitting) GO! "J#?t$N%G!<%?=89g$r! "6&DL$N%Q%i%a!<%?$r;}$DJ#?t$N1JQ?t$N4X?t$K! "WSSR $NAmOB$r:G>.2=9k3HKhCFF1;~KEvFOak3H,=PMh$^$9! #3F%G!<%?=89gKBP9$k4X?t$H%Q%i%a!<%?(;^) $O'5?;wJQ?t' $r;H$&3H$GA*Br$G$-$^$9! #Nc$ ($P! "%G!<%?9THV9f(-1;'%G!<%?Ns' $NHV9f) $^$?$O%G!<%?%U%!%$%kHV9f(-2) $r2 $DL\$NFHN)JQ?tH7$^$9! #

Nc: 2 DN;X?t8:?j7Az=f(x) $,M?$ (i1$F$$$F! "$=$1$>$10[Jk%G!<%?=89g$r5-=R$7$F$$$k$,! "6&DL$7$?8:?j;~4V$r;}$A! "$=$N%Q%i%a!<%?$NCM$rI>2A$9$k! #%G!<%?%U%!%$%k$,x:z:s $N7A<0$G$"$C$?$H9k$H! "$3$N>19g0J2<$Nh&K9$1$P$h$$! #

```
f(x,y) = (y==0) ? a*exp(-x/tau) : b*exp(-x/tau)
fit f(x,y) 'datafile' using  1:-2:2:3  via a, b, tau
```

hjJ#; (JNcK$D$$$F$O! "%G%b%U%!%$%k "fit.dem" $G;H$o1k "hexa.fnc" $r;2>H$7F/$@$5$$! #

b7=>B0JQ?t$N%9%1!<%k$K:9$,$"$k>19g! "C10L$N=E$_IU$1GO1 DN;^$,;YG[$7F7$^$&2DG=@-$,$"kN$G! "E,Ev$J=E$_IU$1$,I,MW$KJj$^$9! #3F;^$r%P%i%P%i%KEv$FOakN$KJ#?tEv$FOaK!$N2r$r=i4|CMH7$FMQ$$$kNO! "A4BN$r9g$o$;$?2r$N3F;^$KBP9kAjBPE*$J1F6A$K4X9kI=< ($rM?$ (k3HKJkG7g&! #

=i4|CM (starting values)

Hs@~7AEvFOaO! "Bg0hE*$J:GE,CM(;D:9$N<+>hOB (SSR) $N:G>.CM$r;}$D2r) XN<}B+$OJ]>Z$O7^$;s,! "6I=jE*$J6K>.CM$rM?$ (k3HOG-$^$9! #$=$N%5%V%k!<%A%sO=1r7hDj9kJ}K!$r2?$b;}$A9g$o$;$F$$$J$$$N$G! "$3$1$,5/3C$?$+I&$+$rH=CG9kNO$"$J$?$N@UG$$HJj$^$9! #

fit $O! "2r$+$i1s$/$+$i;Oak$H<:GT$9k+bCNl$^$;s7! "7P7P$=$1$O5/$3$jF@$^$9! #1s$/$H$$$&NO! "SSR $,Bg$-$/! "%Q%i%a!<%?$NUQ2=KBP7F=$NUQ2=$,>.$5$$! "$"$k$$$O?tCME*$KIT0BDj$JNN0h(Nc$ ($P?tCM$,Bg$-$9$.$FIbF0>.?t$N7e$"U1$r5/$3$9) $KE~C#$7F7$^$C$F! "$=$N7k2L"L$Dj5ACM(undefined value)" $N%a%C%;!<%8$+**gnuplot** $NDd;_$r0z$-5/$3$7$F7^$&$h$&$J>19g$r0UL#$7$^$9! #

Bg0hE*$J:GE,CM$r8+D1$k2DG=@-$r2~A1$9$kKO! ":G=iNCMr$=$N2r$K>/$J$/$Hb[$\6a$/$K<h$kY-G7g&! #Nc$ ($P! "$b$72DG=$JiP017eJ,NBg-5NHO0OF'b$G! #:G=i$NCM$,2r$K6a$$$[$IB>$N2r$G=*N;$7F7$^$&2DG=@-ODc/Jj$^$9! #:G=iNCMr8+D1$k0l$D$NJ}K!$O! "%G!<%?HEvFOa4X?t$rF1$8%0%i%U$N>e$KIA2h7FE,Ev$J6a$5$KC#$9k^$G! "%Q%i%a!<%?$NCM$rJQ99$7$F **replot** 9k3H$r7+jJV9$3HG$9! #$=$NIA2h$O! "h/$J$$EvFOaN6K>.CMGEvFOa$,=*N;$7$?$+I&$+$r%A%'%C/9kNK$bM-MQ$G$9! #

bAms! "E,EY$KNI$$EvFOa,! ""$=$1hj$h$$" EvFO$a($"$k2~NI$5l?EvFOaNNI5N4p='KhCFFCD'IU1il?E}7W3XE*$J0UL#$G! "$"$k$$$O$=$N%b%G%kNh$jE,@Z$J2rG"$k! "$H$$$&J*M}E*$J0UL#$G) $,B8:_$7$J$$$3HN>ZL@KOJj$^$;$s! #LdBj$KhCFO! "3F%Q%i%a!<%?$N0UL#$N$"$kHO0O$r%+%P!<$9kh$&$JMM!9$J=i4|CM$N=89gKBP7$F **fit** 9k3H,K>$^$7$$$+bCNl$^$;$s! #

%R%s%H (tips)

$3$3GO! "**fit** $r:GBg8B$KMxMQ9k?a$K$$/$D+3P$ (F*$/$Y$-%R%s%H$r>R2p7^$9! #$=1iiOAH?%E*GO$J$$$N$G! "$=$NK\<A$,7_9~$'$^$G2?2s$bh/F IsG$/$@$5$$! #

fit $N0z?t$N **via** KO! "2 DNBg$-$/0[JkL\E*N?a$N2 DN7A<0$,$"j^$9! #**via "file"** $N7A<0$O! "%P%C%A=hM}(HsBPOC7?GN<B9T$,2DG=) $G:G$bNI$/;H$o$1! "$=$N%U%!%$%kNCfG=i4|CM$rM?$ (k3H,G-$^$9! #

via var1, var2, ... $N7A<0$CBPOC7?$N<B9T$GNI$/;H$o$l!"%3%^%s%I%R%9%H%j$N5!9=$,;H$C$F%Q%i%a!<%?%j%9%H$NJT=8$r9T$J$!"Ev$FOa$r<B9T$7$?$j!"$"$k$$O?7$7$=i4|CM$rM?$($F<!$N<B9T$r9T$JC?j7$^$9!#3lOFq7$LdBj$KBP7FCFCKM-MQ$G!"A4$F$N%Q%i%a!<%?$KBP7F1EY$@$1EvFOarD>@\<B9T7F$b!"NI$=i4|CMGJ1lP&$^$/$$+$J$$3H,5/3jF@k+iG$9!#$=lr8+D1kK$O!"$$/D+$N%Q%i%a!<%?$N$_$KBP7F2?2s$+H?I|$r9TJ!":G=*E*KOA4FN%Q%i%a!<%?KBP9$k1EY$NEvFOa,$&$^$/$$/H3mK==J,6a$/$Jk^G=lr7+jJV9$3$H$G$9!#

EvFOar9TJ&4X?t$N%Q%i%a!<%?4V$K6&DL$N0MB84X78$,$J$$3HO3NG'7F$*$$F$/$@$5$$!#Nc$($P!"a*exp(x+b) rEvFOa$K;H$CFO$$1$^$;$s!#$=lOa*exp(x+b)=a*exp(b)*exp(x) $@$+iG$9!#$hCF3N>l9g$Oa*exp(x) $^$?$Oexp(x+b) $r;H$CF/$@$5$$!#

5;=QE*J*OC @dBPCM$,:G$bBg$-$$%Q%i%a!<%?$H:G$b>.5%Q%i%a!<%?NHf,Bg$-$$$DxEvFOaN<}B+OCY/Jj$^$9!#$=$NHf$,!"%^%7%s$NIbF0>.?t$N@:EY$N5U?t$K6a$$$+!"$^$?O=$l0J>e$JiP!"$[$\$:CH<}B+7J$$$+<}B+9kA0$K<B9T$,CfCG9kG7g&!#hCF=Nh$&$J>l9g$O!"$=$N4X?t$ND5AGNc($P'parameter'$r'1e9*parameter'K9kH$+!":G=i$NCM$r1e9 $G3d$kH+7F3lrHr1kh$&$K2~NI9k$+!"$^$?$O**set fit prescale** $G%Q%i%a!<%?$N=i4|CM$K=>$CF=$N%9%1!<%kJQ4$9$rFbIt$Gdi;$k5!G=$rMQ$$k$+!"$N$$:l+$,I,MW$G7g$&!#

b7!"4X?t$r!"Ev$FOa$k%Q%i%a!<%?$r78?tH9$k!"C1=c$J4X?t$N@~7A7k9g$G=q1kJi!"$=$lOHFb$$$$$N$Q@'Hs$=$&$7F/$@$5$$!#2?8NJi!"LdBj$,$bOdHs@~7AGO$J$$$N$G!"H?I|$O>/$J$$2s?t$G<}B+$9kG7g$&!#$b7+7?i?C?0l2sG9$'$+b7l^$;$s!#

<B:]$N<B83$N9V5AGO%G!<%?2r@OKBP9$k$$/D+$N;X<($,M?$($i$l!"$=lG%G!<%?XN:G=i$N4X?t$NEvFOa,9TJcl^$9!#$b7+9k$H!"4pACM}O@$NJ#?t$NB&LL$KRHD:$DBP1~$9$kJ#?t2s$N%W%m%;%9$,I,MW$+bCNl$^$;s,!"$=$7F=li$N4X?t$NEvFOaN%Q%i%a!<%?$^$?$C>pJs$r<h$j=P$9G7g&!#7+$7!"**fit** $r;H$($P!"5a$a$k%Q%i%a!<%?$N;kE@$+$iD>@\$b%G%k4X?t$r=q$/3HKh$j!"$=lO7P7P1 2s$G:Q$'NG$9!#;~!9$OhjFq$7$$EvFO$aLdBj$N7W;;%3%9%H$,$+$+$j$^$9$,!"%G!<%?2JQ4$9b+Jj$N3d9g$GHr1k3H$,=PMh$^$9!#$b$7$3l,!"EvFO$a4X?t$NC1=c2=$K4X$7$F!"A0$NCJMn$HL7=b$7Fk$H;W$&Ji!"$=$l$O@52r$G$9!#

"singular matrix" $N%a%C%;!<%8$O!"3N Marquardt-Levenberg %"%k%4%j%:'$N%k!<%A%s$,!"<!$NH?I|$KBP9k%Q%i%a!<%?NCMN7W;;$,=PMh$J$$$3Hr0UL#7^$9!#$3$N>l9g!"JL$J=i4|CM$+$i;Oak$+!"4X?t$rJL$J7A$G=q$-D>$9$+!"$h$j4JC1$J4X?tK7F_F/$@$5$$!#

:G8e$K!"B>$NEvFO$a%Q%C1!<%8(fudgit) $N%^%K%e"%k$+$i!"$3li$NJ8=q$rMWLs9kh&$J$$$0zMQ$r>e$2$^$9:"Nonlinear fitting is an art! (Hs@~7AEvFO$aK!$O7]=Q$@!)"

Help

help %3%^%s%I$O!"AH$_9~$_%X%k%W$rI=<(7^$9!#$"$k9'$K$D$$F$N@bL@$r;XDj7?$$$H$-$K$O!"<!$N=q<0$r;H$C$F2<$5$$:

```
help {<9'L\L>>}
```

b7<9'L\L>>$,;XDj$5lJ$+$C?>l9g$O!"**gnuplot** KD$$F$N4JC1$J@bL@$,I=<($5l^$9!#;XDj$7$?9'L\$K$D$$F$N@bL@$,I=<(5l$?8e!"$=lKBP9k:YL\$N%a%K%e!<$,I=<($5$l!"$=$N:YL\L>$rF~NO9k3HG:YL\$KBP9k%X%k%W$rB3$1k3H,G-$^$9!#$=$7$F!"$=$N:YL\$N@bL@$,I=<($5l?8e$K!"$5iJ$k:YL\L>$NF~NO$rMW5a$5lk$+!"$^$?$O1$DA0$N9'L\$N%l%Y%kXLaj$^$9!#3l$r7+$jJV9Hd,$F!"**gnuplot** $N%3%^%s%I%i%s%X%HLa$j$^$9!#

$^$?!"5?LdId(?) $r9'L\$H7F;XDj9k$H!"8=:_$N%l%Y%k$N9'L\$N%j%9%H$,I=<($5l^$9!#

History

%3%^%s%I **history** $O!"%3%^%s%IMzNr$N0lMw$rI=<($7$?$j!"J]B8$7$?$j!"0lMw$NCf$N%3%^%s%I$r:F<B9T7?j7$^$9!#3N%3%^%s%I$N5sF0$rJQ$($kKO!"0J2<;2>H **set history (p. 129)**!#

Nc:

```
history               # MzNrA4BN$rI=<(
history 5             # MzNrFb$ND>A0$N5 $D$rI=<(
```

```
history quiet 5       # %(%s%H%jHV9f$J$7$GD>A0$N 5 $D$rI=<(
history "hist.gp"     # MzNrA4BN$r%U%!%$%k hist.gp $K=q$-=P$9
history "hist.gp" append # MzNrA4BN$r%U%!%$%k hist.gp $KDI2C$9$k
history 10 "hist.gp"  # D>A0$N 10 8D$r%U%!%$%k hist.gp $K=PNO
history 10 "|head -5 >>diary.gp" # %Q%$%W$GMzNr$r 5 $D=q$-=P$9
history ?load         # MzNrFb$N "load" $G;O$^$k$b$N$9$Y$F$rI=<(
history ?"set c"      # >e$HF1MM(J#?t$N81$O0zMQId$G0O$')
hi !reread            # "reread" $G;O$^$k:G$b?7$7$9T$r<B9T
hist !"set xr"        # >e$HF1MM(J#?t$N81$O0zMQId$G0O$')
hist !55              # 55 HVL\$NMzNr9'L\$N%3%^%s%I$r:F<B9T
```

If

```
?7$7$$=q<O:
     if (<condition>) { <commands>;
            <commands>
            <commands>
     } else {
            <commands>
     }
```

```
0JA0$N=q<O:
     if (<>r7o>) <%3%^%s%I9T> [; else if (<>r7o>) ...; else ...]
```

3N%P!<%8%g%s$N gnuplot $O!"if/else $N%V%m%C%/7A<0$r%5%]!<%H$7F$F$$^$9!#%-!<%o!<%I **if**, **else** $N8e$m$K3+;O%+%C%3"{" $,B3$/>19g!""}" $G=*N;$9$k%V%m%C%/$^GN9YFNJ8(J#?t$NF~NO9T$b2D) $K>r7oE*$J<B9T$,E,MQ$5l^$9!#if %3%^%s%I$OF~$l;R$K9k3HbG$-$^$9!#

8E$7A<0$N1 9T$N if/else J8$b$^$@%5%]!<%H5l$F$$$^9,!"?7$7$%V%m%C%/7A<0$N=q<0$H$O:.$<FO$$$1$^$;$s!#0J2<;2>H: **if-old (p. 77)**!#

If-old

gnuplot %P!<%8%g%s 4.4 $^$G$O!"if/else %3%^%s%I$NDIMQHO0O$O1 9TFb$KN1$^$C$F$$$^7?$,!"8=:_$OJ#?t9T$rCf%+%C%3{ } $GO0O$s$G=q$/3H$,$G$-$^$9!#8E$7A<0$b0l1~;D$5lF$$$^9,!"$=$l$OCf%+%C%3$N%V%m%C%/Fb$G;H$&3HOG$-$^$;$s!#

%-!<%o!<%I **if** $,"{" rHbJoJ$>19g$O!"<>r7o> $,??(%<%m$G$J$$) Ji$P<%3%^%s%I9T> $N%3%^%s%I(J#?t$b2D) $,<B9T$5$l!"56(%<%m) Ji$P%9%-%C%W$5l^$9!#$$:lN>19g$bF~NO9T$N:G8eKJk+!"**else** $,8=$lkH3m$^$G$=$l$,9T$ol^$9!#;$r;H$&&$HF1$89T$KJ#?t$N%3%^%s%ICV$/3H$,2DG=$G9,!">r7oIU$-$N%3%^%s%I(**if** $N9=J8<+BN) O=3G$O=*iJ$$$3HKCm0U7F$/$@$5$$!#

```
Nc:
     pi=3
     if (pi!=acos(-1)) print "?Fixing pi!"; pi=acos(-1); print pi
```

```
$r<B9T$9$k$H!"
     ?Fixing pi!
     3.14159265358979
```

```
$HI=<($5$l$^$9$,!"
     if (1==2) print "Never see this"; print "Or this either"
```

```
$H$9$k$H!"2?$bI=<($5$l$^$;$s!#
```

```
$=$NB>:
     v=0
     v=v+1; if (v%2) print "2" ; else if (v%3) print "3" ; else print "fred"
```

```
(2?EY$b:G8e$N9T$r7+$jJV$7$F$_$F$/$@$5$$!)
```

For

plot, **splot**, **set**, **unset** %3%^%s%IGO!"7+jJV7$N for @a$r;H$&$3HbG-$^$9!#3l$O!"4pK\E*$J%3%^%s%I$rJ#?t2s<B9T$9$k8z2L$r;}$A!"$=N*N*NN<B9TGO7+jJV7@)8fJQ?tKhCF?t<0$O:FI>2A$5l^$9!#**do** %3%^%s%I$G$O!"$IsJ%3%^%s%INsGb7+jJV7<B9T5;k3H,G-$^$9!#7+jJV7@a$O8=:_$O0J2<$N2 DN7A<0$r%5%]!<%H7F$$$^$9:

```
for [intvar = start:end{:increment}]
for [stringvar in "A B C D"]
```

Nc:

```
plot for [filename in "A.dat B.dat C.dat"] filename using 1:2 with lines
plot for [basename in "A B C"] basename.".dat" using 1:2 with lines
set for [i = 1:10] style line i lc rgb "blue"
unset for [tag = 100:200] label tag
```

7+jJV7$NF~$l;R$b%5%]!<%H$7$F$$$^$9:

```
set for [i=1:9] for [j=1:9] label i*10+j sprintf("%d",i*10+j) at i,j
```

5iJk@bL@KD$$$F$O!"0J2<;2>H: **iteration (p. 35)**, **do (p. 68)**!#

Import

%3%^%s%I **import** $O!"%f!<%6Dj4|4X?tL>$r30It6&M-%*%V%8%'%/%H$+$i<h$j9~$^lk4X?t$K7k$SD1$^$9!#3l$O!"gnuplot $GMxMQ2DG=$J4X?t$N@_Dj$r3HD%9k%W%i%0%$s5!9=$r9=@.7^$9!#

=q<0:

```
import func(x[,y,z,...]) from "sharedobj[:symbol]"
```

Nc:

```
# 4X?t myfun $r "mylib.so" $+ "mylib.dll" $+$i<h$j9~$s$G:n@.$9$k
# gnuplot $G$OIA2h!"$^$?$O?tCM7W;;$GMxMQ2DG=
import myfun(x) from "mylib"
import myfun(x) from "mylib:myfun"    # >e$HF1MM

# "theirlib.so" $+ "theirlib.dll" $GDj5A:Q$N4X?t theirfun $r:n@.
# 0[$J$kL>A0$GMxMQ2DG=
import myfun(x,y,z) from "theirlib:theirfun"
```

%W%m%0%i%'$O6&M-%*%V%8%'%/%H$H7FM?$($il?L>A0$K!"%*%Z%l!<%F%#%s%0%7%9%F%'$K=>$C$F ".so" $+ ".dll" $rDI2C$7!"$^$:$=$l$r%U%k%Q%9L>$H7F8!:w$7!"<!$K%+%l%s%H%G%#%l%/%H%j$+$i$NA*BP%Q%9L>$H7F8!:w7^$9!#%*%Z%l!<%F%#%s%0%7%9%F%'<+BN$b LD_LIBRARY_PATH $+ DYLD_LIBRARY_PATH NG0U$N%G%#%l%/%H%j$r8!:w7^$9!#

Load

load %3%^%s%I$O!";XDj$5l?F~NO%U%!%$%k$N3F9T$r!"$=l,BPOCE*$KF~NO$5l?$+$Nh&$K<B9T$7$^$9!#**save** %3%^%s%IGD$/$il?%U%!%$%k$O!"**load** 9k3H$,$G$-$^$9!#M-8z$J%3%^%s%I$N=q$+l?%F%-%9%H%U%!%$%k$rD/lP!"$=$l$O!"**load** %3%^%s%I$KhC$F!"<B9T$9k3H,G-$^$9!#**load** Cf$N%U%!%$%kNCfK5i$K **load** $^$?$O **call** %3%^%s%I$,$"$CFb9=$$$^$;$s!#%3%^%s%ICf$N%3%a%s%H$K$D$$$F$O!"0J2<;2>H: **comments (p. 24)**!#**load** 9kH-$K0z?t$rM?$($kJ}K!KD$$$F$O!"0J2<;2>H: **call (p. 66)**!#

=q<0:

```
load "<F~NO%U%!%$%kL>>"
```

F~NO%U% !%$%kL>$O0zMQId$G0O$^J1lPJj$^$;$s!#

load %3%^%s%I$O!"I8=`F~NO$+$i$N%3%^%s%I$NF~NO$N$?$a$K!"FCJL$J%U% !%$%kL>"-" $rMQ0U$7$F$$$^$9!#$3$l$O!"**gnuplot** $N%3%^%s%I%U% !%$%k$,!"$$/$D$+$N%3%^%s%I$rI8=`F~NO$+$i<u$1lU1k3H$r0UL#$7$^$9!#>\:YKD$$$F$O!"0J2<;2>H: **batch/interactive (p. 22)**!#

Unix Nh$&$K popen 4X?t$r%5%]!<%H$9kh$&$J%7%9%F%`$G$O!"'<' $G;O$^$k%U% !%$%kL>$K$9$k$3$H$G!"F~NO%U% !%$%k$r%Q%$%W$+$iFI$_9~$`3H$,$G$-$^$9!#

Nc:

```
load 'work.gnu'
load "func.dat"
load "< loadfile_generator.sh"
```

gnuplot XN0z?tH7$FM?$(il$?%U% !%$%kL>$O!"0EL[$N$&$A$K**load** %3%^%s%I$KhC$F<B9T$5l^$9!#$3li$O!";XDj$5l?=g$K%m!<%I$5$l!"$=$N8e**gnuplot** $O=*N;$7$^$9!#

Lower

=q<O:

```
lower {plot_window_nb}
```

%3%^%s%I **lower** (**raise** $NH?BP) $O!"**pm**, **win**, **wxt**, **x11** Ey$Ngnuplot $NBPOC7?=PNO7A<0$N<B9TCf$K!"IA2h%&%#%s%I%&$r2<(GX8e) $K2<$2$^$9!#IA2h%&%#%s%I%&$r!"%G%9%/%H%C%W>e$N%&%#%s%I%&^%M!<%8%c$N z J}8~$N%&%#%s%I%&$N=E$JjN2<KCV-$^$9!#

x11 $d**wxt** Nh$&$KJ#?t$NIA2h%&%#%s%I%&$r%5%]!<%H7F$$k>19g!"%G%U%)%k%HGO3$N%3%^%s%I$O$=$liNJ#?t$N%&%#%s%I%&$r9_=g$K2<$2!":G=i$K:n$il?%&%#%s%I%&$r0lHV2<$K!":G8e$K:n$il?%&%#%s%I%&$r0lHV>e$KJBY^$9!#%*%W%7%g%s0z?t$NIA2hHV9f$,M?$(il$?>19g!"$=lKBP1~9kIA2h%&%#%s%I%&$,B8:_$9lP$=$lN_$,2<$2il^$9!#

%*%W%7%g%s0z?t$O!"C10l$NIA2h%&%#%s%I%&$N=PNO7A<0!"$9Jo$A **pm** $H**win** GOL5;k5l$^$9!#

Pause

pause %3%^%s%I$O!"%3%^%s%I$KB3$/G$0U$NJ8;zNs$rI=<(7?8e!";XDj5l$?;~4V$^$?$O!"2~9T%-!<$,2!$5lk$^$GBTA^$9!#**pause** %3%^%s%I$O!"**load** MQ$N%U% !%$%k$H6&$K;HMQ9k$H!"JXMx$KJkG7g&!#

=q<O:

```
pause <time> {"<string>"}
pause mouse {<endcondition>}{, <endcondition>} {"<string>"}
```

<time> $O!"G$0U$NDj?t$^$?$O<0$G$9!#1 $r;XDj$9kH2~9T%-!<$,2!$5lk$^$GBTA^$9!#0 $r;XDj$9kH0l@ZBT$?$:!"@5$N?t$r;XDj9kH=$NIC?t$@$1BT$A$^$9!#<B9T4D6-$,IC0J2<$N;~4V;XDj$r%5%]!<%H$7$F$$J$>19g!"$=$N;~4V$O@0?t$NIC?t$K4]ail^$9!#**pause 0** $O**print** $HF1$8$G$9!#

;HMQ7F$$k=PNO7A<0$,**mousing** (%^%&95!G=) $r%5%]!<%H$7$F$$k>19g!"**pause mouse** $O!"%^%&9%/%j%C%/$,$"$k$+ctrl-C $,2!$5lk$^$GBTDh$&$KJj$^$9!#$=$&GJ$=PNO7A<0!"$^$?$O%^%&95!G=$,M-8z$KJCFJ$>19g**pause mouse** $O**pause -1** $HF1$8$G$9!#

0l$D!"$"$k$$$OJ#?t$N=*N;>r7o(endcondition) $,**pause mouse** $N8e$KM?$($il?>19g!"$=$N$&$ANI$N0l$D$Gpause $O=*N;$7$^$9!#;XDjG-$k=*N;>r7o$O!"**keypress**, **button1**, **button2**, **button3**, **close**, **any** $N$$:l+$G$9!#pause $,%-!<F~NO$KhC$F=*N;$7$?>19g!"2!$5l?%-!<$NASCII %3!<%I$OMOUSE_KEY $KJ]B8$5$l!"J8;z$=$l<+?H$O!"1 J8;zNJ8;zNsCMH7$FMOUSE_CHAR KJV5l^$9!#**keypress** $,=*N;>r7o$N0lDG$"$l$P!"%[%C%H%-!<(%-!<3d$jEv$F%3%^%s%I)$OL58zKJj^$9!#**buttons3** $,=*N;>r7o$N0lDG$"$l$P!"3HBg5!G=$OL58zKJj^$9!#

IN>19gGb%^%&9$N:BI8$OJQ?tMOUSE_X, MOUSE_Y, MOUSE_X2, MOUSE_Y2 $KJ]B8$5l^$9!#0J2<;2>H: **mouse variables (p. 41)**!#

Cm0U: **pause** %3%^%s%I$OOS XN%3%^%s%IG"$jIA2h$N0lItGO$J$$$N$G!"0[$J$k=PNOAuCV$G$O0[$J$kF0:n$r9k2DG=@-$,$"j^$9!#($3lO!"%F%-%9%H%R%0i%U%#%C%/%9$,!"$INh$&$K:.:_9k$+$Khj$^$9!#)

Nc:

```
pause -1    # 2~9T%-!<$,2!$5$l$k$^$GBT$D
pause 3     # 3 IGBT$D
pause -1  "B3$l$k$K$O return $rBG$C$F$/$@$5$$"
pause 10  "$3$l$OH~$7$/$J$$$G$9$+ ? 3 <!$N spline $G$9"
pause mouse "A*Br$7$?%G!<%?E@>e$GG$0U$N%\%?%s$r%/%j%C%/$7$F$/$@$5$$"
pause mouse keypress "M-8z$J%&%#%s%I%&Fb$G A-F $NJ8;z$rF~NO$7$F$/$@$5$$"
pause mouse button1,keypress
pause mouse any "G$0U$N%-!<!"%\%?%s$G=*N;$7$^$9"
```

0!<oG"$k"pause mouse key" $O!"M-8z$JIA2h%&%#%s%I%&FbGNG$0U$N%-!<F~NOKhCF:F3+5l$^$9!#FCJL $J%-!<F~NO$^GBTDh&K7$?$$>l9g$O!"0J2<$Nh&$J reread Kh$k%k!<%W$r;H$&$3H,G-$^$9:

```
print "IA2h%&%#%s%I%&Fb$G Tab %-!<$rBG$D$HI|5"$7$^$9!#"
load "wait_for_tab"
```

%U%!%$%k"wait_for_tab" $O0J2<$Nh&JbNG$9:

```
pause mouse key
if (MOUSE_KEY != 9) reread
```

Plot

plot $O **gnuplot** $G?^$rIA$/$?aN4pK\E*$J%3%^%s%I$G$9!#$=lO4X?t$d&G!<%?$N!"B?$/$N<dN`$N%0%i%UI=8=$rDs6!7^$9!#**plot** $O2<!85$N4X?t$d&G!<%?$rIA$/$N$K;H$o$l!"**splot** $O3<!85$N6JLL$d&G!<%?$N2<!85Ej1FrIA-$^$9!#

=q<O:

```
plot {<ranges>} <plot-element> {, <plot-element>, <plot-element>}
```

3FIA2hMWAG(plot-element) $O!"Dj5A(definition) $+4X?t(function) $+%G!<%?(data source) $N$$:l+1 DK!"%*%W%7%g%s$NB0@-!"=$@5;RJI$,$D$$?bN$G$9:

```
IA2hMWAG (plot-element):
     {<iteration>}
     <definition> | {sampling-range} <function> | <data source>
     {axes <axes>} {<title-spec>}
     {with <style>}
```

3FIA2hMWAG$N%0%i%UI=8=7A<O$O!"Nc$($P **with lines** $d **with boxplot** JINh$&$K%-!<%o!<%I **with** $G7hDj$7$^$9!#0J2<;2>H: **plotting styles (p. 47)**!#

IA2h9k%G!<%?$O!"1 DN4X?t$+$i@8@.5lkb$N(G^2pJQ?t%b!<%I(parametric) GO2 DN4X?t$+$i)!"$^$?$O0l$D$N%G!<%?%U!%$%k$+$iFI$_9~$^lkbN!"$^$?$O;vA0$KDj5A5l$?L>A0IU$-%G!<%?%V%m%C%/$+$iFI$_9~$^lkbN!"$N$$:l+$G$9!#%3%s%^%G6h@Zk3HG!"J#?t$N%G!<%?%U!%$%k!"%G!<%?%V%m%C%/!"4X?tJI$r1 DN plot %3%^%s%I$GIA2hG-$^$9!#0J2<;2>H: **data (p. 85)**, **inline data (p. 88)**, **functions (p. 96)**!#

4X?t!"JQ?t$NDj5A$NIA2hMWAG$O!"2hA|=PNO$r@8@.7^$;$s!#2<$N3 $DL\$NNc$r;2>H$7F/$@$5$$!#

Nc:

```
plot sin(x)
plot sin(x), cos(x)
plot f(x) = sin(x*a), a = .2, f(x), a = .4, f(x)
plot "datafile.1" with lines, "datafile.2" with points
plot [t=1:10] [-pi:pi*2] tan(t), \
     "data.1" using (tan($2)):($3/$4) smooth csplines \
              axes x1y2 notitle with lines 5
plot for [datafile in "spinach.dat broccoli.dat"] datafile
```

0J2<;2>H: **show plot (p. 148)**!#

<4 (axes)

<4 (axes) $O! "4 <cN '$NAH$,MxMQ$G$-$^$9; %-! <%o! <%I <axes> $O! "FCDj$ND>@~rI$N<4$K<\EY$r9g$o$;$k$+! " $H$$$&3H$rA*Br$9kN$K; H$o1^$9! #**x1y1** $O2<$N<4$H:8$N<4$r; XDj; **x2y2** $O>e$H1&$N<4$N; XDj; **x1y2** $O 2<$H1&$N<4$N; XDj; **x2y1** $O>e$H:8$N<4$N; XDj$G$9! #**plot** %3%^%s%I$G; XDj$5$1$?HOOC$O! "$3$N:G=i$N<4$NAH(2< $H:8) KN$_E,MQ$5$1$^$9! #

Binary

%P%$%J%j%G! <%?%U%!%$%k:

%U%!%$%kL>$N8emK **binary** $N%-! <%o! <%I$rM?$ (J1$1$P$$1$^$;$s! #%U%!%$%k7A<0$K4X$9$k==J,>\:Y$J>pJs $O! "%f! <%6$,%3%^%s%I%i%$%s$+$iM?$ (k+! "$^$?$O%5%]! <%H$7$F$$$k **filetype** $N%P%$%J%j7A<0$N%U%!%$%k$=$1 <+?H$+$iH4$-=P$5$1$k$+$9kI,MW,$"$j$^$9! #%P%$%J%j%U%!%$%kKO! "Bg$-$/2 DN7A<0! "binary matrix 7A <0$H binary general 7A<0$,$"$j$^$9! #

binary matrix 7A<0$O! "32 %S%C%HIEEE 5,3J$NIbF0>.?tCM(float) $,2 <!85G[Ns$N7AGJBS! "$=$1iN:BI8 CM$rI=$99THNs,DI2C$5$1$F$$$^$9! #plot %3%^%s%I$N **using** ; XDjK*$$F! "1 HVL\(column(1)) $O9TNs$N9T $N:BI8$r; 2>H$7! "2 HVL\(column(2)) ONsN:BI8$r; 2>H$7! "3 HVL\(column(3)) $O! "G[Ns$N$=$1iN:BI8$N>1 =j$KJ]B8$5$1$F$$$kCM$r; 2>H$7$^$9! #

binary general 7A<0$O! "G$0U8DNNsN%G! <%?$r4^$_! "$=$1iN>pJs$O%3%^%s%I%i%$%s$G; XDj$9kI,MW,$"$j $^$9! #Nc$ ($P **array**, **record**, **format**, **using** JI$G%5%$%:$d7A<0! "%G! <%?$N<!85$r; XDj$G$-$^$9! #B>$K$b! " %U%!%$%k%X%C%@FI$_Ht$P7?$j! "% (%s%G%#%"%s (endian) $rJQ99$9k?aNM-MQ$J%3%^%s%I$,$"$j$^$9$7! "G[CV! "%G! <%?$NJQ49$r9T$J$&%3%^%s%I$NAH$,$"j^$9! #$=1O! "0lMM$KI8K\2=$5$1$?%G! <%?$N>19g! "$=$N:BI8$, %U%!%$%k$K$O4^$^1J$$$3H,NI$/$"k+iG$9! #matrix %P%$%J%j%U%!%$%k$d%F%-%9%H%G! <%?$+$i$NF~NO$H0c $&$H3mG9$,! "general %P%$%J%j$O1,2,3 $H$$C$? **using** %j%9%H$G@8@.$5$1$kNsHV9f$r; Ho:! "Beoj$K1 NsL\$O%U%!%$%k$N1 NsL\! "$"$k$$$O **format** %j%9%H$G; XDj$5$1$?%b$N! "$KJj$^$9! #

5^6^$J binary %*%W%7%g%s$KBP9kBg0hE*$J%G%U%)%k%H$N@_Dj$b2DG=$G! "$=$1$O **(s)plot <filename> binary ...** %3%^%s%I$KM?$ ($k%*%W%7%g%s$HA4$/F1$8=q<0$G; XDj$G$-$^$9! #$=$N=q<0$O **set datafile binary ...** $G$9! #0lHIE*$J5,B'$H7F! "%G%U%)%k%H$N%Q%i%a! <%?$O%U%!%$%k$+$iH4$-=P$5$1$?%Q%i%a! <%?$G>e=q$-$5$1! " $=$1$O%3%^%s%I%i%$%s$G; XDj$5$1$?6&DL$J%Q%i%a! <%?$G>e=q$-$5$1$^$9! #

Nc$ ($P **array**, **record**, **format**, **filetype** $N **binary general** 7A<0$rFCDj$9kh$&$J%-! <%o! <%I$,2?$b$D$$$F $$J$1$1$P! "%G%U%)%k%H$N%P%$%J%j7A<0$O **binary matrix** $G$9! #

general %P%$%J%j%G! <%?$O! "FCJL$J%U%!%$%kL>'-' $r; H$C$F%3%^%s%I%i%$%s$+$iF~NO9k3HbG$-$^$9! #$7$+ $7! "$3$1$O%-! <%\! <%I$+$i$NF~NO$r0U?^7?bNGOJ/! "%Q%$%W$r; HCF%W%m%0%i%'$K%P%$%J%j7A<0$rJQ49 5;k?aNbN$G$9! #%P%$%J%j%G! <%?KO:G8e$rI=$95-9f$,$"j^$;sN$G! "gnuplot $O%Q%$%W$+$i%G! <%? rFI_9~$'>19g! "**array** ; XDj; R$G; XDj$7$??t$NE@?tKJk^GG! <%?rFI_9~$_B3$1$^$9! #>\:Y$K4X$7FO! " 0J2<;2>H:**binary matrix (p. 186)**, **binary general (p. 81)**! #

index %-! <%o! <%I$O! "%U%!%$%k%U%)! <%^%C%H$,1 DN%U%!%$%k$KD-1 DN6JLI7+5v5J$$$?$a! "%5%]! < %H$5$1$^$;$s! #**every** $d **using** %U%#%k%?$O%5%]! <%H$5$1$^$9! #**using** $O! "%G! <%?$,$"$?$+$b>e$N3 DAHN7A GFI^1?$+$Nh&$KF/$-$^$9! #

```
%P%$%J%j%U%!%$%k$N splot $N%G%b! #
```

General

%-! <%o! <%I **binary** $rC1FH$G; XDj7?>19g$O! "Hs0lMM$J3J;R$r7A@.$9$k:BI8>pJs$H! "3F3J;RE@GNCM$NN>J}$r ;}$D%P%$%J%j%G! <%?G"k3Hr0UL#$7(0J2<;2>H: **binary matrix (p. 186)**)! "B>$N7A<0$N%P%$%J%j%G! <%?$N >19g$O! "$=$N%G! <%?$N7A<0$r0UL#$9$kDI2C%-! <%o! <%I$r; XDj9kI,MW$,$"j^$9! #; DG0$J$,$i! "$3$1iNDI2C %-! <%o! <%I$N=q<0$OC1=cGO$"$j$^$;s,! "$=$1Gb general %P%$%J%j%b! <%I$O! "FC$KB?NL$N%G! <%?$r gnuplot KAwkh&$J%"%W%j1! <%7%g%s$K<hCF$OM-MQ$G$9! #

=q<0:

```
plot '<file_name>' {binary <binary list>} ...
splot '<file_name>' {binary <binary list>} ...
```

general %P%$%J%j7A<0$O! "%U%!%$%k9=B$$K4X9k>pJs$K4XO"$9$k%-! <%o! <%I! "$9Jo$A **array**, **record**, **format**,

filetype JI$r <binary list> Fb$KM?$ (k3HGM-8zKJj^$9! #$=$10J30$N>19g$O! "Hs01MM$J matrix %P%$ %J%j7A<0$H8+$J7^$9! #(>\:Y$K4X7F$O! "0J2<;2>H: **binary matrix (p. 186)**!#)

Cm0U: 0JA0NHGN gnuplot GO! "%P%$%J%j%G! <%?MQ$N%-! <%o! <%I$N2r<a$K! "**plot** $H **splot** GO>/$70c$$$,$" j^7?! #$=$N0UL#$N0c$&2U=j$O! ":#8eNHGN gnuplot GO! "$=$N01J}$"$k$$$ON>J}$,JQ99$5$1$k2DG=@-$,$" j^$9! #

gnuplot $O! "Nc$ ($P PNG 2hA|$Nh&$K40A4$K<+8J5-=R$5$1$kI8= 'E*$J%P%$%J%j%U%!%$%k7A<0NFI_9~$_J}K! $r$$/D+CNCF$$^$9! #$=$N0lMw$O! "BPOC2hLL$G **show datafile binary** $HF~NC$9k3HG;2>HG-$^$9! #$=$1$i0J30$NbNKD$$F$O! "35G0>e$O%P%$%J%j%G! <%?$O%F%-%9%H%G! <%?$HF1MM$K9M$ (k3H,G-$^$9! #3FE@KO! "**using** ;XDj$GA*Br5$1$k>pJs$NNs$,$"j^$9! #**format** J8;zNs$r;XDj7J$+$C$?>19g! "gnuplot $O%P%$%J%j?tCM$N?t$r<**using list**> $GM?$ (i1$k:GBg$NNsHV9fKEy7$/<h$j$^$9! #Nc$ ($P! "**using 1:3** H9kH3 Ns$:$D%G! <%?$,FI$_<hi1! "2 HVL\$N%bNOL5;k7^$9! #3FIA2h%9%?%$%kKO%G%U%)%k%H$N using ;XDj$," j^$9! #Nc$ ($P **with image** $O%G%U%)%k%H$G **using 1** $r! "**with rgbimage** $O%G%U%)%k%H$G **using 1:2:3** $r ;H$$^$9! #

Array

%P%$%J%j%U%!%$%k$NI8K\$NG[NsNBg-5r@_Dj7^$9! #:BI8$O gnuplot $,@8@.$7F/l^$9! #3FJ}8~$N<!85$r I=$9?t$r;XDj$7J1lP$$$1$^$;$s! #Nc$ ($P **array=(10,20)** $O! "2 <!85$G:G=i$N<!85J}8~(x) KO10E@! "2 HVL\$N<!85J}8~(y) KO20E@$NI8K\2=%G! <%?$,$"$k3H$r0UL#$7$^$9! #%U%!%$%k$N=*N;$^$G@G! <%?$,B3$/$3 Hr<(9NKIiNCM$r;H$($^$9! #%G! <%?<!85$,1$N>19g$O! "%+%C%3$O>JN,G-$^$9! #J#?t$N%G! <%?$N%5%$%:;XDj$rJ,N%9kNK! "%3%m%s$r;H$&3H$,G-$^$9! #Nc$ ($P **array=25:35** $O2$D$N1<!85%G! <%?$,%U%!%$%k NCfK$"$k3H$r0UL#7^$9! #

```
Cm0U:  gnuplot %P!<%8%g%s 4.2 $G$O array=(128,128) $H$$&=q<0$G
       $O$J$/! "array=128x128 $H$$&=q<0$r;HMQ$7$F$$^$7$?! #8E$$
       =q<0$O?d>)$5$1$F$$^$;$s! #
```

Record

3N%-! <%o! <%I$O **array** $HF1$8=q<0$G! "F1$85!G=$rDs6!$7$^$9! #7+$7**record** $O gnuplot $K:BI8>pJs$r<+F0@8@.5;$^$;$s! #$3$1$O! "$=$Nh&$J:BI8>pJs$,! "%P%$%J%j%G! <%?%U%!%$%kN"kNsK4^$^$1$F$$k>19gN?aNbN$G$9! #

Skip

3N%-! <%o! <%I$O! "%P%$%J%j%U%!%$%k$N$"$k6h2h$N%9%-%C%W$r2DG=K7$^$9! #Nc$ ($P! "$=$N%U%!%$%k,%G! <%?NN0h$N3+;C0LCV$NA0$K1024 %P%$%H$N%X%C%@$r;}Dh$&$J>19gKO! "0J2<Nh$&$K7?$$$H;W$&$G7g$&:

```
plot '<file_name>' binary skip=1024 ...
```

%U%!%$%k$KJ#?t$N%1%3!<%I$," $k>19g! "$=N=1>1KBP9k@hF,N:i70LCV$r;XDj$9k3H,G-$^$9! #Nc$ ($P! ":G=i$N%1%3!<%I$NA0$N512 %P%$%H$r%9%-%C%W$7! "2 HVL\! "3 HVL\$N%1%3!<%I$NA0$N256 %P%$%H$r%9%-%C%W9kKC0J2<Nh$&$K7^$9:

```
plot '<file_name> binary record=356:356:356 skip=512:256:256 ...
```

Format

%G%U%)%k%H$N%P%$%J%j7A<0$O! "C1@:EYIbF0>.?t(float) $,01$D! "$G$9! #$=$1rh$j=@Fp$K@_Dj9k$?$a$K! "$3$N format $GJQ?t$N%5%$%:$K4X9k>\:Y$J>pJs$r;XDjG-$^$9! #Nc$ ($P **format="%uchar%int%float"** $O! ":G=i$N using NsH7$FId9f$J$7J8;z7?JQ?t(unsigned char) $r! "2 HVL\$NNs$OId9f$D$-@0?t(int) $r! "3 HVL\$NNs $OC1@:EYIbF0>.?t(float) $r;XDj$7$F$$$^$9! #$b$7%5%$%:;XDj;R$N?t$,:GBgNs?thj>.$5$$>19g$O! ";D$jNNsN JQ?t%5%$%:$C0EL[N&AK:G8e$KM?$($?JQ?t%5%$%:KEy7$/<h$i1^$9! #

5i$K **using** ;XDjF1MM! "* J8;z$,$D$$$?FI$_<N$FkNsr=q<0$K;XDj$9k3HbG-$^$9$7! "7+$jJV$7%U%#!<%k%I$X$N2s?t;XDj$KhC$F0EL[$N7+jJV7$r;XDj$9k3HbG-$^$9! #Nc$ ($P! **"format="%*2int%3float"** $O! "3 DN<B?t%G! <%?rFI'A0$K! "2 DN@0?t%G! <%?rFI_<NF^$9! #;HMQ$G$-$kJQ?t%5%$%:$N01Mw$O! **"show datafile binary datasizes** $G8+$k3H$,$G$-$^$9! #$=1i$O! "$=1>1N%3%s%Q%$%k$KhCF=$N%P%$%H%5%$%:$HbK%^%7%s$K0MB8$9$kJQ?tL>$N%0%k! <%W$H! "%^%7%s$K0MB8$7$J$$JQ?tL>$N%0%k! <%W$KJ,$+$1$F$$$^$9! #

Endian

%U% !%$%k$N%P%$%J%j%G! <%?$N% (%s%G%#%"%s$O! "gnuplot $,F0:n$9$k%W%i%C%H% [! <% \$N% (%s%G%#%"%sHC0 [Jk>l9g hNI/$"$j$^$9! #$$$/D+$N;XDj$Ggnuplot $,%P%$%HrINh$&$K07$&$+$r@)8f$G$-$^$9! #Nc$ ($P**endian=little** $O! "%P%$%J%j%U%!%$%k$r! "$=$N%P%$%H$NJBS,>.$5$7e$+$iBg$-$7eXJBs$G$$$k$H8+$J5l$^$9! #%*%W%7%g %s$C0J2<$NbN$,;H$ ($^$9! #

```
little:  >.$5$7e$+$iBg$-$J7e$XJB$V
   big:  Bg$-$J7e$+$i>.$5$J7e$XJB$V
default:  compiler $HF1$8% (%s%G%#%"%s$H8+$J$9
swap (swab):  % (%s%G%#%"%s$rJQ9$9$k ($*$+$7$$$h$&$J$i$3$l$r
              ;H$C$F$_$F$/$@$5$$)
```

gnuplot $O! "%3%s%Q%$%k;~$K%*%W%7%g%s$,;XDj5l$F$$$l$P! ""middle" ($d"pdp") % (%s%G%#%"%s$b%5%]! <%H$G $-$^$9! #

Filetype

gnuplot $O! "$$$/D+I8=\E*$J%P%$%J%j%U%!%$%k7A<0$K$D$$$FOI,MWJ>pJsr=$N%U%!%$%k$+$iH4$-=P$9$3$H $,$G$-$^$9! #Nc$ ($P "format=edf" $O ESRF %X%C%@! <%U%!%$%k7A<0$N%U%!%$%kH7FFI_9~$_$^$9! #8=:_%5 %]! <%H$7$F$$$k%U%!%$%k7A<0$K$D$$$F$O! "**show datafile binary filetypes** $G8+$F$/$@$5$$! #

FCJL$J%U%!%$%k7A<0H7$F**auto** $,$"$j! "$3$N>l9g gnuplot $O%P%$%J%j%U%!%$%k$N3HD%;R$,! "%5%]! <%H$5lF $$$k7A<0$NI8=\E*$J3HD%;RG"k+$r%A%'%C%/$7$^$9! #

%3%^%s%I%i%$%s%-! <%o! <%I%O%U%!%$%k$+$iFI$_<h$k@_Dj$r>e=q$-9kNK;Hol! "%U%!%$%k$+iFI_<h$k@_Dj $O%C%U%)%k%H$N@_Dj$r>e=q$-7^$9! #0J2<;2>H**set datafile binary (p. 119)**! #

Avs **avs** $O! "<+F0E*$KG'<1$5$l$k2hA|%$%a! <%8KBP9$k%P%$%J%j%U%!%$%k$N7?$N0l$D$G$9! #AVS $OHs>cC1=c $J%U%)! <%^%C%H$G! "%"%W%j%1! <%7%g%s4VGdjHj9kN$K:G$bE,$7F$$$^$9! #$3lO! "2 DN long (xwidth $H ywidth) $H! "$=$N8eB3$/%T%/%;%kNNs+$i@.$j! "$=$N3F%T%/%;%k$O alpha/red/green/blue $N4 %P%$%H$+$i @.j^$9! #

Edf **edf** $O! "<+F0E*$KG'<1$5$l$k2hA|%$%a! <%8KBP9$k%P%$%J%j%U%!%$%k$N7?$N0l$D$G$9! #EDF $O ESRF %G! <%?%U%)! <%^%C%H (ESRF Data Format) $r0UL#$7$F$$$F! "$=$l$O edf $H ehf $NN>J}$N7A<0$r%5%]! <%H$7$F $$^$9 (8e<T$O ESRF Header Format)! #2hA|$N;HMQ$K4X9k>\$7$>pJs$C0J2<$G8+$D$+$kG7g&:

```
http://www.edfplus.info/specs
```

Png gnuplot $, png/gif/jpeg =PNGMQ$K libgd %i%$%V%i%j$r;H$&$h$&$K%$%s%9%H! <%k$5lF$$$k>l9g! "$=$l$i $N2hA|7A<0$r%P%$%J%j%U%!%$%kH7FFI_9~$\$3HbG-$^$9! #0J2<Nh$&$JL@<(E*$J%3%^%s%I

```
plot 'file.png' binary filetype=png
```

$r;H$&3HbG$-$^$9$7! "$"$i$+$8$a0J2<$Nh&$K@_Dj$7$F! "3HD%;R$+$i<+F0E*$K2hA|7A<0$r<+F0E*$KG'<1$5 $;$k3HbG$-$^$9! #

```
set datafile binary filetype=auto
```

Keywords

0J2<$N%-! <%o! <%I (keyword) $O! "%P%$%J%j%U%!%$%k$+$i:BI8$r@8@.9kH-KN$_E,MQ$5l^$9! #$D$^$j! " binary array, matrix, image $N8D! 9$NMWAG$rFCDj$N x,y,z $N0LCV$X$NG[CV$N@)8fN?aNbNG$9! #

Scan gnuplot $,%P%$%J%j%U%!%$%k$rINh&$KAv:$9k+!"$H$$$&3H$H<B:]$NIA2h$G8+$ilk<4$NJ}8~$H$N4V$N4X78KD$$$F$OB?$/$N:.Mp$,5/3jF@$^$9!#$=$N:.Mp$r8:$i9K$O!"gnuplot $O%P%$%J%j%U%!%$%k$r">o$K"E@/@~/LL!"$^$?$OB.$$/IaDL/CY$$!"$HAv:$9kH9M$($k$H$$$$G7g$&!#$3$N%-!<%o!<%I$Ognuplot $K!"$=$NAv:$NJ}8~$rIA2hFb$NIN:BI8J}8~(x/y/z) $K3d$jEvFk$+$r;XDj7^$9!#;XDj$O2 $D!"$^$?$O3 DNJ8;zNJBS$GI=8=$7!":G=i$NJ8;z$,E@$K!"<!$NJ8;z$,@~$K!"3 $DL\$NJ8;z$,LI$KBP1~7^$9!#Nc$($P!"**scan=yx** $O!":G$bB.$$Av:((E@$NA*Br) $Oy J}8~$KBP1~$7!"IaDL$NB.5NAv:((@~$NA*Br) $,x J}8~$KBP1~9k3H$r0UL#$7$^$9!#

IA2h%b!<%I$, **plot** $N>19g!";XDj$K$Ox $Hy $N2 DNJ8;z$r;H$&3H$,G-!"**splot** KBP7FOx, y, z $N3 DNJ8;z$r;H$&3H$,G-$^$9!#

3djEvF$K4X$7FO!"E@/@~/LL$+$iD>8r:BI8J}8~XN$_$K@)8B9kFbIt;v>pOJLK$"$j$^$;$s!#$3$NM}M3$G!"1_C1:BI8XN3djEvFN?aN;XDj;R$bMQ0U$5lF$$$F!"$=$liOD>8r:BI8$Nx, y, z $KN'w$7$?7A$Gt (3QEY), r, z HJCF$$$^$9!#

Transpose **scan=yx**!"$^$?$O **scan=yxz** $HF1$8$G$9!#9JoA!"3l$OF~NO;~$NAv:9T$N%T%/%;%k$X$N3d$jEvFK1F6A$rM?$($^$9!#I=<(9k:]$K2hA|$rE>CV9kKO!"0J2<Nh$&$K7F$_$F$/$@$5$$:

```
plot 'imagefile' binary filetype=auto flipx rotate=90deg with rgbimage
```

Dx, dy, dz gnuplot $,:BI8$r@8@.9k>19g!"$=$N4V3VO3li$N%-!<%o!<%I$G;XDj5l$?$bN,;HMQ5l$^$9!#Nc$($P **dx=10 dy=20** $Ox J}8~$K10!"y J}8~$K20 $N4V3V$GI8K\2=5l$?$3Hr0UL#7^$9!#**dy** $O **dx** $,$J1l$P;H$($^$;$s!#F1MM$K **dz** $O **dy** $,$J1l$P;H$($^$;$s!#$b$7%G!<%?$N<!8$5$,;XDj7?%-!<%o!<%I$N<!8$hjbBg$-$$>19g!";DjN<!8$J}8~$N4V3V$O!";XDj$5l?:G$b9b$$<!8NbNHF1$8CM$,;HMQ5l$^$9!#Nc$($P2hA|$,%U%!%$%k$+$iFI$_~$^$l!"**dx=3.5** N_;XDj5l$?>19g!"gnuplot $Ox J}8~$N4V3V$b y J}8~$N4V3V$b 3.5 $r;HMQ$7$^$9!#

0J2<$N%-!<%o!<%I$b:BI8$N@8@.;~$KN_E,MQ5l$^$9!#7+$7!"0J2<$NbN$Omatrix %P%$%J%j%U%!%$%k$K$b;H$ol^$9!#

Flipx, flipy, flipz %P%$%J%j%G!<%?%U%!%$%k$NAv:J}8~$, gnuplot $NAv:J}8~$H0lCW7J$$3H,$?$^Kj$^$9!#3liN%-!<%o!<%I$O!"$=l>$l x, y, z J}8~$N%G!<%?$NAv:J}8~$r5U8~$-$K7^$9!#

Origin gnuplot $OE>CV(transpose) $dH?E>(flip) K*$$F:BI8$r@8@.$9$k>19g!">o$KG[Ns$N:82<$NE@$,86E@$KJkh&K7$^$9!#9JoA!"%G!<%?$,!"E>CV$dH?E>$N9T$Jol$?8e$ND>8r:BI87O$NBh1>]8B$KMhkh$&$K7^$9!#

G[Ns$r%0%i%U$N$=$NB>$N>l=j$KG[CV7?$$>19g!"**origin** %-!<%o!<%I$G;XDj$7$?>l=j$Kgnuplot $OG[Ns$N:82<$NE@$r9go;$^$9!#$=$=$N;XDj$O!"**plot** GO2 DN:BI8$NAH!"**splot** GO3 DN:BI8NAHr;XDj7F$/$@$5$$!#Nc$($P **origin=(100,100):(100,200)** $O!"0l$D$N%U%!%$%k$K4^$^lk2 DN%G!<%?KBP9$k;XDj$G!"2<!85$NIA2h$KBP9k;XDj$G$9!#2 $DL\$NNcH7$F **origin=(0,0,3.5)** r"2k$H!"$3lO3<!85IA2hMQ$N;XDj$G$9!#

Center **origin** $H;w$F$$$^9,!"3N%-!<%o!<%I$G[Ns$NCf?4$,$3$N%-!<%o!<%I$G;XDj7?E@KJkh$&$KG[CV7^$9!#Nc$($P **center=(0,0)** Nh$&$K7^$9!#G[Ns$N%5%$:$, **Inf** NH$-$O center OE,MQ5l^$;$s!#

Rotate E>CV(transpose) $HH?E>(flip) %3%^%s%I$O:BI8$N@8@.$H:BI8<4$NJ}8~$K$"$k<o$N=@Fp@-$rM?$($F$/$l$^$9!#7+$7!"3QEY$K4X9k4OA4$J@)8f$O!"2<!85$N2sE>3Q$r5-=R7?2sE>3Q%Y%/%H%k$rM?$(k3HKhj9TJ&3H$,2DG=$KJj$^$9!#

%-!<%o!<%I**rotate** $O, **plot**, **splot** $NN>J}$G!"2<!85LIKBP7FE,MQ5l^$9!#2sE>$O:BI8J?LI$N@5$N3QEY$K4X$7$F9T$Jol$^$9!#

3QEY$O!"%i%8%"%sC10L$G9,!"pi $d degrees $NG\?t$H7F$N%i%8%"%s$G$bI=8=$G$-$^$9!#Nc$($P!"**rotate=1.5708**, **rotate=0.5pi**, **rotate=90deg** O9YFF1$80UL#$G$9!#

origin $,;XDj$5l?>19g!"2sE>$OJ?9T0\F0$NA0$K:82<$NE@$rCf?4$K7F9TJol^$9!#$=$l0J30$G$O2sE>$OG[Ns$NCf?4(**center**) $K4X$7$F9T$Jol$^$9!#

Perpendicular splot $K4X$7$F2sE>%Y%/%H%k$N@_Dj$,!"%Y%/%H%k$rI=8=9k3 DN?t;zNAHr;XDj9k3H$G<BAu$5lF$$$F!"3N%Y%/%H%k$O2<!85$Nxy J?LLKBP7$F8~$-IU1il?K!@~%Y%/%Hk (perpendicular) $rI=$7$F$$^$9!#$bAms=$N%G%U%)%k%H$O (0,0,1) $G$9!#rotate $H perpendicular $NN>J}$r;XDj9k3HKh$j!"3<!856u4VFb$GL5?t$NJ}8~$X%G!<%?$r8~$-IU1ilk3HKJj^$9!#

$^$::G=i$K2<!85$N2sE>$,9T$Jol!"$=$N<!$K3<!85$N2sE>$,9T$Jol$^$9!#D^$j!"R' r"$k3Q$Khk2x2 $N2sE>9TNs$H$7!"P $r(0,0,1) $r(xp,yp,zp) $X;R8a@~J}8~$K2sE>5;$k3x3 $N9TNs$H$7!"R' $r:8>e$NItJ,9TNsH7$F;}$A3,3@.J,$,1 G=$NB>$N@.J,$,0 G"kh$&$J9TNs (D^$jz<4<~$j$N2sE>9TNs) H9lP!"3NJQ49$rI=$99TNsKh$k4X78<0$Ov' = P R v HJj^$9!#$3$3G!"v $O%G!<%?%U%!%$%k$+$iFI$_9~$^l?3x1 $N0LCV%Y%/%H%k$G$9!#%U%!%$%k$N%G!<%?$,3<!85E*JbNGJ>19g$O!"O@M}E*$J%k!<%k,E,MQ5l$F3<!856u4VFb$N%G!<%?$H8+$J5l$^$9 (Nc$ ($P!"DI>o$Oz :BI8$O0 H5$l!"xy J?LIFb$N2<!85%G!<%?$H8+$J5l$^$9)!#

%G!<%? (data)

%U%!%$%k$KG<ail?N%;6E*$J%G!<%?$O!"**plot** %3%^%s%I%i%$%s>e$G!"$=$N%G!<%?%U%!%$%kL> (<datafile>) $rC10l0zMQId$^$?$OFs=E0zMQId$G0O$s$G;XDj$9k3HKhC$FI=< ($G$-$^$9!#

=q<0:

```
plot '<file_name>' {binary <binary list>}
                   {{nonuniform} matrix}
                   {index <index list> | index "<name>"}
                   {every <every list>}
                   {skip <number-of-lines>}
                   {using <using list>}
                   {smooth <option>}
                   {volatile} {noautoscale}
```

=$@5;R$N **binary**, **index**, **every**, **skip**, **using**, **smooth** $O!"$=l>lKJ,1F@bL@7^$9!#4JC1$K8@$&$H!"**binary** $O%G!<%?Ns$r%P%$%J%j%U%!%$%k+$i<hF@$G$-$kh&$K$7!"**index** $O%^%k%A%G!<%?=89g%U%!%$%k+iI$N%G!<%?=89g$rI=< (9kN+$rA*$S!"**every** $,!"0l$D$N%G!<%?=89g$+iI$NE@$rI=< (9kN+$rA*$S!"**using** $O0l9T$+iINNsr2r<a9kN+$r7hDj$7!"$=$7$F **smooth** $,!"C1=c$JJd4V$H6a;w$r9T$$^$9!#**splot** bh$/;w$?=q<0$r;H$$^9,!"**smooth** %*%W%7%g%s$O%5%]!<%H$7$F$$^;$s!#

%-!<%o!<%I **noautoscale** $O!"<+F0E*$K<4$NHO0O$,7hDj5l$k5!G=$,M-8zG"$k>19g$K!"3NIA2h$r9=@.$9$k%G!<%?E@$K$D$$F$O!"$=lrL5;k5;$k (<+F0=L<\5!G=$N7W;;BP>]$+$i30$9) h&K7$^$9!#

%F%-%9%H%G!<%?%U%!%$%k

%G!<%?%U%!%$%k$O!"0l9TKD$-/$J$/$H$b0l$D$N%G!<%?E@$r4^$`I,MW$,$"$j$^$9 (**using** $O0l9T$+$i0l$D$N%G!<%?%]%$%s%H$rA*$V3H$,$G$-$^$9)!## (VMS GO!) $G;O$^$k9T$O!"%3%a%s%HH7$F07$o$l!"L5;k$5l^$9!#3F%G!<%?E@$O!"(x,y) NAHrI=7^$9!#% (%i!<%P!<!"$^$?@^l@~I=< (IU% (%i!<%P!<$N **plot** GO (0J2<;2>H **errorbars (p. 95)**, **errorlines (p. 96)**)!"3F%G!<%?E@$O!"(x,y,ydelta), (x,y,ylow,yhigh), (x,y,xdelta), (x,y,xlow,xhigh), (x,y,xlow,xhigh,ylow,yhigh) $N$$:l+$r0UL#$7$^$9!#

Is$J>19g$G$b!"=q<0$N;XDj;R$, **using** %*%W%7%g%s$KhC$FM?$ (il$F$$$J1l$P!"%G!<%?%U%!%$%k$N3F9T$N?t;z$O!"%[%o%$%H%9%Z!<%9 (0lD^$?$OJ#?t$N6uGr$+%?%V) KhCF6h@Zil$F$$$kI,MW$,$"j^$9!#3$N%[%o%$%H%9%Z!<%9$O!"3F9TrNsN9'L\$K6h@Zj^$9!#$?$@$7!"Fs=E0zMQId$G0O$^l?%[%o%$%H%9%Z!<%9$ONs$N4*Dj$G$OL5;k$5$l!"$hCF<!Nh$&$J%G!<%?T$O3Ns!"$H8+J5l^$9:

```
1.0 "second column" 3.0
```

%G!<%?$O!";X?tIt$Ke, E $NJ8;z$rDl$?;X?tI=5-$G=q$+$l$F$$$F$b9=$$$^;$s!#%3%^%s%I**set datafile fortran** $,M-8z$J>19g$O!"fortran $N;X?t;XDj;Rd, D, q, Q $b;H$ ($^$9!#

I,MWG"kNO?@0lDNNs (y $NCM) N_$G$9!#b7x NCM,>JN,5l$?$i!"**gnuplot** O=lr0 $G;O$^$k@0?tCM$H7EMQ0U7^$9!#

%G!<%?%U%!%$%k$K$*$1$k%V%i%s%/9T (6uGr$H2~9T!"I|5"0J30$KJ8;z$r4^$^$J$$9T) $O=EMW$G$9!#

1 9T$N%V%i%s%/9T$O!"**plot** $KITO"B3$r;X< (7^$9;%V%i%s%/9T$KhC$F6h@Z$il?E@$O@~$G7kPlk3HO$"$j$^$;$s (line style $G=q$+lF$$$k>19gKO)!#

2 9T$N%V%i%s%/9T$O!"JL!9$N%G!<%?=89g4V$N6h@Zjr< (7^$9!#0J2<;2>H **index (p. 87)**!#

b7 autoscale $N>uBV$G$"$l$P(0J2<;2>H **set autoscale (p. 107)**)!"<4$OA4$F$N%G!<%?%]%$%s%H$r4^$ 'h&$K<+F0E*$K0z$-?-$P5l$F!"L\@9$j$,=q$+lk>uBVJi$PA4$F$NL\@9$j$,%^!<%/$5l^$9!#$3lO!"2 DN7k2L$r0z$-5/$3$7$^$9: i) **splot** GO!"6JLL$N3Q$CDlLL$N3Q$K0lCW7F$$$J$$3H,$"$j$^$9!#3N>19g!"=D$N@~$O=q$+$lk3HO$"$j$^$;$s!#ii) 2 <cN '$N<4GN!"F1$8x $NHC0O$N%G!<%?$NI=<($N:]!"b7x2 $N<4$KBP9kL\@9j,=q$+$l$F$$J$>19g$O!"x :BI8$,$"CF$$J$$3H,$"$j$^$9!#3l$Ox <4(x1) $OA4$F$NL\@9$jK^$G<+F0E*$K0z$-1d$P5lkN$KBP$7!"x2 <4O=$&$GOJ$$+iG$9!#<!$NNcG=$NLdBj$r8+k3H,G-$^$9:

```
reset; plot '-', '-' axes x2y1
1 1
19 19
e
1 1
19 19
e
```

3lrHr1kK$O!"**set autoscale** %3%^%s%I$N **fixmin**/**fixmax** %*%W%7%g%s$r;H$&3H$,$G$-$^$9!#$3lO!"<!$NL\@9$j$N9o$_$K9g$&h&$K<4$NHC0O$r<+F0E*$K3HD%9k5!G=$rL58z$K7^$9!#

%i%Y%k$N:BI8$HJ8;zNs$b%G!<%?U%!%$%k$+$iFI$_9~$'3H$,$G$-$^$9(0J2<;2>H **labels (p. 59)**)!#

Every

%-!<%o!<%I **every** $O!"IA2h$9$k%G!<%?r%G!<%?=89g$+$i<~4 |E*$K%5%s%W%j%s%0$9$k3H$r2DG=$K7^$9!#

$3$3GO!V%]%$%s%H!W$C%U%!%$%kCf$N1 DN9TKhCEDj5A5l$k%G!<%?$H$7!"$3$3$G$N!V%V%m%C%/!W$O!V%G!<%?!&%V%m%C%/!W(0J2<;2>H **glossary (p. 35)**) $HF1$8bN$r0UL#$9k3HH7^$9!#

=q<0:

```
plot 'file' every {<%]%$%s%HA}J,>}
                  {:{<%V%m%C%/A}J,>}
                    {:{<3+;O%]%$%s%H>}
                      {:{<3+;O%V%m%C%/>}
                        {:{<=*N;%]%$%s%H>}
                          {:<=*N;%V%m%C%/>}}}}}
```

IA2h9k%G!<%?%]%$%s%H$O!"<3+;O%]%$%s%H> $+$i<=*N;%]%$%s%H> $^$G<%]%$%s%HA}J,> $NA}2C$GA*$S!"%V%m%C%/$O<3+;O%V%m%C%/> $+$i<=*N;%V%m%C%/> $^$G<%V%m%C%/A}J,> $NA}2C$GA*S^$9!#

3F%V%m%C%/$N:G=i$N%G!<%?!"$O!"%U%!%$%kCf$N:G=i$N%V%m%C%/$HF1$8h&$K!"V0 HV!W$H?t$($^$9!#

%W%m%C%HG-J>pJs$r4^$'9T$b+%&%s%H$9k3HKCm0U7F2<5!#

$$/D+$N?t;z$O>JN,G-$^$9;A}J,$N%G%U%)%k%H$O1 !"3+;ONCMO:G=i$N%]%$%s%H$+:G=i$N%V%m%C%/!"$=$7$F=*N;$NCM$O:G8e$N%]%$%s%H$+:G8e$N%V%m%C%/$K@_j7^$9!#**every** $N%*%W%7%g%s$,':' $G=*$okN$O5v$5lF$$$^$;$s!#**every** $r;XDj$7J1lP!"A4FN9T$NA4$F$N%]%$%s%H$r%W%m%C%H$7$^$9!#

Nc:

```
every :::3::3   # 4 HVL\$N%V%m%C%/$@$1A*$S$^$9 (0 HV$,:G=i)
every :::::9    # :G=i$N 10 %V%m%C%/$rA*$S$^$9
every 2:2       # 1 $D$*$-$N%V%m%C%/$G 1 $D$*$-$N%]%$%s%H$rA*$S
                 # $^$9
every ::5::15   # $=$l$>$l$N%V%m%C%/$G%]%$%s%H 5 $+$i 15 $^$G$r
                 # A*$S$^$9
```

;2>H:

C1=c$J **plot %G%b (simple.dem)**

,

HsG^2pJQ?t%b!<%IGN **splot %G%b**

,

```
     G^2pJQ?t%b!<%I$G$N splot %G%b
!#
```

%G!<%?%U%!%$%k$NNc **(example)**

```
<!$NNc$O!"%U%!%$%k "population.dat" Cf$N%G!<%?$HM}O@6J@~$r?^$K$9$k$b$N$G$9!#
     pop(x) = 103*exp((1965-x)/10)
     set xrange [1960:1990]
     plot 'population.dat', pop(x)

%U%!%$%k "population.dat" $O<!$N$h$&$J%U%!%$%k$G$9!#
     # Gnu population in Antarctica since 1965
        1965   103
        1970   55
        1975   34
        1980   24
        1985   10
```

binary $NNc:

```
     # 2 $D$N float $NCM$rA*Br$7 (2 $DL\$NCM$OL50UL#)!"0lJ}$rFI$_<N$F!"
     # 0l$D$*$-$N float CM$rL58B$KD9$/B3$/ 1 <!85%G!<%?$H$7$F;HMQ
     plot '<file_name>' binary format="%float%*float" using 1:2 with lines

     # %G!<%?%U%!%$%k$+$i:BI8$r@8@.$9$k$N$KI,MW$J>pJs$r$9$Y$F$=$N%X%C
     # %@$K4^$s$G$$$k EDF %U%!%$%k$N>l9g
     plot '<file_name>' binary filetype=edf with image
     plot '<file_name>.edf' binary filetype=auto with image

     # 3 $D$NId9f$J$7J8;z7?@0?tCM (unsigned char) $r@8$N RGB 2hA|$N?'
     # @.J,$H$7$FA*Br$7!"y J}8~$OH?E>$5$;2hA|$NJ}8~$r:BI8J?LI>e$GJQ99
     # $9$k (:8>e$,86E@$K$J$k$h$&$K)!#%T%/%;%k$N4V3V$b;XDj$7!"%U%!%$
     # %k$K$O 2 $D$N2hA|$,4^$^$l$F$$$F!"$=$N$&$A0l$D$O origin $GJ?9T
     # 0\F0$9$k!#
     plot '<file_name>' binary array=(512,1024):(1024,512) format='%uchar' \
          dx=2:1 dy=1:2 origin=(0,0):(1024,1024) flipy u 1:2:3 w rgbimage

     # 4 $D$NUL$N%G!<%?$+$i$J$j!":BI8>pJs$b%G!<%?%U%!%$%k$F$$
     # $k!#%U%!%$%k$O gnuplot $,<B9T$5$l$F$$$k%7%9%F%'$H$O0[$J$k%(%s
     # %G%#%"%s$G@8@.$5$l$F$$$k!#
     splot '<file_name>' binary record=30:30:29:26 endian=swap u 1:2:3

     # F1$8F~NO%U%!%$%k$G!":#2s$O 1 HVL\$H 3 HVL\$N%l%3!<%I$r%9%-%C%W
     splot '<file_name>' binary record=30:26 skip=360:348 endian=swap u 1:2:3
```

0J2<;2>H: **binary matrix (p. 186)**!#

Index

%-!<%o!<%I **index** $O!"IA2hMQ$KJ#?t$N%G!<%?=89g$r;}$D%U%!%$%k$+$i!"FCDj$N%G!<%?=89g$rA*Br9k3H$r2DG=$K7^$9!#

=q<0:

```
     plot 'file' index { <m>{:<n>{:<p>}} | "<name>" }
```

%G!<%?=89g$O 2 9T$N6uGr$GJ,N%$5lF$$^$9!**index <m>** $O<m> HVL\$N=89g$@$1$rA*Br$7$^$9; **index <m>:<n>** $O<m> $+$i<n> $^$G$N%G!<%?=89g$NA*Br; **index <m>:<n>:<p>** $O!"<m>, <m>+<p>, <m>+2<p>, JI!"<p> $*$-$N=89g$rA*Br$7!"=89g<n> $G=*N;$7$^$9!#C 8@81$NE:;z(index) NIU1J}$K=>$$!"index 0 O=$N%U%!%$%k$N:G=i$N%G!<%?=89g$r0UL#$7$^$9!#Bg$-$9$.$kindex $N;XDj$K$O%(%i!<%a%C%;!<%8$,JV5l^$9!#<p> $r;XDj$7!"<n> $r6uMs$K7?>19g!"<p> Kh$N%G!<%?$r%U%!%$%k$N:G8e$^$GFI$_9~$_$^$9!**#index** $r;XDj$7$J$$>19g$O!"%U%!%$%k$N%G!<%?A4BN$rC10l$N%G!<%?=89g$H7FIA2h7^$9!#

Nc:

```
plot 'file' index 4:5
```

%U%!%$%k$N3FE@KBP7$F!"$=l,4^$^$l$k%G!<%?=89g$Nindex CM$O!"5?;wNs**column(-2)** $GMxMQ$G$-$^$9!#$3lO!"0J2<$K8+$kh&$K!"$=$N%U%!%$%kFb$N8D!9$N%G!<%?=89g$r6hJL$9kJLNJ}K!$rDs6!$7$^$9!#3l$O!"IA2hMQ$K1 DN%G!<%?=89g$NA*Br$7$+$7$J$$>19g$O**index** %3%^%s%I$hjbIT3f9%G9$,!"8D!9$N%G!<%?=89g$K0[$J$kB0@-$r3djEvF$?$$>19gKOHF$bJXMx$G$9!#0J2<;2>H:**pseudocolumns (p. 94)**, **lc variable (p. 38)**!#

Nc:

```
plot 'file' using 1:(column(-2)==4 ? $2 : NaN)        # $H$F$bIT3f9%
plot 'file' using 1:2:(column(-2)) linecolor variable # $H$F$bJXMx !
```

index '<name>' $O!"%G!<%?=89g$rL>A0'<name>'$GA*Br$7$^$9!#L>A0$O%3%a%s%H9T$K=q$$F%G!<%?=89g$K3d$jEvF^$9!#%3%a%s%HJ8;z$H$=$l$KB3$/6uGrr=$N%3%a%s%H9T$+$i<h$j=|$$F!"$=$N7k2L$,<name> $+$i;O$^$C$F$$$l$P!"$=lKB3$/%G!<%?=89g$K<name> $H$$&L>A0$,$D1ilF!"$=$l$r;XDj$G$-$^$9!#

Nc:

```
plot 'file' index 'Population'
```

<name> $G;O$^k9YFN%3%a%s%H$,$=lKB3$/%G!<%?=89g$NL>A0KJk3HKCm0U7F$/$@$5$$!#LdBjrHr1k?aK!"Nc$($P'== Popolation ==' $d[Population]' JI$NL?L>K!$rA*Br9k$HJXMx$G7g$&!#

%$%s%i%$%s%G!<%?**(inline data)**

gnuplot $N%3%^%s%IF~NO$NCf$K%G!<%?$rKd$a9~$';EAH$_$O2<oN'MQ0U5l$F$$^$9!#$^$:!"FC<l%U%!%$%kL>'-'$,plot %3%^%s%ICf$KM?$($k$H!"$=$Nplot %3%^%s%I0J2<$KB3$/9T$,%$%s%i%$%s%G!<%?$H2r<a$5l^$9!#0J2<;2>H:**special-filenames (p. 90)**!#3NJ}K!$GDs6!$5lk%G!<%?$O!"$=$N plot %3%^%s%I$G0lEY7+;HMQG-$^$;$s!#

b&0lDO!"%R%"%I%-%e%a%s%HH7$FL>A0IU$-$N%G!<%?$r%V%m%C%/$rDj5A$9$kJ}K!$G$9!#$=$NL>A0IU$-$N%G!<%?$O;DkN$G!"J#?t$N plot %3%^%s%I$G;2>H$G$-$^$9!#Nc:

```
$Mydata << EOD
11 22 33 first line of data
44 55 66 second line of data
# %G!<%?%U%!%$%kF1MM%3%a%s%H$b5!G=$9$k
77 88 99
EOD
stats $Mydata using 1:3
plot $Mydata using 1:3 with points, $Mydata using 1:2 with impulses
```

%G!<%?%V%m%C%/L>$O!"B>$NUQ?t$H6hJL$9k?aK!":G=i$NU8;z$r$ K9kI,MW,$"$j$^$9!#%G!<%?$N=*$ojN6h@Z$j(>e$NNcGOEOD) $O!"G$0U$N%"%k%U%!%Y%C%H!"?t;z$+iJ$kJ8;zNs$G9=$$^$;$s!#

%3%^%s%I**undefine** $r;H$($P!"J]B8$7$?L>A0IU$-%G!<%?%V%m%C%/$r:o=|$G$-$^$9!#**undefine $*** $O!"$9YF$NL>A0IU$-%G!<%?%V%m%C%/$r0lEY$K:o=|7^$9!#

Skip

%-!<%o!<%I**skip** $O!"%W%m%0%i%'$K%F%-%9%H%G!<%?%U%!%$%k(%P%$%J%j%G!<%?$OIT2D) $N@hF,$N?t9T$r%9%-%C%W$5$;$^$9!#%9%-%C%W$9$k9T$O!'**every** %-!<%o!<%I=hM}GN9T?tKO%+%&%s%H7^$;$s!#**every ::N** O=$N%U%!%$%kFbN9YF$N%G!<%?=89g$rN@hF,$r%9%-%C%W$7$^$9$,!"**skip N** O=$N%U%!%$%k$N@hF,ItJ,$N9TN_$r%9%-%C%W$9k3HKCm0U7F$/$@$5$$!#P%$%J%j%G!<%?$OKE,MQ5l$kF1MM$N%*%W%7%g%sKD$$F$O!"0J2<;2>H:**binary skip (p. 82)**!#

Smooth

gnuplot $O! "%G! <% ?$NJd4V$H6a; w$r9T$&HFMQE*$J%k! <%A%s$r$$/D+; }CF$$^$9! #$3$l **smooth** %*%W%7%g %s$NCf$K%0%k! <%W2=$5lF$$^$9! #$h$j@vN}$5l?%G! <% ?=hM}r7$?$1lP! "30ItK*$$F%G! <% ?$NA0=hM}$r 9k$+! "$^$?$OE,@Z$J%b%G%k$G fit $r; H$&N,$$$$G7g$&! #

=q<0:

```
smooth {unique | frequency | cumulative | cnormal | kdensity {bandwidth}
                | csplines | acsplines | mcsplines | bezier | sbezier
                | unwrap}
```

unique, **frequency**, **cumulative**, **cnormal** $O! "%G! <% ?$rC1D4$KB7$ ($?8e$G$=$lir plot 7^$9! #**unwrap** $O! "%G! <% ?$,&PhjBg$-$J%8%c%s%Wr7$J$$$h$&$K! "2 &P$N@0?tG\$r2C$ ($kA`:n$r7^$9! #B>$N%k! <%A%s$O$$ $:$l$b! "%G! <% ?$NC<$HC<$r7k$VO"B36J@~$N78?t$r7hDj$9k?aK%G! <% ?$r; H$$^$9! #$3$N6J@~$O4X?t%0%i%U$H F1$8J}K!! "9JoA$=$NCM$r x :BI8$K1h$&F1$8I}$N6h4V$4HKA*$S (0J2<; 2>H: **set samples (p. 159)**)! "$= li$NE@$r@~J,GDJ0$3HGIA2h7^$9! #%G! <% ?=89g$,6u9TdLDj5ACM$G@Zil$F$$k>19g! "@Zil$F$$J $$=l>lNItJ,$rJL! 9$NO"B36J@~H7FDJ.$^$9! #3liNJL! 9KD$J$$$@ItJ,F1; N$O! "6J@~$H7F@Z$l $?$j! "ITO"B3KJC?j9k+b7l^$;$s! #

b7 **autoscale** $N>uBV$G$"$l$P! "IA2hHC0C$O%0%i%U$N6-3&@~$NCf$K6J@~$,<}$^$kh&$K7W; ;$5l^$9! #

b7 **autoscale** $N>uBV$GJ/! "smooth $N%*%W%7%g%s$, **acsplines** $+**csplines** G"lP! "@8@.9k6J@~$NI8K\2=$O! "F~NO%G! <% ?$r4^$'h&$Jx $NHC0C$H! "**set xrange** JI$GDj5A$5lk8GDj5l$?2#:BI8$NHC0C$N6&DL ItJ,$N>e$G9T$Jol$^$9! #

A*Br5l$?%*%W%7%g%s$rE,MQ9kNK%G! <% ?$NE@?t$,>/J9$.$k>19g$O! "% (%i! <%a%C%;! <%8$,I=< (5l$^$9! #$= $N:G>.$N%G! <% ??t$O **unique** $H**frequency** GO1 $D! "**acsplines** GO4 $D! "B>$N%*%W%7%g%sGO3 DG$9! #

smooth %*%W%7%g%s$O! "4X?t$NIA2hNH$-$K$OL5; k$5l^$9! #

Acsplines **acsplines** %*%W%7%g%s$O! V<+A3$J3ji+$J%9%W%i%$%s! W$G%G! <% ?$r6a; w7^$9! #%G! <% ?$, x $K4X 7FC1D4K5l?8e (0J2<; 2>H: **smooth unique (p. 90)**)! "1 DN6J@~$,! "$$/D+$N3 <!B?9 '<0$N0lItJ, Kh$j6hJ,E*$K9=@.5l$^$9! #$=$liN3 <!<0$N78?t$O! "8D! 9$N%G! <% ?E@$K9g$&$h$&$K5aail^9,! "using ;XDjKhCF3 NsL\$NCM$,M?$ (il$?>19g$O! "$=$NCM$G8D! 9$NE@$K=E$_rD1^$9! #%G%U%)%k%H$O! "0J2<$HF1 8G$9:

```
plot 'data-file' using 1:2:(1.0) smooth acsplines
```

@-<A>e! "=E$_$N@dBPE*JBg-5O! "6J@~$r9=@.$9kN$K; H$olk6hJ,$N?t$r7hDj7^$9! #$b$7=E$_$,Bg$-1l $P! "8D! 9$N%G! <% ?$NlF6A$OBg$-$/Jj! "$=$7F=$N6J@~$O! "NY$j9g$&E@F1; V$r<+A33 <!%9%W%i%$%sGD$J$$$G F@ilkbNK6aE-$^$9! #b7=E$_$,>.$5$1lP! "$=$N6J@~Oh$j>/$J$$$6hJ,$G9=@.$5$l! "$=lKhCFh$j J?3jE*$KJj$^$9! #$=$N:G$b6KC<$J>19gO?$@1 DN6hJ,$+$iJk>19gG"$j! "$=lOA4FN%G! <% ?$K=E$_$N IU$-@~7A:G>.2>h6a; wKhCF:nil$^$9! #8m:9$NN)>l$+$i8@$ ($P! "U?3j$5$N=E$_$O! "$=$N6J@~$KBP9k!VJ? 3j2=0x; R!WKhCFJ,3d5l$?3FE@$X$N! "E}7WE*$J=E$_$H8+k3H,G-$^$9! #$=$lKh$j! "$=$N%U%!%$%kCf $N(I8='E*$J)8m:9$OJ?3j$5$N=E$_H7$F; H$&3H$,$G$-$^$9! #

Nc:

```
sw(x,S)=1/(x*x*S)
plot 'data_file' using 1:2:(sw($3,100)) smooth acsplines
```

Bezier **bezier** %*%W%7%g%s$O! "n <! (%G! <% ?E@$N8D?t) $N%Y%8'6J@~$G%G! <% ?$r6a; w$7$^$9! #3N6J@~$OCN>C< $NE@$rDJ$.$^$9! #

Csplines **csplines** %*%W%7%g%s$O%G! <% ?$rC1D4$KB7$ ($?8e$G (0J2<; 2>H:**smooth unique (p. 90)**) <+A33 <!%9%W%i%$%s6J@~$G0z$-B3$/E@rDJ.$^$9! #

Mcsplines **mcsplines** %*%W%7%g%s$O! "J?3j2=$5l?4X?t$,85$NE@$NC1D4@-$HFL@-$rJ]B8$9kh$&$J3 <! %9%W%i%$%s6J@~$G0z$-B3$/E@rDJ.$^$9! #FN Fritsch & RE Carlson (1980) "Monotone Piecewise Cubic Interpolation", SIAM Journal on Numerical Analysis 17: 238-246.

Sbezier **sbezier** %*%W%7%g%s$O!":G=i$K%G!<%?$rC1D4$KB7$((0J2<;2>H **unique (p. 90)**) $=$7$F **bezier** %"%k%4%j%:%`rE,MQ7$^$9!#

Unique **unique** %*%W%7%g%s$O!"%G!<%?$r x J}8~$KC1D4$K7^$9!#F1$8 x $r;}$D%G!<%?E@$O y NCMrJ?6Q7F01DNE@GCV-49$($^$9!#$=7F$=$N7k2LH7$FF@$ilkE@$r@~J,$G7kS^$9!#

Unwrap **unwrap** %*%W%7%g%s$O!"2 DNB3$/E@$,&P$r1[$($k0c$$$,=P$J$$$h$&$K%G!<%?$r=$@5$7$^$9:y NCM,$=$NHC0O$r1[$(kh$&$JE@KBP7FO!"A0$NE@HN:9$,&P$NHC0O$K<}$^$kh&$K2&P$N@0?tG\$r2C$($^$9!#$3$NA`:n$O!"4,$-La$7$r;}$D7ONCMr;~4VE*$KO"B3$K5;kN$KM-MQ$G$9!#

Frequency %*%W%7%g%s **frequency** $O!"%G!<%?$r x $K4X$7$FC1D4$K7^$9!#k :BI8$,F1$8E@$O!"$=$liNy NCMN9g7W$r y NCMH7F;}$D01DNE@$KCV-49($^$9!#B?$/NCMN%G!<%?$r01Dj$N3,5iI}(bin) GIA/KO!"$=$liNy NCMr1.0 K7$F!"$=lG$=$NDB$,F1$83,5iI}Fb$NE@$N8D?t$rI=$9h&K7$^$9:Nc:

```
binwidth = <E,Ev$JCM>  # x $NCM$N3F3,5iI}
bin(val) = binwidth * floor(val/binwidth)
plot "datafile" using (bin(column(1))):(1.0) smooth frequency
```

0J2<$b;2>H!#

smooth.dem

Cumulative %*%W%7%g%s **cumulative** $O!"%G!<%?$r x $K4X$7$FC1D4$K7^$9!#k :BI8$,F1$8E@$O!"$=$l0J2<$N x NCMr;}D9YF$NE@($9Jo$A8=:_$N%G!<%?E@$N:8B&$NE@)KBP9$k y NCMNN_@QE*$J9g7W$r y NCMH7F;}$D01$D$NE@$KCV-49(il$^$9!#3l$O!"%G!<%?$+$iN_@QJ,I[4X?t$rF@kN$KMxMQ$G$-$^$9!#0J2<$b;2>H!#

smooth.dem

Cnormal %*%W%7%g%s **cnormal** $O!"x $K4X$7$FC1D4$G!"y NCMO[0:1] $K@55,2=$5l?%G!<%?$r@8@.$7$^$9!#F1$8 x NCMr;}$DE@$,J#?t$"$k>l9g$O!"$=lh$j>.$5$$ x NCMr;}D9YF$N%G!<%?E@($9Jo$A8=:_$N%G!<%?E@hj$b:8$K$"$kE@)$NN_@QDB$r!"9YFN y NCMNDB$G3d$C$?CM$r y NCMH7F;}Dh$&$J01lE@$N%G!<%?$KCV$-JQ$(il$^$9!#3l$O!"%G!<%?$+$i@55,2=$5l?N_@QJ,I[4X?t$rF@$kNK;H$($^$9(FC$KI8K\E@?t$N0[$J$k%G!<%?=89g$rHf3S9kNKM-MQ$G$9)!#0J2<$b;2>H!#

smooth.dem

Kdensity %*%W%7%g%s **kdensity** $O!"%,%&%93K$rMQ$$$?!"%i%s%@%`A*BrE@$N3KL)EYI>2A($=$l$O3j$i$+$J%R%9%H%0%i%`KJ$j^$9)$rIA2h$9$kJ}K!$N01DG$9!#%,%&%93K,Bh1Ns$N3FE@$N01CV$KCV$+$l!"3liN%,%&%93K9YFNDB$,4X?t$H7FIA2h5l^$9!#2NsL\$NCM$O!"%,%&%93K$N=E$_$H7F;}HMQ5l^$9!#@55,2=$5$l?%R%9%H%0%i%`$rF@kK$O!"$3lr1/(E@$N8D?t)$H9Y$-$G$9!#%G%U%)%k%H$G$O!"gnuplot $O@55,J,I[$N%G!<%?KBP7$F:GE,$HJkh&$J%P%s%II}$r7W;;$7;HMQ$7$^$9!#

```
default_bandwidth = sigma * (4/3N) ** (0.2)
```

3l$OL>o$OHF$bJ]<iE*$G!"9JoAI}9-$$%P%s%II}$G$9!#%P%s%II}$O!"L@<(E*$K;XDj9k3HbG$-$^$9!#

```
plot $DATA smooth kdensity bandwidth <value> with boxes
```

A0$NIA2h$G;HMQ5l$?%P%s%II}$O!"JQ?t GPVAL_KDENSITY_BANDWIDTH $KJ]B8$5$l^$9!#

FCJL$J%U%!%$%kL>**(special-filenames)**

FCJL$J0UL#$r;}$D%U%!%$%kL>H7$F!"<!$NbN$,$"j^$9:''、'-'、'+'、'++'

6u$N%U%!%$%kL>'' $O!"F1$8plot %3%^%s%I>e$G!"D>A0$NF~NO%U%!%$%k$r:F$S;HMQ$9k3Hrgnuplot $K;X<($7$^$9!#hC$F!"F1$8F~NO%U%!%$%k$N2 DN%G!<%?Ns$rIA2h$9kK$O0J2<$Nh&K7$^$9:

```
plot 'filename' using 1:2, '' using 1:3
```

3N filename $O! "$3$N8e$N plot %3%^%s%IGb'' $G:FMxMQ$G$-$^9,! "$=$N>l9g$K **save** 9k$H! "%3%a%s%H$H 7F$=$NL>A0$r5-O?$9kN$_$G$9! #

'+' $H'++' $H$$$&FCJL$J%U%!%$%kL>$O! "**using** ;XDj$NA4BN$HIA2h%9%?%$%k%$%s%i%$%s4X?t$r;H$(kh$&$K 9k$?$a$N;EAH$_$G$9! #DL>o! "4X?tIA2h$O%5%s%W%kE@Kh$KC10l$Ny ($^$?$Oz) NCM7$+;}$F$^$;$s! #$7$+$75?;w%U%!%$%k'+' O=l,$"$?$+$b<B:]$NF~NO%U%!%$%kG"kh$&$K! "**using** ;XDjKh$k1 NsL\$NCM$rI8K\E@$H 7F07$$! "5i$KDI2C$NNsNCMr;XDj9k3H$b2DG=$G$9! #I8K\E@$O! "%G%U%)%k%HGO **set xrange** $G@_Dj$7 $?HO0OA4BN$KEO$j! "**set samples** $G@)8f$9$kI8K\2=$K=>CF<hil$^$9! #

```
plot '+' using ($1):(sin($1)):(sin($1)**2) with filledcurves
```

'+' $ND>A0$K! "FHN)$JI8K\HO0O$r;XDj9k3HbG$-$^$9! #DL>o$N4X?tIA2hNh$&$K! "FHN)JQ?t$KL>A0$r3djEvFk3HbG-$^$9! #plot $N:G=i$NMWAG$KM?$($k>l9g! "I8K\HO0O$KO=lrL@<(9k%-!<%o!<%I **sample** $rA0CV$9kI,MW,$"$j$^$9(0J2<$b;2>H: **plot sampling (p. 98)**)! #

```
plot sample [beta=0:2*pi] '+' using (sin(beta)):(cos(beta)) with lines
```

F1MM$K! "5?;w%U%!%$%k'++' $O! "xJ}8~$O **set samples** $G@)8f$5lkE@$N?t! "yJ}8~$O **set isosamples** $G@)8f$5lkE@$N?t$N! "I8=`E*$J[x,y] :BI8$N3J;R$r@8@.$9$k2 Ns$N%G! <%?rJV7$^$9! #G^2pJQ?t%b! <%IGO%5%s%W%kE@$O x $Hy $K4X$7FGOJ$/! "u $Hv $K4X$7$F<h$il^$9! #'++' $NIA2h$NA0$K! "xrange $Hyrange ($^$?$Ourange $Hvrange) $r@_Dj$9kI,MW,$"$j$^$9! #Nc:

```
splot '++' using 1:2:(sin($1)*sin($2)) with pm3d
plot '++' using 1:2:(sin($1)*sin($2)) with image
```

'-' $H$$$&FCJL$J%U%!%$%kL>$O! "%G! <%?$,%$%s%i%$%sG"k3Hr;X<(7^$9! #$9Jo$A! "%G! <%?$r%3%^%s%I$N8e$KB3$1$F;XDj7^$9! #$3NH$-$O%G! <%?N_$,%3%^%s%I$KB3$-F@$^$9! #h$C$F! "**plot** %3%^%s%I$KBP9k%U%#%k%?! <! "%?%$%H%k! "%i%$%s%9%?%$%k$H$$$C%?*%W%7%g%s$O! "**plot** $N%3%^%s%I%i%$%s$NJ}$K=q$+$J$$$H$$$1$^$;$s! #$3lO! "unix %7%'%k%9%/%j%W%HK*1k<< (%R"%I~%e%a%s%H)! "$"$k$$OVMS DCL K*1k$DECK $HF1MM$G$9! #$=$N%G! <%?$O! "$=$li,%U%!%$%k$+iFI_9~$^$l$?$+Nh$&$K! "1 9TKD$-1 D:DN%G! <%?E@$,F~NO$5l^$9! #$=7F%G! <%?$N=*j$O! "1 NsL\$N;OaKJ8;z"e" rCV/3H$G;X<($7$^$9! #**using** %*%W%7%g%sr3li$N%G! <%?$KE,MQ9k3H$O2DG=$G$9! #$"$k4X?t$rDI$7%G! <%?$r%U%#%k%?! <9k3H$K;H$&NOOUL#$,$"kG7g$&$,! "Ns$rA*$VNK;H$&$3HOB?J,0UL#$,$J$$G7g$&! #

'-' $O! "%G! <%?$H%3%^%s%I$r0l=o$K;}D3H,M-MQG"$k>l9g$N$?$aK"j^$9! #Nc$($P! "**gnuplot** $,$"$k%U%m%s%H$"%W%j1! <%7%g%s$N%5%V%W%m%;%9$H7F5/F0$5$l$k>l9g$JI,3lK"$?$j$^$9! #NcH7$F! "%G%b%s9%H%l! <%7%g%s$G3N5!G=$r;H$&bN$,$"kG7g$&! #**index** $d **every** Nh$&$J **plot** $N%*%W%7%g%s$,M?$($ilF$$$k$H! "$=liO"J?$K;H$olk3HNJ$$%G! <%?$rF~NO$9$k;v$r6/MW7^$9! #<!$NNc$r8+$F$/$@$5$$! #

```
plot '-' index 0, '-' index 1
2
4
6

10
12
14
e
2
4
6

10
12
14
e
```

3l$O! "<B:]$KF0:n7^9,! "

```
plot '-' , '-'
2
4
```

```
6
e
10
12
14
e
```

$H%?%$%W9kJ}$,3Z$G7g$&!#

b7!"**replot** %3%^%s%I$G**'-'** $r;H$&Ji!"$"$J$?$O1 EY0J>e%G!<%?$rF~NO$9kI,MW,$"$kG7g&!#0J2<;2>H **replot (p. 103)**, **refresh (p. 103)**!#

6u$N%U%!%$%kL>('') $O!"D>A0$N%U%!%$%kL>$,:F$S;H$olk3H$r;X<($7$^$9!#3l$O!"

```
plot ' $"$k/$H$F$b/D9$$/%U%!%$%kL>' using 1:2, '' using 1:3, '' using 1:4
```

Nh$&$JH-$KJXMx$G$9!#($b$7F1$8 plot %3%^%s%I>e$G!"**'-'** $H'' $NN>J}$r;HMQ9k$H!"><e$NNcK"kh$&$K!"%$%s%i%$%s%G!<%?$N2 DN=89g$rM?$((kI,MW,$"j^$9!#)

popen 4X?t$r;}$C$F$$$k%7%9%F%'>eGO!"%G!<%?%U%!%$%k$O!"'<' $G;C$^$k%U%!%$%kL>KhCF!"%7%'%k%3%^%s%I$+$i%Q%$%WF~NO$9k3H,G-$^$9!#Nc$($P

```
pop(x) = 103*exp(-x/10)
plot "< awk '{print $1-1965, $2}' population.dat", pop(x)
```

$O!":G=i$N?M8}NNcHF1$8>pJs$rIA2h7^$9!#$?$@$7!"x :BI8$O1965 G/$+iN7P2aG/$rI=$9h&KJj^$9!#$3NNcr<B9T9kH-$O!">e$N%G!<%?%U%!%$%k$N%3%a%s%H9Tr9YF:o=|7J1lPJj^$;$s$,!"$^$?$>e$N%3%^%s%I$N:G=i$NItJ,$r<!Nh$&$KJQ$($k3HbG$-$^$9(%3%s%^$KB3$/ItJ,):

```
plot "< awk '$0 !~ /^#/ {print $1-1965, $2}' population.dat"
```

3N%"%W%m!<%A$O:G$b=@Fp@-$,$"j^$9,!"**using** %-!<%o!<%I$rMQ$$$?C1=c$J%U%#%k%?%j%s%0$G9T$&$3Hb2DG=$G$9!#

fdopen() 4X?t$r;}$D%7%9%F%'GO!"%G!<%?%U%!%$%k$+%Q%$%W$K7kSD1il?G$0U$N%U%!%$%k%G%9%/%j%W%?$+iFI_9~$'$3H,G-$^$9!#**n** HV$N%U%!%$%k%G%9%/%j%W%?$+$iFI$_9~$'KO!"'<**&n**' H7F/$@$5$$!#3lKh$j!"1 2s$NPOSIX shell $+$i$N8F$S=P7NCf$G!"U#?t$N%G!<%?%U%!%$%k$+iN%Q%$%WF~NO$,MF0W$K9T$(kh$&$KJj$^$9:

```
$ gnuplot -p -e "plot '<&3', '<&4'" 3<data-3 4<data-4
$ ./gnuplot 5< <(myprogram -with -options)
gnuplot> plot '<&5'
```

Thru

%-!<%o!<%I**thru** $OHs?d>)$G$9!#

8E$$=q<0:

```
plot 'file' thru f(x)
```

8=:_$N=q<0:

```
plot 'file' using 1:(f($2))
```

Using

:Gbh$/;H$olk%G!<%?%U%!%$%k$N=$>~;R$O**using** $G!"$3lOF~NO%U%!%$%k$NIN9T$rIA2h$9kN$+$r;X<(7^$9!#

=q<0:

```
plot 'file' using <entry> {:<entry> {:<entry> ...}} {'format'}
```

format $r;XDj$9kH!"$=$l$rC %i%$%V%i%j4X?t 'scanf' KE,MQ7$F%G!<%?%U%!%$%k$N3F9T$rFI$_$^$9!#$=$&$G J1lP!"3F9T$O%[%o%$%H%9%Z!<%9(%9%Z!<%9$d%?%V) $G6h@Z$il?%G!<%?$NNs(%U%#!<%k%I) $+$iJkH_$J 7^9,0J2<$b;2>H: **datafile separator (p. 118)**!#

3F <entry> $O!"F~NO%U%!%$%k$N0l$D$N%U%#!<%k%I$rA*Br9k$?$a$NC1$JkNsNHV9f$+!"0l$D$N%G!<%?=89g$N :G=i$N9T$NNs$N%i%Y%k$K0lCW9kJ8;zNs!"%+%C%3$G0O$^l??t<0!"xticlabels(2) Nh$&$K%+%C%3$G0O$^JFC JI$J4X?t!"$N$$:l+$G$9!#

$=$N%(%s%H%j$,%+%C%3$G0O$^$l$??t<0$N>19g!"N NsL\$NCM$r;XDj$9kN$K4X?tcolumn(N) $r;HMQ$G$-$^$9!#$D $^$j!"column(1) CFI_9~$^$l$?:G=i$N9'L\$r;2>H$7!"column(2) $O<!$N9'L\!"$H$$$C$?6g9g$G$9!#column(1), column(2), ... $NN,5-$H7F!"FCJI$J5-9f$1, $2, ... $r;HMQ$G$-$^$9!#4X?t **valid(N)** $G!"N HVL\$NNs$,M-8z $J?t;z$G$"$k$+$I$&$+%F%9%HG-$^$9!#F~NO%U%!%$%k$N:G=i$N9T$N3FNs$K!"%G!<%?$NCMGOJ/%i%Y%k$r;}$C $F$$$k>19g!"3N%i%Y%k$rF~NONs$NFCDj$dplot %?%$%H%k$K;HMQ$G$-$^$9!#4X?tcolumn() $O!"NsHV9f0J30$K%i %Y%k$GF~NONs$rA*BrG-$^$9!#Nc$($P!"%G!<%?%U%!%$%k$,0J2<Nh$&$J>19g:

```
Height    Weight    Age
val1      val1      val1
...       ...       ...
```

0J2<$Nplot %3%^%s%I$CF1$80UL#$KJj$^$9:

```
plot 'datafile' using 3:1, '' using 3:2
plot 'datafile' using (column("Age")):(column(1)), \
             '' using (column("Age")):(column(2))
plot 'datafile' using "Age":"Height", '' using "Age":"Weight"
```

;XDjU8;zNs$,40A4$K0lCW9kI,MW$,$"j^$9$7!"BgU8;z>.U8;z$b6hJL$7$^$9!#Ns$N%i%Y%k$rplot %?%$%H%k$K;H $&$K$O!"**set key autotitle columnhead** H7F/$@$5$$!#

F~NO%G!<%?%U%!%$%k$N1...N $H$$&<B:]NNsK2C$($F!"gnuplot $O4IM}>pJs$r;}$D$$$/D+$N"5?;wNs" $rDs6!$7$^$9!#Nc$($P!"$0 $^$?$O column(0) $O!"%G!<%?%U%!%$%k$NF|IU$d;~9oJI$N>pJs$r;}$D$$$/D+$N"5?;wNs" $rDs6!$7$^$9!#0J2<;2>H: **pseudocolumns (p. 94)**!#

<entry> $K2?$b=q$+$JJ1lP!"$=$N%(%s%H%j$N%j%9%H$N=g$K%G%U%)%k%H$NCM$,;H$ol^$9!#Nc$($P **using ::4** $O!"**using 1:2:4** $H2r<a$5$1$l$^$9!#

using K?$@0l$D$N%(%s%H%j$r;XDj7?>19g$O!"$=$N <entry> $Oy NCMH7F;Hol!"%G!<%?%E@$NHV9f(5?;wNs$0) $,x H7$F;H$ol^$9!#Nc$($P"**plot 'file' using 1**" $O"**plot 'file' using 0:1**" $HF1$80UL#$G$9!#**using** $K2 DN%(%s%H%j$rM?$($?>19g!"$=li$Ox, y H7$F;H$ol^$9!#5$i$K%(%s%H%j$rDI2C7F!"F~NO $+$i$N%G!<%?%xMxMQ$9kh$&$JTA2h%9%?%$%k$N>\:YKD$$$F$O!"0J2<;2>H: **set style (p. 160)**, **fit (p. 69)**!#

'scanf' 4X?tGO?'!9$J%G!<%?7A<0$N?tCMF~NO$,;H$($^$9$,!"**gnuplot** $OA4$F$NF~NO%G!<%?$rG\@:EYIbF0>.?t H_J7$^$9$+$i!"**gnuplot** GO**%lf** $,K\<AE*$KM#0l$N?tCMF~NO;XDj;R$rF~lkI,MW$,$"j^$9!#=q<0J8;zNs KO!"">/J/Hb0l$D!"$=7F7 $D0J2<$N!"$=$Nh&$JF~NO;XDj;R$rF~lkI,MW$,$"j^$9!#'scanf' $O?t$H?t $N4V$K%[%o%$%H%9%Z!<%9!"$9Jo$A6uGr!"%?%V("\t")!"2~9T("\n")!"$^$?$O2~%Z!<%8("\f") $,$"kH4|BT7 $^$9!#$=$l0J30$NF~NO$OL@<(E*$K%9~%C%W$5lkY-$G$9!#

"\t", "\n", "\f" $r;H$&H-$OC10l0zMQId$hj'7$mFs=E0zMQId$r;H$&$Y$-$G$"$k3H$KCm0U$7F/$@$5$$!#

Using $NNc **(using_examples)** <!NNcO!"1 HVL\$N%G!<%?%U%!%$%k$r2 HVL\$H3 HVL\$NDBNCMrplot 7^ $9!#=q<0J8;zNs$O!"3FNs%G!<%?%?%V!/!"%3%s^6h@ZjGJ"k3Hr;X<(7F$^{9},!"F18 3H$,**set datafile separator comma** $r;XDj$9k3HG$b2DG=$G$9!#

```
plot 'file' using 1:($2+$3) '%lf,%lf,%lf'
```

<!NNcO!"hjU#;($J=q<0;XDj$G%G!<%?%U%!%$%k"MyData" $+$iFI$_9~$_$^$9!#

```
plot 'MyData' using "%*lf%lf%*20[^\n]%lf"
```

3N=q<0;XDj$N0UL#$O0J2<NDLj$G$9:

```
%*lf          ?tCM$rL5;k
%lf           G\@:EYIbF0>.?t$rFI$_9~$`(%G%U%)%k%H$G$O x $NCM)
%*20[^\n]     20 8D$N2~9T0J30$NU8;z$rL5;k
%lf           G\@:EYIbF0>.?t$rFI$_9~$`(%G%U%)%k%H$G$O y $NCM)
```

3 9'1i;;R?: $r;H$C$F%G!<%?%U%#%k%?$9$k0l$D$N7]Ev$r>R2p7^$9!#

```
plot 'file' using 1:($3>10 ? $2 : 1/0)
```

3l$O!"1 NsL\$N%G!<%?KBP7$F!"3 NsL\$N%G!<%?$, 10 0J>e$G$"$kh&$J2 NsL\$N%G!<%?$r plot 7^$9!#**1/0** OLDj5ACMG"$j!"**gnuplot** OLDj5A$NE@$rL5;k9kNG!"hC$FE,@ZGJ$$E@$O1#$5lk3HKJj^$9!#$^$?$O!"$"$i$+$8$aDj5A$5lF$$$kCM NaN $r;H$CFbF1$8$3HKJj$^$9!#

%+%C%3$G;O$^CF$$$J$$8BjODj?t<0$rNsHV9f$H7F;H$&$3H,G-$^$9!#Nc$($P **using 0+**(J#;($J<0) NMMJ3H$,G-$^$9!#$=7F!"$=$N?t<0$O!"%+%C%3$G%9%?!<%H7F$$$J1l$P?t<0$NCM$,0lEYI>2A$5$l!"%+%C%3$G%9%?!<%H7F$$$l$P8D!9$N%G!<%?E@rFI_9~$`$?aK$=$NCM$,0lEYI>2A$5lk!"$H$$$&E@$,=EMW$G$9!#

;~7ONs%U%)!<%^%C%H%G!<%?$r;H$C$F$$$k>l9g!"$=$N;~4V$N%G!<%?$OJ#?tNNsKEOi;k3H,G-$^$9!#$=$N>l9g!"B>$N%G!<%?$N3+;O0LCV$r7W;;$9kH$-!";~4V$N%G!<%?$K6uGr$,4^$^$l$F$$$k3H$KCm0U$7F/$@$5$$!#Nc$($P!"%G!<%?9T$N:G=i$NMWAG$,%9%Z!<%9$,Kd$a9~$^l?;~4V%G!<%?G"kJiP!"y NCMO3 NsL\$NCMH7$F;XDj$5lkY-$G$9!#

plot 'file' $H **plot 'file' using 1:2**!"$=$7$F **plot 'file' using ($1):($2)** KOHyL/$J0c$$$,$"$k3H$KCm0U$7F/$@$5$$!#1) **file** $, 1 Ns$H 2 Ns$N%G!<%?$r;}$D9T$r$=$l$>$l4^sG$$$kH9kH!"%G!<%?$, 1 Ns$N$_$N9TKBP7FO!":G=iNbNO x NCMr:n$j=P$7!"2 HVL\$NbNO=$N9T$OL5;k$7!"3 HVL\$NbNO=lrL$Dj5A$NCMH7$FJ]B8$7$^$9(@^$l@~$G plot 7F$$$k>l9g (plot with lines)!"$=$NL$Dj5A$NE@$rDL2a$9$k@~$r7kPJ$$$h$&$K)!#2) 1 NsL\$KJ8;zNs$r4^$s$G$$$kh&$J9T$,$"$k>l9g!":G=iNbNO%(%i!<H7$F plot $rCf;_$7$^$9$,!"2 HVL\$H 3 HVL\$NbNO=$NITMW$J9TrFI_HP7^$9!#

<B:]!":G=i$KC1$K

```
plot 'file' using 1:2
```

$H;XDj$9k3HG!"BgDq$N>l9g$IsJ$K%4%_$N%G!<%?$r4^$`9T$r;}$D%U%!%$%k$r$b plot 9k3H$,2DG=KJj^$9!#7+$7!"I&$7Fb%G!<%?%U%!%$%k$KJ8;zNs$r;D$7F*$-$?$$$JiP!"$=$N%F%-%9%H9T$NBh0lNs$K%3%a%s%HJ8;z(#) rCV/J}$,$h$j0BA4$G7g$&!#

5?;wNs **(pseudocolumns)** plot J8$N **using** 9`L\Fb$N<0GO!"F~NO%U%!%$%k$K4^$^$l$k<B:]$N%G!<%?CM$K2C$($F4IM}>pJs$b;2>HG-!"3liO"5?;wNs" (pseudocolumns) $K4^$^lF$$$^$9!#

```
column(0)    %G!<%?=89gFb$G$N3FE@$N=gHV!#=gHV$O 0 $+$i;O$^$j!"2
             9T$N%V%i%s%/9T$G%j%;%C%H$5$l$^$9!#N,5- $0 $b;HMQ2D!#
column(-1)   $3$NHV9f$O 0 $+$i;O$^$j!"1 9T$N%V%i%s%/9T$G%j%;%C%H
             $5$l$^$9!#$3$l$O!"9TNs!"$^$?$O3J;R>u%G!<%?Fb$N%G!<%?
             9T$KBP1~$7$^$9!#
column(-2)   J#?t$N%G!<%?=89g$r;}$D%U%!%$%kFb$N!"8=:_$N%G!<%?=89g
             $N index HV9f!#0J2<;2>H: `index`!#
```

Xticlabels <4$N9o$_$N8+=P$7 (ticlabel) $OJ8;zNs4X?t$KhC$F:n$k3HbG$-!"$=lODL>o$O0z?t$H7F%G!<%?Ns$+$i<hF@7^$9!#:G$bC1=c$J7A<0$O!"%G!<%?Ns<+?H$NJ8;zNs$H7F$NMxMQ$G!"xticlabels(N) $O xticlabels(stringcolumn(N)) $N>JN,7A$H7F;H$($^$9!#0J2<$NNc$O 3 NsL\$NMWAG$r x <4$N9o$_$N8+=P7H7F;HMQ7^$9!#

```
plot 'datafile' using <xcol>:<ycol>:xticlabels(3) with <plotstyle>
```

<4$NL\@9$j$N8+=P$7$O!"G$0U$NIA2h<4 x,x2,y,y2,z MQ$K@8@.G-$^$9!#**ticlabels(<labelcol>)** ;XDj$O!"**using** ;XDj$NCf$G!"$=$N%G!<%?$N:BI8;XDj$,A4$F:Qs@8e$K9T$&I,MW$,$"j^$9!#M-8z$J X,Y[,Z] :BI8NAHr;}$D3F%G!<%?E@$KBP7F!"xticlabels() $KM?$($kJ8;zNsCM$O!"$=$l$KBP1~$9$kE@$N x :BI8$HF1$8>l=j$N x <4$N8+=P7N%j%9%H$KDI2C$5l^$9!#**xticlabels()** $O **xtic()** $H>JN,$9k3HbG-!"B>$N<4$K4X7F$bF1MM$G$9!#

Nc:

```
splot "data" using 2:4:6:xtic(1):ytic(3):ztic(6)
```

3NNcGO!"x <4!"y <4$N8+=P$7$O x,y :BI8CM$HOJLNNs$+$i<h$j=P$5l^9,!"z <4$N8+=P$7$O!"BP1~$9$kE@$N z :BI8CM$+$i@8@.5l$^$9!#

Nc:

```
plot "data" using 1:2:xtic( $3 > 10. ? "A" : "B" )
```

3NNc$O!"x <4$N8+=P7N@8@.$KJ8;zNsCM4X?t$r;HMQ7?bN$G!"%G!<%?%U%!%$%k$N3FE@$N x <4$N9o$_$N8+=P$7$O!"3 NsL\$NCMKhCF "A" $+ "B" $+$N$$$:l+HJj^$9!#

X2ticlabels 0J2<;2>H **plot using xticlabels (p. 94)**!#

Yticlabels 0J2<;2>H **plot using xticlabels (p. 94)**!#

Y2ticlabels 0J2<;2>H **plot using xticlabels (p. 94)**!#

Zticlabels 0J2<;2>H **plot using xticlabels (p. 94)**!#

Volatile

plot %3%^%s%I$N%−!<%o!<%I **volatile** $O!"F~NO%9%H%j!<%`$+%U%!%$%k$+$i0JA0$KFI$_9~$s$@%G!<%?$,!":FFI$_9~$_;~KOM−8zGO$J$$3Hr0UL#7^$9!#$3lO!"**replot** %3%^%s%INBeojK!"2DG=$J8B$j **refresh** %3%^%s%I$r;H$&h& gnuplot $K;X<($7$^$9!#0J2<;2>H **refresh (p. 103)**!#

Errorbars

%(%i!<%P!<$O!"1 $+$i4 8D$NDI2C$5l?%G!<%?rFI`($^$?$O%(%s%H%j$r**using** $GDI2CA*Br$9$k) 3HKh$j!"2<!85%G!<%?$NIA2hK*$$F<B8=5l$F$$$^$9!#$3liDI2C5lkCMO!"$=$l$>$l$N%(%i!<%P!<%9%?%$%k$G0[$JC?7A$G;H$ol^$9!#

%G%U%)%k%HGO!"**gnuplot** $O%G!<%?%U%!%$%k$N3F9T$K0J2<Nh$&$J3 $D!"4 $D!"$"$k$$$O6 DNNs$,$"k3Hr4 BT7F$$$^$9:

```
(x, y, ydelta),
(x, y, ylow, yhigh),
(x, y, xdelta),
(x, y, xlow, xhigh),
(x, y, xdelta, ydelta),
(x, y, xlow, xhigh, ylow, yhigh)
```

x :BI8$OI,$:;XDj7J1l$P$$$1$^$;$s!#3F?tCM$r=q$/=g=x$b>e$G5s$2$?DL$jGJ$/$FOJj^$;$s!#$?$@!"**using** =$>~;R$r;H$($P$=$N=g=x$rA`:n$G$−$^$9$7!"7g1F$$$kNsNCMbJd$&$3HO2DG=G9$,!#Nc$($P!"

```
plot 'file' with errorbars
plot 'file' using 1:2:(sqrt($1)) with xerrorbars
plot 'file' using 1:2:($1-$3):($1+$3):4:5 with xyerrorbars
```

:G8eNNcO!"AjBPE*$Jx $N8m:9$H@dBPE*$Jy $N8m:9!"$H$$$&!"%5%]!<%H5l$F$$$J$$AH$N%U%!%$%kKBP9kbNG$9!#**using** %(%s%H%j$,AjBPE*$Jx $N8m:9$+$i@dBPE*$Jx $N:G>.CM$H:GBgCM$r@8@.$7$F$$$^$9!#

y $N%(%i!<%P!<$O!"(x, ylow) $+$i(x, yhigh) XNltD>$J@~$H7FIA$+$l$^$9!#ylow $Hyhigh NBeojKydelta $,;XDj$5l?H−$O!"ylow = y - ydelta, yhigh = y + ydelta HJj^$9!#$"$k9T$K%G!<%?2 D7$+$J1l$P!"ylow $Hyhight OHbKy HJj^$9!#x %(%i!<%P!<$OF1MM$K7W;;$5l??eJ?@~$G$9!#%G!<%?$N3FE@$r7k$V@^$l@~$r0z$−$?$$>19g$O!"with errorbars $H with lines $r;XDj$7$F!"F1$8%G!<%?%U%!%$%k$r2 2s **plot** 7F2<5$$($?$@$7!"%−!<$NCf$K2 DN%(%s%H%j$r:niJ$$$h$&$K!"$=$N0lJ}KO **notitle** %*%W%7%g%s$r;H$&3H$rK:$l$J$$$G2<5$$)!#B>$NA*Br;h$H7F!"errorlines %3%^%s%Ib"j^$9(0J2<;2>H **errorlines (p. 96)**)!#

%(%i!<%P!<KO!"b7 **set bars** $r;H$C$F$$$J1l$P!"$=N=l>lNC<$K?bD>$J@~J,$,$D$−$^$9(>\:Y$O!"0J2<;2>H **set bars (p. 109)**)!#

<+F0HC0O;XDj$,M−8z$G$"$l$P!"$=$NIA2hHC0O$O%(%i!<%P!<$b4^$`h&$KD4@0$5l^$9!#

0J2<$b;2>H

```
%(%i!<%P!<$N%G%b
```

99Jk>pJs$K4X$7FO!"0J2<;2>H **plot using (p. 92)**, **plot with (p. 100)**, **set style (p. 160)**!#

Errorlines

8m: 9@~(errorbar) $rH<$&@~IA2h$O!"2<!85%G!<%?%U%!%$%k$NIA2h$G%5%]!<%H5l$F$$F!"$=$l$O1 8D$+$i4 8D $ND I2C$N ($^$?$O **using** $G;XDj$9$k) Ns%G!<%?$rM?$ (k3HG9TJol^$9!#$3li$NDI2C$5lkCM$O!"MM!9 $Jerrorline %9%?%$%kN=l>lG0[JC$?7A$G;Hol$^$9!#

%G%U%)%k%H$N>uBV$G$O!"**gnuplot** $O!"%G!<%?%U%!%$%k$N3F9T$K3 8D!"4 8D!"6 8D$N$$:l+$N8D?t$N%G!<%?$, $"$k3Hr4 |BT$7!"$=l>$l0J2<$N$$:l+$KBP1~$7$^$9!#

```
(x, y, ydelta),
(x, y, ylow, yhigh),
(x, y, xdelta),
(x, y, xlow, xhigh),
(x, y, xdelta, ydelta),
(x, y, xlow, xhigh, ylow, yhigh)
```

x :BI8$O;XDj$9kI,MW,$"$j$^$9$7!"%G!<%?$N=gHV$b>e$N7A<0G"kI,MW,$"$j$^$9$,!"**using** =$>~;RG=$N =gHV$rA':n7?$j!"7g$1$F$$kNsKBP9kCMrM?$ ($?$j9k3H,G-$^$9!#Nc$ ($P

```
plot 'file' with errorlines
plot 'file' using 1:2:(sqrt($1)) with xerrorlines
plot 'file' using 1:2:($1-$3):($1+$3):4:5 with xyerrorlines
```

:G8eNNcO!"AjBPE*$Jx $N8m:9$H@dBPE*$Jy $N8m:9!"$H$$$&%5%]!<%H5l$F$$J$$AH9g$;$N%G!<%?$N%U%!%$%kKBP9kbNG!"**using** $GAjBPE*$J8m:9$+$i@dBPE*$Jx $N:G>.CM$H:GBgCM$r@8@.$7$F$$^$9!#

y 8m:9@~$O(x, ylow) $+$i(x, yhigh) $XIA2h$5lk=D@~$G$9!#ylow, yhigh Beoj$Kydelta $,;XDj$5l?>19g $O!"ylow = y - ydelta, yhigh = y + ydelta $H07$ol^$9!#$"$k9T$K2 DN%G!<%?$,$7$+$J$$>19g!"yhigh, ylow $ON>J}$H$by KJj^$9!#x 8m:9@~$OF1MM$NJ}K!$G7W;;5l$k?eJ?@~$G$9!#

8m:9@~KO!"**set bars** $,;XDj$5lF$$J$>19g!"$=$NN>C<$G?bD>$K8r$o$k@~J,$,IU$-$^$9(>\:Y$O!"0J2<;2>H: **set bars (p. 109)**)!#

<+F0=L<\(autoscaling) $,ON $N>19g!"IA2hHOOC$O8m:9@~$,F~$kh&$KD4@0$5l^$9!#

99Jk>pJsKD$$F$O!"0J2<;2>H: **plot using (p. 92)**, **plot with (p. 100)**, **set style (p. 160)**!#

4X?tIA2h (functions)

%3%^%s%I **plot**, **splot** GO!"%U%!%$%k$+iFI_9~s@%G!<%?$NIA2h$@1GJ/!"AH$_9~$_4X?t$d%f!<%6Dj5A4X ?t$rIA2h9k3HbG$-$^$9!#4X?t$NCM$O!"FHN)$J<4$NDL>o$NHOOCKEOC$F%G!<%?%s%k%s%k$3HGI>2A 7^$9!#0J2<;2>H: **set samples (p. 159)**, **set isosamples (p. 129)**!#

Nc:

```
approx(ang) = ang - ang**3 / (3*2)
plot sin(x) title "sin(x)", approx(x) title "approximation"
```

4X?t$N%G%U%)%k%H$NIA2h%9%?%$%k$r@_Dj9kJ}K!KD$$F$O!"0J2<;2>H:**set style function (p. 164)**!#AH$_ 9~$_4X?t$NpJs$K$D$$F$O!"0J2<;2>H:**expressions functions (p. 27)**!#<+A0$G4X?t$rDj5A9kJ}K!KD$$F $O!"0J2<;2>H:**user-defined (p. 33)**!#

G^2pJQ?t%b!<%IIA2h (parametric)

G^2pJQ?t%b!<%I(**set parametric**) GO!"**plot** GO2 DN?t<0NAHr!"**splot** GO3 DN?t<0NAHrM?$ ($k I,MW$,$"$j$^$9!#

Nc:

```
plot sin(t),t**2
splot cos(u)*cos(v),cos(u)*sin(v),sin(u)
```

%G!<%?%U%!%$%k$OA0$HF1$8h&$KIA2h$5l^$9!#$?@$7!"%G!<%?%U%!%$%k,IA2hN?a$KM?$ (il$kA0$K!"G$ 0U$NG^2pJQ?t4X?t$,@h$K40A4$K;XDj5l$?>19g$r=|$$$F$G$9!#8@$$49$ (kH!"x $NG^2pJQ?t4X?t (>e$NNcGO

sin(t)) $Hy $NG^2pJQ?t4X?t(>e$NNcGO **t**t**2**) HN4V$K!"B>$N=$>~;R$d%G!<%?4X?trO5_3sGO$$1$^$;$s!#$=Nh$&$J3Hr9kH!"9=J8%(%i!<KJ$j!"G^2pJQ?t4X?t$,40A4KO;XDj5l$F$$J$$!"$HI=<($5l^$9!#

with $d **title** Nh$&$JB>$N=$>~;R$O!"G^2pJQ?t4X?t$N;XDj$,40N;7?8e$K;XDj7J1l$P$$1$^$;$s!#

```
plot sin(t),t**2 title 'Parametric example' with linespoints
```

0J2<$b;2>H

G^2pJQ?t%b!<%I$N%G%b!#

HOOO (ranges)

3N%;%/%7%g%sGO!"%3%^%s%I **plot** $N0lHV:G=i$N9'L\$H7F=q$/!"<4$NHOOO$N%*%W%7%g%s$K$D$$$FN_@bL@7^$9!#$3lr;XDj9k$H!"$=$NHOOO$O!"$=$l0JA0NI$N **set range** Kh$kHOOO$N@)8Bhj$bM%@h7F07$ol^$9!#%3%^%s%I **plot** NJLJ>l=j$K;XDj$9$k!"8D!9$NIA2hMWAG$NHOOO$N@)8B$?$a$N%*%W%7%g%s$K$D$$F$OJ2<;2>H: **sampling (p. 98)**!#

=q<0:

```
[{<dummy-var>=}{{<min>}:{<max>}}]
[{{<min>}:{<max>}}]
```

1 $DL\$N7A<0$NHOOO;XDj$OFHN)JQ?t$NHOOO(**xrange**!"$^$?$OG^2pJQ?t%b!<%IGN **trange**) MQ$G!"2 $DL\$N7A<0$O=>BJQ?t$NHOOOMQ$G$9!#%*%W%7%g%s$N<dummy-var> $GFHN)JQ?t$N?7$7$L>A0$rMxMQ$G$-$^$9(%G%U%)%k%H$NJQ?tL>$O **set dummy** $GJQ99$G$-$^$9)!#

G^2pJQ?t%b!<%I(parametric) GJ1l$P!"HOOO;XDj$OJ2<$N=g$KM?$($J1l$P$$1$^$;$s:

```
plot [<xrange>][<yrange>][<x2range>][<y2range>] ...
```

G^2pJQ?t%b!<%I(parametric) GO!"HOOO;XDj$OJ2<$N=g$KM?$(J1lP$$1$^$;$s:

```
plot [<trange>][<xrange>][<yrange>][<x2range>][<y2range>] ...
```

0J2<$N **plot** %3%^%s%I$O!"**trange** $r[-pi:pi], **xrange** $r[-1.3:1.3],**yrange** $r[-1:1] $K@_Dj$9kNcG$9:

```
plot [-pi:pi] [-1.3:1.3] [-1:1] sin(t),t**2
```

* $O!"min(:G>.CM) $d max(:GBgCM) $K<+F0HOOO;XDj(autoscale) $N5!G=$r;H$&$3Hr2DG=K7$^$9!#;XDj=gHVN?a@1KI,MW$JHOOO;XDj$K$O!"6u$NHOOO[] $r;H$CF/$@$5$$!#

plot $d **splot** $N%3%^%s%I9T$G;XDj5l$?HOOO$O$=$N%0%i%U0lDKN_1F6A$r5Z$\$7$^$9!#hC$F!"$=$N8e$N%0%i%U$N%G%U%)%k%H$NHOOO$rJQ99$9kK$O **set xrange** $d **set yrange** $r;HMQ$7F/$@$5$$!#

;~4V%G!<%?KBP7FO!"HOOO$O!"%G!<%?%U%!%$%k$+$iFI$_9~$`NK;HMQ9kNHF1$8=q<0$G!"0zMQIdGOOs$G;XDj$9kI,MW,$"$j$^$9!#0J2<;2>H:**set timefmt (p. 170)**!#

Nc:

0J2<$O8=:_$NHOOO$r;HMQ$7$^$9:

```
plot cos(x)
```

0J2<$O x $NHOOO$N$_$N;XDj$G$9:

```
plot [-10:30] sin(pi*x)/(pi*x)
```

0J2<$O>e$HF1$8$G9,!"2>JQ?tH7$F t $r;H$$$^$9:

```
plot [t = -10 :30]  sin(pi*t)/(pi*t)
```

0J2<$O x $Hy $NN>J}$NHOOO$N;XDj$G$9:

```
plot [-pi:pi] [-3:3]  tan(x), 1/x
```

0J2<$O!"y $NHOOO$N$_$N;XDj$G$9:

```
plot [ ] [-2:sin(5)*-8] sin(x)**besj0(x)
```

0J2<$O x $N:GBgCM$Hy $N:G>.CM$N$_$N;XDj$G$9!#

```
plot [:200] [-pi:]  $mydata using 1:2
```

0J2<$O x $NHOOO$r;~7ONs%G!<%?H7$F;XDj$7$F$$$^$9:

```
set timefmt "%d/%m/%y %H:%M"
plot ["1/6/93 12:00":"5/6/93 12:00"] 'timedata.dat'
```

Sampling

%G%U%)%k%HGO!"4X?t$d5?;w%U%!%$%k"+" $G@8@.$5lk%G!<%?$O!"IA2hHO0OA4BN$Ko?CFI8K\2=(sample) 5l$^$9!#3NHO0O$O!"plot %3%^%s%I$ND>A0$KA0$bCFL@<(E*$K%0%m!<%P%k$JHO0O;XDj$r%3%^%s%I **set xrange** $G;XDj$9k3H,G-$^$9$,!"$=$&$GJ1lP plot %3%^%s%IN9YF$NMWAG$K4X9k%G!<%?A4BN$r4^$`h&$KHO0O$,<+F0=L<\(autoscaling) 5l$^$9!#7+$7!"$=$NI8K\2=HO0O$O8D!9$NIA2hMWAGKh$K@)8B7F3djEvFk3HbG-$^$9!#

Nc:

0J2<$O!"x A4BN$NHO0O$r 0 $+$i 1000 H7$F%U%!%$%k$N%G!<%?$rIA2h$7!"2 DN4X?t$rA4BN$NHO0O$N0lItJ,$@1=l>$lIA2h7^$9:

```
plot [0:1000] 'datafile', [0:200] func1(x), [200:500] func2(x)
```

0J2<$O!">e$H$[$\F1MMG9$,!"A4BN$NHO0O$O%G!<%?%U%!%$%k$NFbMF$KhC$F7hDj$7$^$9!#3N>l9g!"I8K\2=5l$k4X?t$O!"A4BN$,%0%i%UFb$K<}$^$k$+$b7l$^$;s7!"<}$^$i$J$$$+b7l^$;$s:

```
set autoscale x
plot 'datafile', [0:200] func1(x), [200:500] func2(x)
```

0J2<$N%3%^%s%I$KO"$$$^$$$5$,4^$^l^$9!#@hF,$NHO0O$O!"B?J,:G=i$N4X?t$NI8K\2=$N$_$K8~1?N@$H;W$$$^9,!"<B:]O=$&$GOJ$/!"$9YF$NIA2hMWAG$KE,MQ9kh&$K2r<a$5l^$9:

```
plot [0:10] f(x), [10:20] g(x), [20:30] h(x)
```

0J2<$N%3%^%s%I$O!">eNNcN$"$$$^$$$5$r=|$/$?$a$K%-!<%o!<%I **sample** $rDI2C$7$?$bNG!"$=$NHO0O;XDj$r plot A4BN$KE,MQ7J$$$h$&$K7F$$$^$9:

```
plot sample [0:10] f(x), [10:20] g(x), [20:30] h(x)
```

0J2<NNcO!"3 <!85%0%i%UKi$;$s$N6J@~$rIA$/0l$D$NJ}K!$rDs<(7^$9:

```
splot [-2:2][-2:2] sample [h=1:10] '+' using (cos(h)):(sin(h)):(h)
```

Plot %3%^%s%I$N for %k!<%W (for loops in plot command)

B?$/$NF1Ey$N%U%!%$%k$d4X?t$rF1;~$KIA2h$9$k>l9g$O!"$=$l$>$l$N plot %3%^%s%I$N7+jJV7(iteration) G=lr9T$&$N$,JXMx$G$9!#

=q<0:

```
plot for [<variable> = <start> : <end> {:<increment>}]
plot for [<variable> in "string of words"]
```

7+jJV7$NE,MQHO0O(scope) $O!"<!$N%3%s%^(,) $+%3%^%s%I$N=*oj!"$N$$$:l+@h$K8=$l$?$H3m$^$G$G$9!#$?$@$7!"IA2h$9$k9`L\$NA0$KDj5A<0(J#?t$b2D) $,JB$s$G$$$k>l9g$O!"%3%s%^$,4V$KF~$C$F$$$Fb=$NNc30$HJj$^$9!#

7+jJV7$OG^2pJQ?t%b!<%I (parametric) GO5!G=7J$$$3HKCm0U7F$/

$@$5$$!#

Nc:

```
plot for [j=1:3] sin(j*x)
```

Nc:

```
plot for [dataset in "apples bananas"] dataset."dat" title dataset
```

3NNcGO!"7+jJV7$O%U%!%$%kL>$HBP1~$9$k%?%$%H%k$N@8@.$NN>J}$G;H$olF$$$^$9!#

Nc:

```
file(n) = sprintf("dataset_%d.dat",n)
splot for [i=1:10] file(i) title sprintf("dataset %d",i)
```

3NNc$O!"%U%!%$%kL>$G@8@.$5lkJ8;zNsCM4X?t$rDj5A$7!"$=$Nh&$J 10 8D$N%U%!%$%k$rF1;~$KIA2h$7$^$9!#7+jJV7$NJQ?t($3NNcG$O'i') $O0l$D$N@0?t$H7F07ol!"$=$l$r 2 EY0J>e;HMQ$G$-$^$9!#

Nc:

```
     set key left
     plot for [n=1:4] x**n sprintf("%d",n)
```

3NNc$O!"4X?t$NAH$rIA2h$7$^$9!#

Nc:

```
     list = "apple banana cabbage daikon eggplant"
     item(n) = word(list,n)
     plot for [i=1:words(list)] item(i).".dat" title item(i)
     list = "new stuff"
     replot
```

3NNcGO!"%j%9%H$K=>$C$F3F%9%F%C%W$,?J9T$7!"$=$N3F9'L\$KBP7F0lDNIA2h$,9T$ol^$9!#$3$N3F9'L\$OF0E*$K<hF@$5l^9N$G!"$=$N%j%9%H$rJQ9$7!"$=N^$^replot 9k3H$,G-$^$9!#

Nc:

```
     list = "apple banana cabbage daikon eggplant"
     plot for [i in list] i.".dat" title i
     list = "new stuff"
     replot
```

3NNc$O!"@0?t$N7+jUV7JQ?tGOJ/!"U8;zNs$N7+$jUV$7JQ?t7A<0$rMQ$$$F$$k3H0J30$OA0$NNc$HA4$/F1$8$G$9!#

<end> $N@0?t$NBeoj$K5-9f* $r;HMQ$9lP!"7+jUV7O9YF$NM-8z$J%G!<%?$,$J$/$Jk^GN7+jUV7HJj^$9!#$3lO!"3F9T$K4^$^lk9YFNNs$N=hM}!"$"$k$$$O%U%!%$%kFb$N9YFN%G!<%?%;%C%H(2 9T$N6u9T$G6h@Zil$k)$N=hM}!";XDjKEvFO^k9YF$N%U%!%$%kJI$r0lEY$K=hM}9kNKJXMx$G$9!#

Nc:

```
     plot for [i=2:*] 'datafile' using 1:i with histogram
     splot for [i=0:*] 'datafile' index i using 1:2:3 with lines
     plot for [i=1:*] file=sprintf("File_%03d.dat",i) file using 2 title file
```

Title

%G%U%)%k%HGO3F6J@~$O!"BP1~$9$k4X?t$d%U%!%$%kL>$G%-!<NCfK0lMwI=<(5l$^$9$,!"plot $N%*%W%7%g%s **title** $r;H$&3H$G!"L@<(E*$J%?%$%H%k$rM?$($k3HbG$-$^$9!#

=q<0:

```
     title <text> | notitle [<ignored text>]
     title columnheader | title columnheader(N)
           {at {beginning|end}}
```

$3$3$G<text> $O!"0zMQId$G0O$^$l$?J8;zNs$+!"U8;zNs$HI>2A$5lk<0$N$$:l+$G$9!#0zMQId$O%-!<$K$OI=<($5l^$;$s!#

F~NO%G!<%?NNsN:G=i$N9'L\($9JoANsN@hF,)$rJ8;zNs%U%#!<%k%I$H2r<a$7!"$=lr%-!<%?%$%H%k$H7FMxMQ9k%*%W%7%g%sb"j^$9!#0J2<;2>H:**datastrings (p. 24)**!#3l$O!"**set key autotitle columnhead** $r;XDj$9lP%G%U%)%k%H$N5sF0$HJj$^$9!#

6J@~%?%$%H%k%H%5%s%W%k$OM=Ls8l **notitle** $r;H$&3H$G%-!<$+$i:o=|$G$-$^$9!#2?$b$J$$%?%$%H%k(**title ''**)$O**notitle** $HF1$80UL#$r;}$A$^$9!#%5%s%W%k$@$1$,M_$7$$H$-$O!"0l$D0J>e$N6uGr$r%?%$%H%k$N8e$m$KF~$lF/$@$5$$(**tilte ''**)!#**notilte** $N8e$m$KJ8;zNs$rD1$?>19g!"$=$NJ8;zNs$OL5;k5l$^$9!#

key autotitles $,@_Dj$5lF(%G%U%)%k%H)!"$+$D **title** $b **notitle** $b;XDj$5lJ$+$C$?>19g!"6J@~$N%?%$%H%k$O **plot** %3%^%s%I>eK"$k4X?tL>$+%G!<%?%U%!%$%kL>$KJj$^$9!#%U%!%$%kL>$N>19g$O!";XDj$5lkG$0U$N%G!<%?%U%!%$%k=$>~;Rb=$N%G%U%)%k%H%?%$%H%k$K4^$^l^$9!#

0ICV$d%?%$%H%k$N0ICVB7$(JINK^NcN%1%$%"%&H$O!"**set key** $G@)8f$G$-$^$9!#>\:Y$O!"0J2<;2>H: **set key (p. 130)**!#

IA2h9k6J@~$N%?%$%H%k$r!"%0%i%U$N6J@~<+?H$ND>A0!"$"$k$$$CD>8eKCV/KO!"**at {beginning|end}** $r;HMQ$7$^$9!#3N%*%W%7%g%s$O!"**with lines** $GIA2h$9$k>19g$OM-MQG9$,!"B>$NIA2h%9%?%$%k$G$OUL#$,$J$$>19gb"j^$9!#

Nc:

0J2<$O y=x $r%?%$%H%k 'x' $GI=< ($7$^$9:

```
plot x
```

0J2<$O! "x $N2 >h$r%?%$%H%k "x^2" $G! "%U%!%$%k "data.1" $r%?%$%H%k"measured data" $GI=< ($7$^$9:

```
plot x**2 title "x^2", 'data.1' t "measured data"
```

0J2<$O! "6K:BI8%0%i%U$N<~jK1_7A$N6-3&$r=q$-! "%?%$%H%kJ7$GI=< ($7$^$9:

```
set polar; plot my_function(t), 1 notitle
```

0J2<$O! "%U%!%$%k$N@hF,9T$N3FNs$K%?%$%H%k$r4^$ 'J#?tNs$N%G! <%?$rIA2h7^$9! #3F%?%$%H%k$O! "FHN)$7$?K^Nc$GOJ$/! "BP1~$9$k6J@~$N8emKCV$-$^$9:

```
unset key
set offset 0, graph 0.1
plot for [i=1:4] 'data' using i with lines title columnhead at end
```

With

4X?t$d%G! <%?$NI=< (KO$?$/5s$N%9%?%$%kN&AN01Dr; H$&$3H,G-$^$9! #%-! <%o! <%I **with** $,$=$NA*Br$N$?$a$KMQ0U$5lF$$^$9! #

=q<0:

```
with <style> { {linestyle | ls <line_style>}
               | {{linetype  | lt <line_type>}
                  {linewidth | lw <line_width>}
                  {linecolor | lc <colorspec>}
                  {pointtype | pt <point_type>}
                  {pointsize | ps <point_size>}
                  {fill | fs <fillstyle>} {fillcolor | fc <colorspec>}
                  {nohidden3d} {nocontours} {nosurface}
                  {palette}}
             }
```

$3$3$G! "<style> $O0J2<$N$$:l+:

lines	dots	steps	errorbars	xerrorbar	xyerrorlines
points	impulses	fsteps	errorlines	xerrorlines	yerrorbars
linespoints	labels	histeps	financebars	xyerrorbars	yerrorlines
surface	vectors	parallelaxes			

$^$?$O! "

boxes	boxplot	ellipses	histograms	rgbalpha
boxerrorbars	candlesticks	filledcurves	image	rgbimage
boxxyerrorbars	circles	fillsteps	pm3d	

$^$?$O

```
table
```

:G=i$N%0%k! <%W$N%9%?%$%k$O! "@~! "E@! "U8; z$NB0@-$r; }$A! "Bh2 $N%0%k! <%W$N%9%?%$%k$O! "5iKEIjDY$7B0@-$b; }CF$$$^$9! #0J2<; 2>H: **fillstyle (p. 163)**! #5i$K%5%V%9%?%$%k$r; }$D%9%?%$%k$b$"$j$^$9! #8D! 9$N%9%?%$%k$N>\:Y$K$D$$$F$O! "0J2<; 2>H: **plotting styles (p. 47)**! #%9%?%$%k **table** $O! "%0%i%U$NBeoj$KI=7A<0$N=PNO$r@8@.$7$^$9! #0J2<; 2>H: **set table (p. 167)**! #

%G%U%)%k%H$N%9%?%$%k$O! "**set style function** $H **set style data** $GA*Br$G$-$^$9! #

%G%U%)%k%HGO! "$=$l$>$l$N4X?t$d%G! <%?%U%!%$%k$O! "; H$&$3H,G-$k7?$N:GBg?t$KC#$9k^$G0 [$J$k@~<o! "E@<o$r; H$$^$9! #$9YF$NC<KvMQ%I%i%$%P$O:GDc6 DN0 [JkE@<o$r%5%]! <%H7F$$$F! "b7$?$/5sMW5a5l$?>19g! "$=li$r=g$K:FMxMQ7F$$$-$^$9! #; HMQCf$N=PNO7A<0$G$N@~<o! "E@<o$N=89gA4BN$r8+$?1l$P! "**test** H7F/$@$5$$! #

0lDNIA2h$G@~<o$dE@<o$rA*$S$?$$JiP! "<line_type> $d <point_type> $r; XDj$7F/$@$5$$! #3liNCM$O! "$=$NIA2h$G; Hol$k@~<o$dE@<o$r; XDj$9$k@5$N@ODj?t ($^$?$O?t<0) $G$9! #; HMQ9kC<Kv$G; H$ ($k@~<o! "E@<o$rI=< (9kKO **test** %3%^%s%I$r; H$CF/$@$5$$! #

IA2h$N@~$NI}$dE@$NBg$-$5$O <line_width> $d <point_size> $GJQ99$G$-$^$9! #$3liO=$N3F! 9$NC<Kv$N%G%U%)%k%H$NCMKBP9$kAjBPE*$JCMH7$F; XDj$7$^$9! #E@NBg-5OA4BN$KDIMQ$9kh&$KJQ99$G$-$^$9! #>\:Y$O! "0J2<; 2>H:**set pointsize (p. 157)**! #7+$7! "$3$3$G%;%C%H5l$k <point_size> $H! "**set pointsize** $G%;%C%H$5lkBg$-$5$O! "$$$:lb%G%U%)%k%H$N%]%$%s%H%5%$%:$K3]1ilk3H$KCm0U$7F/$@$5$$! #9JoA! "$=$liN8z2L$OCN_@Q$O7^$;$s! #Nc$ ($P! "**set pointsize 2; plot x w p ps 3** $O! "%G%U%)%k%H$N%5%$%:$N3G\$G$"$C$F! "6G\$GO"j^$;$s! #

%i%$%s%9%?%$%k$N0lItJ,! "$"$k$$$O3F plot K*$$$F **pointsize variable** $H$$&; XDj$b2DG=$G$9! #$3$N>l9g! "F~NO$K$ODI2C$N1 Ns$,MW5a$5l^$9! #Nc$ ($P2D IA2h$G$O3 Ns! "3D IA2h$G$O4 Ns$N%G! <%?$,I,MW$KJj$^$9! #8D! 9$NE@$N%5%$%:$O! "A4BNrDL7FN pointsize $K! "%G! <%?%U%!%$%k$+$i$NF~NO$KhkCMr+1?bNH7$F7hDj$5l^$9! #

set style line $r; H$C$F@~<o/@~I}! "E@<o/E@I}$NAH$rDj5A$9lP! "$=$N%9%?%$%k$NHV9f$r <line_style> $K%;%C%H$9k3HG$=$lir; H$&$3H,G-$^$9! #

gnuplot $, **pm3d** $r%5%]! <%H$9kh$&$K%$%s%9%H! <%k$5lF$$$kJi$P! "**splot** K*$$$F lines, points, dots $N?'$r3ji+$KJQ2=$5$;$k$?$a$NFCJL$J%-! <%o! <%I **palette** $,; H$ ($^$9! #$=$N?'$O! "%3%^%s%I **set palette** G"i+8a@_Dj5l$?3j$i$+$KJQ2=9k+%i! <%Q%l%C%H$+$iA*Br7^$9! #?'$NCM$O! "E@$Nz :BI8NCM+! "$^$?$O **using** $G4 HVL\$N%Q%i%a! <%?H7$F; XDj$5lk?':BI8$KBP1~$7$^$9! #2 <!85! "3 <!85$NIA2h (**plot** $H **splot** %3%^%s%I) $NN>J}$G! "%Q%l%C%H?'$r>.?tCM$+$^$?$O%+%i! <%\%C%/%9$NHO0O$XBP1~$E1il?CM$N$$:l+$G; XDj$9k3H,G-$^$9! #%Q%l%C%H?'NCMO! "**using** ; XDj$GL@< (E*$K; XDj5l$?F~NOs$+iFI_9~$'$3Hb2DG=$G$9! #0J2<; 2>H: **colors (p. 36)**, **set palette (p. 152)**, **linetype (p. 135)**! #

%-! <%o! <%I **nohidden3d** $O! "**splot** %3%^%s%I$G8@.5l$kIA2h$KN_E,MQ5l$^$9! #DI>o! "%0%m! <%P%k$J%*%W%7%g%s **set hidden3d** $O%0%i%U>e$NA4FNIA2hKE,MQ5l^9,! "3F! 9$NIA2h$K **nohidden3d** %*%W%7%g%s rD1k3H$G! "$=lr hidden3d $N=hM}$+$i=|30$9k3H,G-$^$9! #**nohidden3d** $,%^! <%/$5l?6JLI0J30$N8D! 9$NIA2hMWAG (@~J,! "E@! "%i%Y%kEy) $O! "DL>o$OB>$N2?$i$+$NIA2hMWAG$G1#$5lF7^$&>l9g$bA4$FIA2h$5l^$9! #

F1MM$K! "%-! <%o! <%I **nocontours** $O! "%0%m! <%P%k$K **set contour** ; XDj$,M-8z$J>l9gGb! "8DJL$N plot KBP9$kEy9b@~IA2h5!G=$r%*%UK7$^$9! #

F1MM$K! "%-! <%o! <%I **nosurface** $O! "%0%m! <%P%k$K **set surface** ; XDj$,M-8z$J>l9gGb! "8DJL$N plot KBP9$k3 <!856JLIA2h$r%*%UK7$^$9! #

%-! <%o! <%I$C0E< ($9kh$&$J7A$G>JN,2DG=$G$9! #

linewidth, **pointsize**, **palette** %*%W%7%g%s$OA4$F$NC<KvAuCV$G%5%]! <%H5l$F$$$ko1GO$J$$$3HKCm0U7F$/$@$5$$! #

Nc:

0J2<$O! "sin(x) $r1tD>@~$GIA2h7^$9:

```
plot sin(x) with impulses
```

0J2<$O! "x $rE@$GIA2h$7! "x**2 $r%G%U%)%k%H$NJ}<0$GIA2h$7$^$9:

```
plot x w points, x**2
```

0J2<$O! "tan(x) $r4X?t$N%G%U%)%k%H$NJ}<0$G! ""data.1" $r@^$l@~$GIA2h$7$^$9:

```
plot [ ] [-2:5] tan(x), 'data.1' with l
```

0J2<$O! ""leastsq.dat" $r1tD>@~$GIA2h7^$9:

```
plot 'leastsq.dat' w i
```

0J2<$O! "%G! <%?%U%!%$%k "population" $r6k7A$GIA2h7^$9:

```
plot 'population' with boxes
```

0J2<$O! ""exper.dat" $r% (%i! <%P! <IU$-$N@^$l@~$GIA2h$7$^$9 (% (%i! <%P! <$O3 Ns! "$"$k$$$O4 Ns$N%G! <%?$rI,MWH7$^$9):

```
plot 'exper.dat' w lines, 'exper.dat' notitle w errorbars
```

b&0lDN "exper.dat" $N% (%i!<%P!<IU$-$N@^$l@~ (errorlines) GNIA2hJ}K! (%(%i!<%P!<$O3 Ns!"$"$k$$$O4 Ns$N%G!<%?$,I,MW):

```
plot 'exper.dat' w errorlines
```

0J2<$O!"sin(x) $H cos(x) $r%^!<%+!<IU$-$N@^$l@~$GIA2h$7$^$9!#@^$l@~$CF1$8@~<o$G9,!"%^!<%+!<$OO [$JC?bN$r;H$$^$9:

```
plot sin(x) with linesp lt 1 pt 3, cos(x) with linesp lt 1 pt 4
```

0J2<$O!""data" $rE@<o3 $G!"E@$NBg$-$5$rDL>o$N2 G\$GIA2h7^$9:

```
plot 'data' with points pointtype 3 pointsize 2
```

0J2<$O!""data" $rIA2h$7$^$9$,!"4 NsL\$+iFIs$@%G!<%?$r pointsize NCMH7F;HMQ7^$9:

```
plot 'data' using 1:2:4 with points pt 5 pointsize variable
```

0J2<$O!"2 DN%G!<%?=89gKBP7$F!"I}N_0 [Jk@~$rMQ$$$FIA2h7^$9:

```
plot 'd1' t "good" w l lt 2 lw 3, 'd2' t "bad" w l lt 2 lw 1
```

0J2<$O!"x*x $N6J@~$NFbItNEIjDV7H?'NBSrIA2h7^$9:

```
plot x*x with filledcurve closed, 40 with filledcurve y=10
```

0J2<$O!"x*x $N6J@~$H?'$NH"$rIA2h7^$9:

```
plot x*x, (x>=-5 && x<=5 ? 40 : 1/0) with filledcurve y=10 lt 8
```

0J2<$O!"3j$i$+$KJQ2=9k?'$N@~$G6JL$rIA2h$7$^$9:

```
splot x*x-y*y with line palette
```

0J2<$O!"2 DN?'ND$$?6JL$r!"0 [$J$k9b$5$GI=<($7$^$9:

```
splot x*x-y*y with pm3d, x*x+y*y with pm3d at t
```

Print

print %3%^%s%I$O<0> NCMr2hLL$KI=<(7^$9!#3l$O **pause 0** $HF1$8$G$9!#<0> $O!"?t$r@8@.9k **gnuplot** $N?t<0$+!"$^$?$OJ8;zNs$G$9!#

=q<0:

```
print <<0> {, <<0>, ...}
```

0J2<;2>H **expressions (p. 27)**!#=PNO%U%!%$%k$O **set print** $G@_Dj$G$-$^$9!#0J2<$b;2>H **printerr (p. 102)**!#

Printerr

printerr $O print %3%^%s%I$H$[$\F1$8$G9,!"$=$NA0$N **set print** %3%^%s%I$N8z2L$,B3$$$F$$k>uBVGb=PNO$r>o$K stderr KAwkH3m@1,0c$$^$9!#

Pwd

pwd %3%^%s%I$O%+%l%s%H%G%#%l%/%H%j$NL>A0$r2hLL$KI=<(7^$9!#

%+%l%s%H%G%#%l%/%H%j$rJ8;zNsJQ?t$KJ]B8$7$?$j!"J8;z<0$NCf$G;H$$$?$>19g$O!"JQ?t GPVAL_PWD $r;H$&3H$,$G$-$k3H$KCm0U$7F/$@$5$$!#0J2<;2>H **show variables all (p. 172)**!#

Quit

exit $H **quit** $NN>%3%^%s%I$H END-OF-FILE J8;z$O!"**gnuplot** $r=*N;$5$;$^$9!#$3li$N%3%^%s%I$O!"=PNOAuCV$r (**clear** %3%^%s%I$HF1MM$K) %/%j%"$7F+$i=*N;$5$;$^$9!#

Raise

=q<0:

```
raise {plot_window_nb}
```

%3%^%s%I **raise** (**lower** $NH?BP) $O!"**pm**, **win**, **wxt**, **x11** Ey$N gnuplot $NBPOC7?=PNO7A<0$N<B9TCf$K!"IA2h%&%#%s%I%&$r>e (A0LL) $K>e$2$^$9!#IA2h%&%#%s%I%&$r!"%G%9%/%H%C%W>e$N%&%#%s%I%&%^%M!<%8%c$N z J}8~$N%&%#%s%I%&$N=E$JjNA0 (>e) KCV-$^$9!#

x11 $d **wxt** Nh$&$KJ#?t$NIA2h%&%#%s%I%&$r%5%]!<%H7F$$$k>l9g!"%G%U%)%k%HGO3N%3%^%s%IO=li$NJ#?t$N%&%#%s%I%&$r9_=g$K>e$2!":G=i$K:nil$?%&%#%s%I%&$r0lHV2<$K!":G8e$K:nil$?%&%#%s%I%&$r0lHV>eKJBY$^$9!#%*%W%7%g%s0z?t$NIA2hHV9f$,M?$($il?>l9g!"$=$l$KBP1~$9$kIA2h%&%#%s%I%&$,B8:_9lP=lN$_$,>e2il^$9!#

%*%W%7%g%s0z?t$O!"C10l$NIA2h%&%#%s%I%&$N=PNO7A<0!"$9Jo$A **pm** $H **win** GOL5;k5l$^$9!#

%&%#%s%I%&$, X11 $GA0LL$K=P$J$$>l9g!"b7$+$9kHIA2h%&%#%s%I%&$O!"0[$J$k X11 %;%C%7%g%s$GF0:n7F$$$k (Nc$($P telnet $d ssh %;%C%7%g%s$JIKhC$F) $+!"$^$?$OA0LL$K=P$9$3$H$,%&%#%s%I%&%^%M!<%8%c$N@_DjKhCFKI32$5$l$F$$$k2DG=@-$,$"j^$9!#

Refresh

%3%^%s%I **refresh** $O!"**replot** $K;w$F$$$^9,!"<g$K 2 DNE@$G0c$$$,$"$j$^$9!#**refresh** $O!"4{$KFI$_9~$s$@%G!<%?$rMQ$$$F!"8=:_$NIA2h$r:F@07A$7:FIA2h$7$^$9!#3l$O!"**refresh** $r (5?;w%G%P%$%9'-' $+$i$N) %$%s%i%$%s%G!<%?$NIA2h!"$*$h$SFbMF$,JQ2=7&$k%G!<%?%U%!%$%k$+$i$NIA2h$K;H$($k$H$$$&3H$r0UL#$7$^$9!#$?$@$7!"%3%^%s%I **refresh** $O!"4{$KB8:_9kIA2h$K?7$7$$%G!<%?$rDI2C$9kNKO;H$($^$;$s!#

%^%&%9A`:n!"FC$K%:!<%`%$%s$H%:!<%`%"%&%H$G$O!"E,@Z$J>l9g$O **replot** $NBe$o$j$K$`7m **refresh** $r;HMQ$7$^$9!#Nc:

```
plot 'datafile' volatile with lines, '-' with labels
100 200 "Special point"
e
# ?'$s$J%^%&%9A`:n$r$3$3$G<B9T
set title "Zoomed in view"
set term post
set output 'zoom.ps'
refresh
```

Replot

replot %3%^%s%I$r0z?t$J7G<B9T9k$H!":G8e$K<B9T7? **plot** $^$?$O **splot** %3%^%s%I$r:F<B9T7^$9!#$3lO!"$"$k%W%m%C%H$r0[$J$k **set** %*%W%7%g%s$G$_$?$j!"F1$8%W%m%C%H$r0[$J$kAuCV$K=PNO7?j9kH$-$KJXMxG7g&!#

replot %3%^%s%IKBP9$k0z?t$O:G8e$K<B9T$7$? **plot** $^$?$O **splot** %3%^%s%I$N0z?t$K (0EL[$N',' $H6&$K) DI2C5l!"$=$l$+$i:F<B9T5l$^$9!#**replot** $O!"HO0O (range) $r=|$$$F$O!"**plot** $d **splot** $HF1$80z?trHk3H,G-$^$9!#hC$F!"D>A0$N%3%^%s%I$, **splot** GOJ/ **plot** $N>l9g$O!"4X?trb$&0l$D$N<49o$_$G%W%m%C%H$9kN$K **replot** $r;H$&3H$,$G$-$^$9!#

Cm0U:

```
plot '-' ; ... ; replot
```

$H$$$&;H$$J}$O?d>)$5l^$;$s!#$=$l$O!"$3l,$"$J$?$K:F$SF1$8%G!<%?9YFNF~NO$rMW5a$9k3HKJk$+$i$G$9!#$?$$$F$$$N>l9g!"Beoj$K%3%^%s%I **refresh** $r;H$($^$9!#3l$O!"0JA0$KFI$_9~$s$@%G!<%?$r;HCF%0%i%U$r:FIA2h$7$^$9!#

multiplot %b!<%IGO!"**replot** %3%^%s%IO9YF$N plot GOJ/!"D>A0$N plot ItJ,$@$1$7$+:F<B9T7J$$$3HKCm0U7F$/$@$5$$!#

:G8e$K<B9T$7$?**plot** (**splot**) %3%^%s%I$NFbMF$r=$@5$9$kJ}K!$K$D$$F$C0J2<$b;2>H **command-line-editing** (**p. 23**)!#

D>A0$NIA2h%3%^%s%I$NA4BN$rI=< ($5$;$k3H$d!"$=lr **history** NCfK%3%T!<9kJ}K!KD$$F$O!"0J2<$b;2>H **show plot** (**p. 148**)!#

Reread

reread %3%^%s%I$O!"**load** %3%^%s%I$^$?$O%3%^%s%I%i%$%s$G;XDj7?**gnuplot** $N%3%^%s%I%U%!%$%k$r!"$=$N<!$N%3%^%s%I$,FI$^lkA0$K!"3+;CE@$K:F@_Dj7^$9!#$3lO!"%3%^%s%I%U%!%$%k$N:G=i$+$i **reread** %3%^%s%I$^$G$N%3%^%s%I$NL58B%k!<%W$rK\<AE*$K<BAu7F$$$k3HKJj^$9!#($7$+$7!"3l$O2?$b0-$$$3HGO"j^$;$s!#**reread** $O **if** HAH_9go;k3HGHF$bM-MQ$J%3%^%s%IHJj^$9!#) I8=`F~NO$+iNF~NO$N>l9g$O!"**reread** %3%^%s%I$O2?$b1F6A$rM?$($^$;$s!#

Nc:

%U%!%$%k"looper" $,<!$Nh&$J%U%!%$%k$G

```
a=a+1
plot sin(x*a)
pause -1
if(a<5) reread
```

$=$7$F!"**gnuplot** $+$i<!Nh$&$K<B9T9kH7$^$9!#

```
a=0
load 'looper'
```

9k$H!"pause $N%a%C%;!<%8$GJ,3d5l$?5 2s$N%W%m%C%H$,9T$olk3HKJj^$9!#

%U%!%$%k"data" $,!"3F9T$K!"0 $+$i10 $^$G$NHOOO(yrange) $N6 DN%G!<%?$r;}$A!":G=i$,x :BI8$G!"$=$NB>$O5 DN0[Jk4X?t$N!"$=$Nx GNCMG"kH7^$9!#$=7F!"%U%!%$%k"plotter" $,

```
c_p = c_p+1
plot "$0" using 1:c_p with lines linetype c_p
if(c_p <  n_p) reread
```

$G!"**gnuplot** $+$i<!Nh$&$K<B9T9kH7$^$9!#

```
n_p=6
c_p=1
unset key
set yrange [0:10]
set multiplot
call 'plotter' 'data'
unset multiplot
```

9k$H!"5 DN%W%m%C%H$r9go;$?1 DN%0%i%U%,G-$^$9!#yrange $O!"multiplot %b!<%I$G:G=iNbNKB3$1$F=q$+$l$k5 DN%0%i%U%,!"F1$8<4$r;}Dh$&$K!"L@<(E*$K;XDj$9kI,MW,$"j^$9!#@~<o$b;XDj$7J1lPJj$^$;$s!#$5bJ$$$H!"A4FN%0%i%U%,F1$8@~<o$G=q$+$lk3HKJj$^$9!#%"%K%a!<%7%g%s$N%5%s%W%k$H7F!"demo %G%#%l%/%H%j$Nanimate.dem $b;2>H$7F/$@$5$$!#

Reset

%3%^%s%I**reset** $O!"**set** %3%^%s%I$GDj5AG-$k!"%0%i%U$K4X9kA4FN%*%W%7%g%s$r%G%U%)%k%H$NCMKLa7$^$9!#3N%3%^%s%I$O!"load 7?%3%^%s%I%U%!%$%k$r<B9T7?8e$G%G%U%)%k%H$N@_Dj$rI|5"7?$j!"@_Djr?$/5sJQ99$7$?8e$G85$N>uBV$KLa7?$$H$-$JIKJXMx$G$9!#

0J2<NbNO!"**reset** $N1F6A$r<ul^$;$s!#

‘set term‘ ‘set output‘ ‘set loadpath‘ ‘set fontpath‘ ‘set linetype‘
‘set encoding‘ ‘set decimalsign‘ ‘set locale‘ ‘set psdir‘ ‘set fit‘

reset $O! "I,$:7b%W%m%0%i% 'N)$A>e$,C?=i4 |>uBVKOLa5J$$$3HKCm0U7F$/$@$5$$$! #$=$l$O! "=i4 |@_D j%U% !%$%k gnuplotrc $d $HOME/.gnuplot Fb$N%3%^%s%I$G%G%U%)%k%H$NCM$rJQ99$7$?>l9g$O! "$=$l$b%j%;%C%H$5lF7^$&$+iG$9! #$7$+$7 **reset session** H9lP! "$=$liN%3%^%s%I$b:F<B9T$7$^$9! #

reset session $O! "%f! <%6Dj5AJQ?t! "%f! <%6Dj5A4X?t9YFr:o=|$7! "%G%U%)%k%H$N@_Dj$rI|5"$7! "%7%9%F%'A4BN$N=i4 |@_Dj%U% !%$%k gnuplotrc $H8D?MMQ$N=i4 |@_Dj%U% !%$%k $HOME/.gnuplot $r:F<B9T$7$^$9! #0J2<;2>H**initialization (p. 42)**! #

reset errors $O! "%(%i! <>uBVJQ?t GPVAL_ERRNO $H GPVAL_ERRMSG N_$r%/%j%"7^$9! #

reset bind $O! "%-! <Dj5A$r%G%U%)%k%H$N>uBV$KI|5"7^$9! #

Save

=q<O:

```
save  {functions | variables | terminal | set | fit} '<filename>'
```

Il$b;XDj$7J+C?>l9g$O! "**gnuplot** $O! "%f! <%6Dj5A4X?t! "JQ?t! "set $G@_Dj$9$k%*%W%7%g%s! ":G8e$K<B9T7?**plot** ($^$?$O**splot**) %3%^%s%I$NA4FrJ]B8$7$^$9! #

save $O! "%F%-%9%H7A<0$G=PNC7^$9! #$^$?! "$3$N%U%!%$%k$O**load** %3%^%s%I$GFI$_9~$'3H$,$G$-$^$9! #**set** %*%W%7%g%sIU$-! "$^$?$O2?$b%*%W%7%g%srD1:$K**save** $r<B9T$7$?>l9g! "**terminal** $NA*Br$H**output** $N%U%!%$%kL>$O%3%a%s%H5-9f$D$-$G=q$-=P$5l^$9! #$3lO$=$N=PNC%U%!%$%k$rB>$N4D6-$K%$%s%9%H! <%k$5l?gnuplot>e$GF0$+$9>l9g$K! "=$@5$J7K;H$($kh&K9$k! "$"$k$$$O$&$C$+$j%U%!%$%k$r>e=q$-$7F7$^$C$?$j9k4m81@-rHr1$k! "$H$$$C$?0UL#$,$"$j$^$9! #

save terminal $O! "**terminal** $N>uBV$r! "%3%a%s%H5-9frD1:$K=q$-=P7^$9! #$3lO<g$K! "$AgCHN4V$@$1**terminal** $N@_Dj$rF~lBX(! "$=$N8eJ]B8$7$F$*$$$?**terminal** $N>uBV$rFI$_9~$'3H$G0JA0$N terminal $N@_Dj$KLa$9>l9g$JIKLrN)A^$9! #$?$@! "C10l$N gnuplot %;%C%7%g%sGO! "8=:_$N terminal $rJ]B8/I|85$9$kB>$NJ}K!G"$k%3%^%s%I**set term push** $H**set term pop** $r;H$&J}$,$'7m$$$$+b7l^$;$s! #0J2<;2>H**set term (p. 168)**! #

save fit $O! "D>6a$N**fit** %3%^%s%I$G;HMQ$7$?JQ?t$N$_$rJ]B8$7$^$9! #$=$NJ]B8%U%!%$%k$O! "8e$G**via** %-! <%o! <%I$r;H$&3H$Gfit %3%^%s%I$N=i4 |2=MQ$N%Q%i%a! <%?%U%!%$%kH7$FMxMQ$G$-$^$9! #

%U%!%$%kL>$O0zMQId$K0O$olF$$$JlPJj$^$;$s! #

FCJL$J%U%!%$%kL>"-" Kh$j**save** %3%^%s%I$KI8='\=PNC$K=PNC$5$;$k3H$,$G$-$^$9! #popen 4X?t$r%5%]! <%H9kh&$J%7%9%F%'(Unix JI) GO! "save $N=PNC$r%Q%$%W7PM3$GB>$N30It%W%m%0%i%'$KEO$9$3H,G-$^$9! #$=$N>l9g! "%U%!%$%kL>$H7F%3%^%s%IL>$N@hF,$K'|' rD1?bN$r;H$$$^$9! #$3lO! "**gnuplot** $H%Q%$%WrDL7$FDL?.$9$k%W%m%0%i%'$K! "**gnuplot** $NFbIt@_Dj$K4X9k<sHx014S7?%$%s%?! <%U%'! <%9$rDs6!7^$9! #>\:Y$O! "0J2<;2>H**batch/interactive (p. 22)**! #

Nc:

```
save 'work.gnu'
save functions 'func.dat'
save var 'var.dat'
save set 'options.dat'
save term 'myterm.gnu'
save '-'
save '|grep title >t.gp'
```

Set-show

set %3%^%s%I$O<B$KB?$/$N%*%W%7%g%s$r@_Dj$9kN$K;H$ol^$9! #$7$+$7! "**plot**, **splot**, **replot** %3%^%s%I$,M?$(ilk^$G2?$bI=<(7^$;$s! #

show %3%^%s%IO=li$N@_DjCM$rI=<(7^$9! #**show all** G=liA4FrI=<(7^$9! #

set %3%^%s%I$GJQ99$5l?%*%W%7%g%s$O! "$=lKBP1~9k**unset** %3%^%s%I$r<B9T$9k3HG%G%U%)%k%H$N>uBV$KLa$9$3H,G-$^$9! #0J2<$b;2>H**reset (p. 104)**! #3l$OA4$F$N%Q%i%a! <%?$N@_Dj$r%G%U%)%k%H$NCMKLa7$^$9! #

set $H **unset** %3%^%s%I$K$O7+$jJV$7@a$bMxMQG-$^$9!#0J2<;2>H **plot for (p. 98)**!#

3Q$NC10L (angles)

%G%U%)%k%HGO **gnuplot** $O6K:BI8%0%i%U$NFHN)JQ?t$NC10L$O%i%8%"%s$r2>Dj$7$^$9!#**set polar** $NA0$K **set angles degrees** $r;XDj$9kH!"$=$NC10LOEYKJj!"%G%U%)%k%H$NHCO0C$O [0:360] HJj^$9!#$3lO%G!<%?%U%!%$%k$NIA2hGFCKJXMxG7g&!#3QEY$N@_Dj$O!"**set mapping** %3%^%s%I$r@_Dj$9k3HKhj3<!85GbM-8z$G$9!#

=q<0:

```
set angles {degrees | radians}
show angles
```

set grid polar $G;XDj$5lk3QEY$b!"**set angles** $G;XDj$7$?C10L$GFI$^$lI=<(5l$^$9!#

set angles OAH_9~$_4X?t sin(x), cos(x), tan(x) $N0z?t$d asin(x), acos(x), atan8x), atan2(x), arg(x) $N=PNC$K$b1F6A$rM?$($^$9!#AP6J@~4X?t$d!"%Y%C%;%k4X?t$N0z?t$K$O1F6A$rM?$($^$;$s!#7+$7!"J#AG?t$r0z?tH9$k5UAP6J@~4X?t$N=PNCKO1F6A$,=P$^$9!#$=li$N4X?t$,;HolkH$-$O!"**set angles radians** $OF~=PNO$N0z?t$N4V$K0l4S@-$r;}$C$?4IM}$r<B8=7F$$$J1lPJj^$;$s!#

```
x={1.0,0.1}
set angles radians
y=sinh(x)
print y          #{1.16933, 0.154051} $HI=<(
print asinh(y)   #{1.0, 0.1} $HI=<(
```

7+$7!"

```
set angles degrees
y=sinh(x)
print y          #{1.16933, 0.154051} $HI=<(
print asinh(y)   #{57.29578, 5.729578} $HI=<(
```

0J2<$b;2>H

poldat.dem: **set angles** $rMQ$$?6K:BI8IA2h$N%G%b

Lp0u (arrow)

set arrow %3%^%s%I$r;H$&3HKh$j!"%0%i%U>e$NG$0U$N0LCV$KLp0u$rI=<(9k3H$,$G$-$^$9!#

=q<0:

```
set arrow {<tag>} from <position> to <position>
set arrow {<tag>} from <position> rto <position>
set arrow {<tag>} from <position> length <coord> angle <ang>
set arrow <tag> arrowstyle | as <arrow_style>
set arrow <tag> {nohead | head | backhead | heads}
                {size <headlength>,<headangle>{,<backangle>}}
                {filled | empty | nofilled | noborder}
                {front | back}
                {linestyle <line_style>}
                {linetype <line_type>} {linewidth <line_width>}
                {linecolor <colorspec>} {dashtype <dashtype>}

unset arrow {<tag>}
show arrow {<tag>}
```

%?%0 <tag> $O3FLp0u$r<lJL9k@0?t$G$9!#%?%0$r;XDj$7J>19g$O!"$=$N;~E@$GL$;HMQ$N:G$b>.$5$?t$,<+F0E*$K3d$jEvFil^$9!#%?%0$r;H$&$3HG!"FCDj$NLp0u$rJQ99$7$?j!":o=|7?jG-$^$9!#4{$KB8:_$9$kLp0u$NB0@-$rJQ99$9$k>19g$O!"%?%0$rL@<($7$?**set arrow** %3%^%s%I$GJQ92U=j$r;XDj$7F/$@$5$$!#

Lp0u$N:G=i$NC<E@$N0ICV$O!">o$K"from" $G;XDj$7$^$9$,!"$b$&0l$D$NC<E@$O0J2<$G@bL@$9$k3 DN0[Jk;EAH$_$N$$:l+$G;XDj$G$-$^$9!#<position> $Ox,y $"$k$$Ox,y,z $G;XDj$7$^$9!#$=$7F=$NA0$K:BI87O$rA*Br$9k?aK**first**, **second**, **graph**, **screen**, **character** rCV/3H$,$G$-$^$9!#:BI8$r;XDj7J1l$P%G%U%)%k%H$G$O0 $H8+$J5l$^$9!#>\:Y$O0J2<;2>H: **coordinates (p. 24)**!#:G=i$NC<E@$KBP9k:BI8;XDj;R$O!"2HVL\$NC<E@KO1F6A7^$;$s!#

1) "to <position>" $O!"$b$&0l$D$NC<E@$N@dBP:BI8$r;XDj$7$^$9!#

2) "rto <position>" $O!"'from" $N0ICV$+iN$:$l$r;XDj$7$^$9!#3N>l9g!"@~7A<4(HsBP?t<4)!"$*$h$S**graph**, **screen** :BI8KBP7FO!";CE@$H=*E@$N5wN%$,M?$(il$?AjBPE*$JCM$KBP1~$7$^$9!#0lJ}!"BP?t<4KBP7FO!"M?$($il?AjBPE*JCMO!";CE@$+$i=*E@XNG\?t$KBP1~$7$^$9!#hC$F!"BP?t<4$N>l9g!"AjBPE*JCMH7F0dIiNCM$rM?$(k3HO5v5l$^$;$s!#

3) "length <coordinate> angle <angle>" $O!"%0%i%UU?LIFb$G$NLp0u$NU}8~$r;XDj$7$^$9!#length KOG$0U$N:BI87OrE,MQG$-$^$9!#angle $NC10L$O>oKEYKJC$F$$$^$9!#

Lp0u$NB>$NB0@-$b!"$"$i+$8$aDj5A$7$?Lp$N%9%?%$%k$G!"$^$?$O%3^%s%I**set arrow** G=l>$lM?$(k3H,2DG=$G$9!#Lp0u$NB>$NB0@-$N>\:Y$K$D$$$F$O0J2<;2>H: **arrowstyle (p. 161)**!#

Nc:

86E@$+$i(1,2) XNLp0u$r%f!<%6Dj5A:Q$N%i%$%s%9%?%$%k5 GIA/KO:

```
set arrow to 1,2 ls 5
```

IA2hNN0h$N:82<3Q$+$i(-5,5,3) $X%?%0HV9f3 $NLp0u$rIA$/$K$O:

```
set arrow 3 from graph 0,0 to -5,5,3
```

Lp0u$NC<$r1,1,1 $KJQ99$7!"Lp@h$r30$7$FI}$r2 K9kK$O:

```
set arrow 3 to 1,1,1 nohead lw 2
```

x=3 $N=j$X%0%i%U$N2<$+$i>e$^$G1tD>@~$rIA$/$K$O:

```
set arrow from 3, graph 0 to 3, graph 1 nohead
```

T;z7?$NLp@h$rN>C<$K;}$D1tD>J}8~NLprIA$/$K$O:

```
set arrow 3 from 0,-5 to 0,5 heads size screen 0.1,90
```

;CE@$+$i$NAjBPE*$J5wN%$r%0%i%U:BI8$GM?$($FLprIA/KO:

```
set arrow from 0,-5 rto graph 0.1,0.1
```

x $NBP?t<4$KAjBPE*$J=*E@$r;XDj7FLprIA/>l9g:

```
set logscale x
set arrow from 100,-5 rto 10,10
```

3l$O100,-5 $+$i1000,5 $^$GNLprIA$-$^$9!#@~7A<4(y) KBP7FOAjBPE*$J:BI810 $,":910" $r0UL#$9kN$KBP$7!"BP?t<4(x) KBP7FOAjBPE*$J:BI810 $O"G\?t10" H7$FF/$-$^$9!#

2HV$NLp0u$r>C9K$O:

```
unset arrow 2
```

A4FNLp0u$r>C$9KO:

```
unset arrow
```

A4FNLp0u$N>pJs$r(%?%0$N=g$K)8+kK$O:

```
show arrow
```

Lp0u$N%G%b

<+F0=L<\ (autoscale)

<+F0=L<\5!G=(autoscale) $Ox, y, z $N3F<4$KBP7FFHN)$K!"$^$?$O13g7F;XDjG-$^$9!#%G%U%)%k%HGOA4FN<4KBP7$F<+F0=L<\@_Dj$r9T$$$^$9!#?^NCf$N0lIt$NIA2h(**plot**) NAHN$_$r85$K autoscale 7?$>l9g$O!"$=$NBP>]GJ$$ **plot** $K%U%i%0 **noautoscale** rD1k3H$,$G$-$^$9!#0J2<;2>H: **datafile (p. 85)**!#

=q<0:

```
set autoscale {<axes>{|min|max|fixmin|fixmax|fix} | fix | keepfix}
set autoscale noextend
unset autoscale {<axes>}
show autoscale
```

$3$3$G!"<axes> (<4) $O **x**, **y**, **z**, **cb**, **x2**, **y2**, **xy** $N$$$:l+$G$9!#**min** $^$?$O **max** $r<4$KDI2C;XDj9k$H (**xy** GO;H$($^$;s,) $=$l$O **gnuplot** K=$N<4$N:G>.CM!"$^$?$O:GBgCMN_$r<+F0=L<\$5$;$k3HKJj^$9!#<4$b2?$b;XDj$5lF$$$J$$>l9g$OA4$F$N<4$,BP>]HJj^$9!#

%G%U%)%k%HGO!"<+F0=L<\5!G=$O<4$NHO0O$N8B3&$r!"IA2h%G!<%?A4BN$r4^$`!":G$b6a$$L\@9$j%i%Y%k0LCV$K@_Dj7^$9!#%-!<%o!<%I **fixmin**, **fixmax**, **fix**, **noextend** $O!"<!$NL\@9$j0LCV$^GNHO0O$N<+F03HBg$r gnuplot $K9T$o$;$J$$$h$&$K7^$9!#$=$N>l9g<4$NHO0O$N8B3&$O!"0lHVC<K"$k%G!<%?E@$N:BI8CM$K40A4$K0lCW7^$9!#**set autoscale noextend** $O!"**set autscale fix** $HF1$8$G$9!#<4$NHO0O;XDj%3%^%s%I$N8emK%-!<%o!<%I **noextend** $rDI2C$9lP!"0lDN<4$NHO0O$N1dD95!G=$@$1L58zK9k3HbG-$^$9!#Nc:

```
set yrange [0:*] noextend
```

set autoscale keepfix $O!"fix $N@_Dj$rJQ99$;$:$K;D$7$?$^$^!"$9YF$N<4$r<+F0=L<\$K7^$9!#

<+F0=L<\5!G=$r;H$&H-$O!"IA2hHO0O$O<+F0E*$K3d$j=P5l!"=>B0JQ?t<4(**plot** NH$-$O y <4!"**splot** NH$-$O z <4) $O!"4X?t$d%G!<%?$NCM0h$,<}$^$kh&$K@_Dj$5l^$9!#

=>B0JQ?t<4 (y $^$?$O z) $N<+F0=L<\5!G=$,;XDj5l$F$$$J$$>l9g$O!"8=:_$N y $d z $NIA2hHO0O$,$=$N$^$^;Hol$^$9!#

FHN)JQ?t<4 (**plot** NH$-$O x <4!"**splot** NH$-$O x,y <4) $N<+F0=L<\5!G=$,;XDj5l$F$$$k>l9g$O!"IA2h$5lkA4FN%G!<%?%U%!%$%k$NE@$,<}$^kh$&$KDj5A0hrHkh$&$KJj$^$9!#%G!<%?%U%!%$%k$, 1 Db;XDj5l$F$$$J$$>l9g$O!"<+F0=L<\5!G=$OJs$N8z2L$b$"$j$^$;$s!#$D$^$j!"4X?tN_$,;XDj$5lF$$$F%G!<%?!<%U%!%$%k$r;HoJ$$>l9g$O!"x <4$NIA2hHO0O(z = f(x,y) $rIA2h$7$F$$$kH-$O y <4$b) $O1F6A$r$&$1$^$;$s!#

HO0O$K4X$9kh$j>\$7$$>pJs$K4X$7FO!"0J2<;2>H: **set xrange (p. 176)**!#

G^2pJQ?t%b!<%I (parametric) Gb<+F0=L<\5!G=$OM-8z$G$9(0J2<;2>H:**set parametric (p. 148)**)!#3N>l9g!"hjB?$/$N=>B0JQ?t$,$"kN$G!"x, y, z 3F<4$K4X7F!"hjB?$/$N@)8f$,9T$ol^$9!#G^2pJQ?t%b!<%I$G$NFHN)JQ?t (2>JQ?t) $O **plot** GO t $G **splot** GO u, v $G$9!#$=$7$FG^2pJQ?t%b!<%I$G$O!"<+F0=L<\5!G=$O (t, u, v, x, y, z) $NA4$F$NIA2hHO0O$r@)8f$7!"x, y, z $NHO0O$N<+F0@_Dj$r40A4$K9T$$$^$9!#

<+F0=L<\5!G=$O!"6K:BI8%b!<%I (polar mode) Gb **plot** $NG^2pJQ?t%b!<%I$HF1MM$K5!G=$7$^$9$,!"6K:BI8%b!<%I$G$O **set dummy** $GFHN)JQ?t$r t $+$iJQ99$9$kG-$k (0J2<;2>H: **set dummy (p. 121)**) $H$$$&3HD%$,$"j^$9!#

L\@9j,Bh2 $N<4$KI=<(5l!"7+b3li$N<4$KBP9kIA2h$,9T$olJ$+$C$?>l9g$K$O!"x2range $H y2range $O xrange $H yrange NCMr<u$17Q$.$^$9!#3l$O!"HO0ON:$i7N<B9T$d!"HO0O$r@0?t8D$NL\@9$jI}$K<+F0?-=L9k!VA0!W$K9T$$$^9N$G!">l9g$KhC$FM=4|$7$J$$7k2Lrb$?$i$92DG=@-$,$"$j$^$9!#3lrHr1kN$K!"Bh2 <4$NHO0O$rBh1 <4$NHO0O$KL@<(E*$K%j%s%/(link) 9kJ}K!$,$"j^$9!#0J2<;2>H: **set link (p. 136)**!#

Nc:

0J2<$O y <4$N<+F0=L<\5!G=$r;XDj$7$^$9(B>$N<4$K$O1F6A$rM?$($^$;$s):

```
set autoscale y
```

0J2<$O y <4$N:G>.CMKBP7FN$_<+F0=L<\5!G=$r;XDj7^$9(y <4$N:GBgCM!"$*$h$SB>$N<4KO1F6A$rM?$($^$;$s):

```
set autoscale ymin
```

0J2<$O x2 <4$NNY$NL\@9$jXN<+F0HO0O3HBg5!G=$rL58z$K$7!"$hCFIA2h%G!<%?Fb!"$^$?$O4X?t$KBP9kCzEY$NIA2hHO0O$r0];}7^$9:

```
set autoscale x2fixmin
set autoscale x2fixmax
```

0J2<$O x, y N><4$N<+F0=L<\5!G=$r;XDj$7$^$9:

```
set autoscale xy
```

0J2<$O x, y, z, x2, y2 A4<4$N<+F0=L<\5!G=$r;XDj$7$^$9:

```
set autoscale
```

0J2<$O x, y, z, x2, y2 A4<4$N<+F'0=L<\5 !G=$r6X; _$7$^$9:

```
unset autoscale
```

0J2<$O z <4$N$_$K$D$$$F<+F'0=L<\5 !G=$r6X; _$7$^$9:

```
unset autoscale z
```

G^2pJQ?t%b! <%I **(parametric)**

G^2pJQ?tI=< (%b! <%I (**set parametric**) K*$$$F$O! "xrange $b yrange $HF'1MM$K=L<\$rJQ$ (k3H,G-$^$9! #D^$j! "G^2pJQ?t%b! <%I$K$*$$$F$O! "x <4J}8~$b<+F'0E*$K=L<\$,D4@0$5$l! "IA3&H7$F$$$kG^2pJQ?tI=<($N4X?t$,<}$^$kh&KJj^$9! #$bAm$s! "y <4J}8~$bG^2pJQ?t%b! <%IGJ$$; ~F'1MM$K<+F'0E*$K=L<\$rJQ$($^$9! #x <4$K$D$$$F<+F'0=L<\5 !G=$,@_Dj$5lF$$$J$$>l9g$O! "8=:_$N x $NHO0O$,; Hol$^$9! #

%G! <%?%U% !%$%k$OG^2pJQ?t%b! <%IGb$=$&GJ$$>uBVGbF'1MM$KIA2h$5l^$9! #$7$+$7! "%G! <%?%U% !%$%k$H4X?t$,:.:_$7$F$$$k>l9gKO! "0c$$$,$"$j$^$9: G^2pJQ?t%b! <%IGJ1l$P! "x $N<+F'0=L<\5 !G=$O! "4X?t$NHO0O$r%G! <%?$NIA2hHO0O$K9go;$^$9! #7+$7G^2pJQ?t%b! <%I$G$O%G! <%?$NHO0O$O4X?t$NHO0O$K1F6A$7$^$;$s! #

$=$lKO! "JR<jMnAKJi$J$$$h$&$K**set autoscale t** $H$$$&%3%^%s%I$bMQ0U$5lF$$$^$9! #$7$+$7$=$N8z2L$OHs>o$K>.$5$$$bNG$9! #<+F'0=L<\5 !G=$,@_Dj5l$F$$$k$H! "**gnuplot** $, t $NHO0O$,L5$/$JCF7^$&$HH=CG7?>l9g$KHO0O$r>/$7D4@0$7$^$9! #<+F'0=L<\5 !G=$,@_Dj$5lF$$J$$$H3Nh&JH$-$K$O% (%i! <$HJj$^$9! #3Nh&$JF'0:n$O<BO"$^$j0UL#$,$J$/! "$hCF**set autoscale t** $H$$$&%3%^%s%I$OB8:_0U5A$K5?Ld$,$"j^$9! #

splot GO>e5-$NH/A [$N85$K3HD%$5lF$$$^$9! #<+F'0=L<\5 !G=$,@_Dj5l$F$$$k>l9g! "x, y, z $N3FIA2hHO0O$O7W; ;7k2L$,<}$^kh$&$K@_Dj5l=L<\D4@0$5$l$^$9! #

6K:BI8%b! <%I **(polar)**

6K:BI8%b! <%I(**set polar**) GO! "xrange $H yrange $O<+F'0=L<\%b! <%I$GOJ$/$Jj^$9! #F'07B<4$NHO0O@)8BMQ$K**set rrange** $r; HMQ$7$?>l9g! "xrange $H yrange O=lK9g$&h&$K<+F'0E*$KD4@0$5l^$9! #7+$7! "5iK=lrD4@0$7$?1l$P! "$=$N8e$KL@<(E*$K xrange $d yrange %3%^%s%I$r; H$&$3H,G-$^$9! #0J2<; 2>H: **set rrange (p. 159)**! #

0J2<$b; 2>H

```
6K:BI8$N%G%b! #
```

>~$jK@ (bars)

%3%^%s%I **set bars** $O8m:9%0%i%U (errorbar) $NN>C<! "$*hS boxplot KD$/H"$R2NN>C<$N%^! <%/$r@)8f7^$9! #

=q<O:

```
set bars {small | large | fullwidth | <size>} {front | back}
unset bars
show bars
```

small $O0.0, **large** $O1.0 $HF'1$8$G$9! #%5%$%:$r; XDj7J1l$P%G%U%)%k%H$NCM$O1.0 $G$9! #

%-! <%o! <%I **fullwidth** $O! "errorbar $rH<$& boxplot $H histograms KN$_4XO"7^$9! #$3$1$O errorbar $NN>C<$NI}$r! "BP1~$9$kH"$NI}$HF'1$8$K@_Dj$7$^$9$,! "H"$NI}<+BN$rJQ99$9k3HO$"$j$^$;$s! #

%-! <%o! <%I **front**, **back** $O! "EI$jDY$7D9J}7A$N$D$$$?errorbar N_$K4XO"$7$^$9 (boxes, candlesticks, histograms)! #

Bind

8=:_$N%[%C%H%-! <$N3djEvF (binding) $rI=< ($7$^$9! #0J2<; 2>H: **bind (p. 40)**! #

Bmargin

%3%^%s%I **set bmargin** $O!"2<It$NM>Gr$N%5%$%:$r@_Dj$7$^$9!#>\:Y$O0J2<;2>H **set margin (p. 138)**!#

%0%i%U$NOH@~ (border)

set border $H **unset border** $O **plot** $d **splot** GN%0%i%UNOHNI=<($r@)8f$7$^$9!#OH$OI,$:7b<4HO0lCW7J$$$3HKCm0U7F$/$@$5$$!#**plot** GOBgDq0lCW7^9,!"**splot** GOBgDq0lCW7F$$$^$;$s!#

=q<0:

```
set border {<integer>}
           {front | back | behind} {linewidth | lw <line_width>}
           {{linestyle | ls <line_style>} | {linetype | lt <line_type>}}
set border
show border
```

set view 56,103 Nh$&$KG$0U$NJ}8~$GI=<($5l&$k **splot** GO!"x-y J?LL>e$N4 DN3Q$O<jA0(**front**), 8e $m(**back**) , :8(**left**), 1&(**right**) Nh$&$K8FPl$^$9!#bAms3NF1$84 DN3Q$OE70f$NLLKb$"j^$9!#hC$F!"Nc$($P x-y J?LL>e$N8emHl&$N3QrDJ06-3&$r"Dl$N1&8e$m(bottom right back)" $H8@$$!"Dl$HE70f$N<jA0$N3Q$rDJ$06-3&$r"1tD><jA0(front vertical)" $H8F$V3HK7$^$9(3NL?L>K!$O!"FI<T$,2<$NI=$rM}2r9k$?$a$@$1$K;H$ol^$9)!#

OH$O!"12 %S%C%H$N@0?t$KId9f2=$5lF$$$^$9:2<0L4 %S%C%H$O **plot** KBP9$k30OH!"**splot** KBP7FOIlLL$N30OH!"<!$N4 %S%C%H$O **splot** $N1tD>$J30OH!"$=$7$F>e0L4 %S%C%H$O **splot** $NE70fLL$N30OH$r@)8f$7$^$9!#hC$F30OH$N@_Dj$O!"<!$NI=$NBP1~$9$k9'L\$N?t;zNOBKJj$^$9:

%0%i%U6-3&$NId9f2=		
%S%C%H	plot	splot
1	2<	Dl$N:8<jA0
2	:8	Dl$N:88e$m
4	>e	Dl$N1&<jA0
8	1&	Dl$N1&8e$m
16	8z2L$J$7	1tD>:8
32	8z2L$J$7	1tD>8e$m
64	8z2L$J$7	1tD>1&
128	8z2L$J$7	1tD>$N<jA0
256	8z2L$J$7	E70f$N:88e$m
512	8z2L$J$7	E70f$N1&8e$m
1024	8z2L$J$7	E70f$N:8<jA0
2048	8z2L$J$7	E70f$N1&<jA0

%G%U%)%k%H$N@_DjCM$O31 $G!"$3lO **plot** GO4 J}8~$N30OHA4$F!"**splot** GODlLL$NOH@~A4It$Hz<4rIA/3H$r0UL#$7$^$9!#

2<!85IA2hGO6-3&O9YF$NIA2hMWAG$N0lHV>eKIA+l^$9(**front**)!#$b$76-3&$rIA2hMWAG$N2<$KIA$+$;$?$>19g$O!"**set border back** H7F/$@$5$$!#

3<!851#@~=hM}(hidden3d) IA2hGO!"DL>o$O6-3&$r9=@.9k@~$bIA2hMWAG$HF1MM$K1#@~=hM}$NBP>]KJj^$9!#**set border behind** H9kH3N%G%U%)%k%H$N5sF0$,JQoj$^$9!#

<line_style>, <line_type>, <line_width> $r;XDj$7$F!"OH@~$NIA2hK=li$rH?1G$5$;$k3H$,$G$-$^$9(8=:_$N=PNOAuCV$,%5%]!<%H$9kbNK8BDj5l$^$9)!#

plot GO!"Bh2<4$rM-8z$K9k3H$G!"2<$H:80J30$N6-3&$KL\@9jrIA$/$3H,G-$^$9!#>\:Y$O!"0J2<;2>H **xtics (p. 177)**!#

"unset surface; set contour base" JIKhCF **splot** $GDlLL$KN_IA2h9k>19g!"1tD>@~$dE70f$O$=$li,;XDj5l$F$$$F$bIA2h$5l^$;$s!#

set grid $N%*%W%7%g%s 'back', 'front', 'layerdefault' Gb!"IA2h=PNO$N6-3&@~$r=q$/=gHV$r@)8fG-$^$9!#

Nc:

0J2<$O!"%G%U%)%k%H$NOH@~rIA-$^$9:

```
     set border
```

```
     set border 3
```

```
     set border 4095
```

```
     set border 127+256+512 # ...
```

```
     unset xtics; unset ytics; set x2tics; set y2tics; set border 12
```

...(boxwidth)

... **set boxwidth** ... **boxes**, **boxerrorbars**, **boxplot**, **candlesticks**, **histograms** ...

...

```
     set boxwidth {<width>} {absolute|relative}
     show boxwidth
```

... **set boxwidth** ... **relative** ... (boxwidth) ... **absolute** ... **set log (p. 137)**) ... boxwidth ...

... **boxes** ... **boxerrorbars** ... **style boxes (p. 47)**,**style boxerrorbars (p. 47)**! ...

```
     set boxwidth
```

```
     set boxwidth -2
```

plot ... **using** ...

```
     plot 'file' using 1:2:3:4:(-2)
```

```
     set boxwidth 0.5 relative
```

```
     set boxwidth 2 absolute
```

...(color)

gnuplot ... **set color** ... **set monochrome (p. 139)**, **set linetype (p. 135)**, **set colorsequence (p. 112)**! ...

?'=d2sNs (colorsequence)

=q<0:

```
set colorsequence {default|classic|podo}
```

set colorsequence default $O!"=PNO7A<0$K0MB8$7$J$$8 ?'$N=d2sNs$rA*Br7^$9!#0J2<;2>H: **set linetype (p. 135), colors (p. 36)**!#

set colorsequence classic $O!"=PNO7A<0JL$K$=$N%I%i%$%P$,MQ0U9k@~?'NNsrA*Br7^$9!#?'$N<dN'$O!"4 ?'$+$i100 ?'D6$^$GI}$,$"$j$^$9$,!"$=$NB?$/$O!"@V!"NP!"@D!";g!"?e?'!"2+?'!"$G;O$^j^$9!#$3l,0JA0NHGNgnuplot $N%G%U%)%k%H$N5sF0$G$9!#

set colorsequence podo $O!"Wong (2011) [Nature Methods 8:441] $G?d>)$5lF$$$k!"P 7?!"D 7? (Protanopia, Deuteranopia) $N?'<e<T$,MF0W$K6hJL$G$-$k8 ?'NAHrA*Br7^$9!#

$$:lN>19gGb!"?'Ns$ND9$5H=$N?'$K$D$$FO5iK%+%9%?%^%$:$G$-$^$9!#0J2<;2>H: **set linetype (p. 135), colors (p. 36)**!#

Clabel

3N%3%^%s%I$OHs?d>)$G$9!#Be$ojK **set cntrlabel** $r;HMQ$7F/$@$5$$!#**unset clabel** $O **set cntrlabel onecolor** $K!"**set clabel "format"** $O **set cntrlabel format "format"** KCV-49oC$F$$^$9!#

%/%j%C%T%s%0 (clip)

=q<0:

```
set clip {points|one|two}
unset clip {points|one|two}
show clip
```

%G%U%)%k%H$N>uBV:

```
unset clip points
set clip one
unset clip two
```

%0%i%UNN0h$N6-3&Fb$KCf?4$,$"$k%G!<%?E@$O!"$=$NE@$rI=$95-9f$N%5%$:$,$=$N5-9f$r6-3&@~$N30$KO_$@$7F7$^$&h&$J>19g$G$b!"DL>o$OIA2h7^$9!#**set clip points** $O!"2 <!85IA2h$G$=$Nh&$JE@$NCf?4$,%0%i%UNN0hFb$K$"$k>19gGb!"$=$Nh&$JE@$r%/%j%C%T%s%0$7$^$9(B($D$^$jIA2h7^$;$s)!#E@$NCf?4$,%0%i%UNN0h30K"kh$&$J%G!<%?E@$O!"7h$7$FIA2h$7$^$;$s!#

@~J,KD$$F$O!"$=$N0lJ}$NC<E@$,IA2hHC0O(xrange $Hyrange) $N30$K$"$k>19g$O!"DL>o$=$N@~J,$OIA2h7^$;$s!#**set clip one** $O!"0lJ}$NC<E@$,IA2hHC0O$N30K"$k@~J,$NHC0OFb$NItJ,$rIA2h9kh&$K **gnuplot** $K;X<($7$^$9!#**set clip two** $O!"N>J}$NC<E@$,IA2hHC0O$N30K"$k@~J,$NHC0OFb$NItJ,$rIA2h9kh&$K **gnuplot** $K;X<($7$^$9!#@~J,A4BN$,IA2hHC0O30$G$"$kh&$J@~J,$O7h7FIA2h7^$;$s!#

Cm0U:

* **set clip** $O!"IA2h%9%?%$%k **lines**, **linespoints**, **points**, **vectors** $G@8@.$5lkE@!"@~J,N_$K1F6A$7$^$9!#

* **pm3d** $N2 <!85<M1F$d6JLL$G;HMQ$9$k?'D9J}7A$N%/%j%C%T%s%0$O!"**set pm3d clip1in** $H **set pm3d clip4in** $G9T$$$^$9!#

* %*%V%8%'%/%H$N%/%j%C%T%s%0$O!"8D!9$N%*%V%8%'%/%H(object) $N **{clip|noclip}** B0@-$G@)8f7^$9!#

Ey9b@~%i%Y%k (cntrlabel)

=q<0:

```
set cntrlabel {format "format"} {font "font"}
set cntrlabel {start <int>} {interval <int>}
set contrlabel onecolor
```

set cntrlabel $O! "K^NcFb (%G%U%)%k%H) $+! "**splot ... with labels** $N:]$N%0%i%U>e$NEy9b@~$N%i%Y%k$r@)8f 7^$9! #8e<I$N>l9g! "%i%Y%k$O%i%Y%k5-=RB0@-$N "pointinterval" $K=>$C$F3FEy9b@~$K1hCFG [CV5l$^$9! #%G %U%)%k%HGO%i%Y%k$OEy9b@~$r9=@.9k 5 HVL\$N@~J,$N>e$KCV$+$l! "20 8D$N@~J,Kh$K7+jJV5l^$9! #$3$N %G%U%)%k%H$O! "0J2<$HF1$8$G$9:

```
set cntrlabel start 5 interval 20
```

3liNCM$O%3%^%s%I **set cntrlabel** $G! "$"$k$$$O **splot** %3%^%s%I$K4V3V$r;XDj9k3H$GJQ99$G$-$^$9:

```
set contours; splot $FOO with labels point pointinterval -1
```

4V3VrIiNCM$K@_Dj$9kH! "%i%Y%k$O3FEy9b@~$K1 D@1D$-$^$9! #$7$+$7**set samples** $+**set isosamples** $,Bg$-JCMN>l9g$OB?$/$NEy9b@~$r%i%Y%k0lD@1GIA$-$^$9! #

K^Nc (key) KO! "Ey9b@~%i%Y%kr=l>lN@~<o (linetype) $r;HMQ$7$F=q$-$^$9! #%G%U%)%k%HGO! "@~<o<+ ?H$,3FEy9b@~$N%l%Y%k$rM?$(kN$G! "$=l>lKBP9kJL! 9$N%i%Y%k$,8=l^$9! #%3%^%s%I **set cntrlabel onecolor** O9YF$NEy9b@~$rF1$8@~<o$GIA2h9kNG! "K^NcKO0lDN%i%Y%kN_$r=q$-$^$9! #3N%3%^%s %I$O! "8E$$%3%^%s%I **unset clabel** rCV-49$($kbN$G$9! #

Ey9b@~@)8f (cntrparam)

set cntrparam $OEy9b@~$N@8@.J}K!! "$*$hS=lr3ji+$KIA2h$9$kJ}K!$r@)8f7^$9! #**show contour** $O 8=:_$N **contour** $N@_Dj$@1GJ/ **cntrparam** $N@_Dj$r$bI=<($7$^$9! #

=q<O:

```
set cntrparam { { linear
                | cubicspline
                | bspline
                | points <n>
                | order <n>
                | levels { auto {<n>} | <n>
                           | discrete <z1> {,<z2>{,<z3>...}}
                           | incremental <start>, <incr> {,<end>}
                         }
              }
            }
show contour
```

3N%3%^%s%I$O2 DN5!G=$r;}CF$$$^$9! #0l$D$OEy9b@~>e$NE@(%G! <%?E@$N@~7AJd4V! "$"$k$$$O4X?t$NI8K\ 2=(isosample) Kh$kE@) GNz NCMN@_Dj$G! "$b$&0l$D$O! "$=Nh$&$K7hDj5l$?z $,Ey$7$$E@F1;N$rEy9b @~$G7k$VJ}K!$N@)8f$G$9! #<n> $O@0?t7?$NDj?t<0! "<z1>, <z2> ... OG0U$NDj?t<0$G$9! #3F%*%W%7%g%sJQ?t $N0UL#$O<!NDLj$G$9:

linear, **cubicspline**, **bspline** — 6a;w(Jd4V) J}K!$r;XDj$7$^$9! #**linear** Ji$P! "Ey9b@~$O6JLL$+$iF@il$?CM$r6hJ,E*$KD>@~$G7kS^$9! #**cubicspline** (3 <!%9%W%i%$%s) Ji$P! "6hJ,E*$JD>@~$O$$/VsJai+$JEy 9b@~$,F@ilkh$&$KJd4V5l$^$9$,! "B?>/GHBG$D2DG=@-$,$"j^$9! #**bspline** (B-spline) $O! "$h$j3j$i$+$J 6J@~rIA/3H$,J]>Z$5l^9,! "3l$Oz NEy7$$E@$NOLCV$r6a;w7F$$k$@$1$G$9! #

points — :G=*E*KO! "A4FNIA2h$O! "6hJ,E*$JD>@~$G9T$ol^$9! #$3$3$G;XDj9k?t$O! "**bspline** $^$?$O **cubicspline** GN6a;w$K;H$olk@~J,$N?t$r@)8f7^$9! #<B:]KO cubicspline $H bspline $N6h4V(6J@~@~J,) $N?t$O **points** $H@~J,$N?t$N@Q$KEy7/j^$9! #

order — bspline 6a;w$N<!?t$G$9! #$3$N<!?t$,Bg$-$/JkKDlF! "Ey9b@~OJai$+$KJj$^$9(bAms! " 9b<!$N bspline 6J@~$KJk[$I! "85$N6hJ,E*D>@~$+$i$ON%$l$F$$$-$^$9)! #3N%*%W%7%g%s$O **bspline** %b! <%I GN$_M-8z$G$9! #;XDjG-kCMO! "2 (D>@~) $+$i 10 $^$G$N@0?t$G$9! #

levels — Ey9b@~$N%l%Y%k$N?t$O! "**auto** (%G%U%)%k%H), **discrete**, **incremental** $HEy9b@~$N%l%Y%k?t <n> $G @)8f$7$^$9! #

auto GO! "<n> $O2>$N%l%Y%k$N?t$G$"$j! "<B:]$N%l%Y%k$N?t$O! "4JC1$J%i%Y%k$r@8@.$9kh$&$KD4@a5l$^ $9! #6JLL$Nz :BI8$, zmin $+$izman $NHOO$K$"$kH-! "Ey9b@~O=$N4V$Ndz $N@0?tG\$KJkh&$K@8@.$5 l^$9! #$3$3$G! "dz $O10 N"kY$->h$N1, 2, 5 G\! "$N$$:l+$G$9(2 DNL\@9jN4V$rCzEY3d$j@Zkh $&$K)! #

levels discrete GO!"Ey9b@~$O;XDj$5l?z = <z1>, <z2> ... KBP7$F@8@.$5l^$9!#;XDj$7$?8D?t$,Ey9b@~$N%l%Y%k$N8D?tHJj^$9!#**discrete** %b!<%I$G$O!"**set cntrparams levels** <**n**> $H$$$&;XDj$O>o$KL5;k5l$^$9!#

incremental GO!"Ey9b@~$Oz = <start> $+$i;O$^$j!"<increment> $:$DA}$($F9T$-8B3&$N8D?t$KC#$9k^$G=q$+l^$9!#<end> O=$NEy9b@~$N?t$r7hDj$9kN$K;H$ol^9,!"3l$O8e$N**set cntrparam levels** <**n**> KhCF>o$KJQ9$5l^$9!#z <4$,BP?t<4$N>19g!"**set ztics** $N>19g$HF1MM$K!"<increment> $OG\?t$H7F2r<a5l$^$9!#

%3%^%s%I**set cntrparam** $,0z?t$J7K8FPl$?>19g$O!"<!$N%G%U%)%k%H$NCM$,;H$ol^$9: linear, 5 points, order 4, 5 auto levels

Nc:

```
set cntrparam bspline
set cntrparam points 7
set cntrparam order 10
```

0J2<$O%l%Y%k$N4p=`$,9g$($P5 8D$N%l%Y%k$,$K<+F0E*$KA*Br$5l^$9:

```
set cntrparam levels auto 5
```

0J2<$O.1, .37, .9 $K%l%Y%k$r@_Dj7^$9:

```
set cntrparam levels discrete .1,1/exp(1),.9
```

0J2<$O0 $+$i4 $^$G!"1 $:$DA}d9%l%Y%k$r@_Dj$7$^$9:

```
set cntrparam levels incremental  0,1,4
```

0J2<$O%l%Y%k$N?t$r10 $K@_Dj$7$^$9(A}2C$N:G8e$NCM(end) $^$?$O<+F0$G@_Dj5l$k%l%Y%k$N?t$OJQ9$5l^$9):

```
set cntrparam levels 10
```

0J2<$O%l%Y%k$N?t$OJ];}$7$?$^$^%l%Y%k$N3+;OCM$HA}J,CM$r@_Dj7^$9:

```
set cntrparam levels incremental 100,50
```

Ey9b@~rIA/>l=j$N@)8f$K4X7F$O!"0J2<;2>H: **set contour (p. 115)**!#Ey9b@~$N%i%Y%k$N=q<0$H@~<o$N@)8f$K4X$7FO!"0J2<;2>H: **set cntrlabel (p. 112)**!#

0J2<$b;2>H$7F/$@$5$$!#

```
Ey9b@~$N%G%b (contours.dem)
```

$*$h$S

```
%f!<%6Dj5A%l%Y%k$NEy9b@~$N%G%b (discrete.dem).
```

%+%i!<%\%C%/%9 (colorbox)

?'$N0lMwI=!"$9Jo$A**pm3d** $N**palette** $Nmin_z $+$imax_z $^$G$N3j$i$+$J?'$N8{G[$O!"**unset colorbox** $,;H$olF$$$J$$$8B$j%+%i!<%\%C%/%9(colorbox) KIA+l^$9!#

```
set colorbox
set colorbox {
           { vertical | horizontal } {{no}invert}
           { default | user }
           { origin x, y }
           { size x, y }
           { front | back }
           { noborder | bdefault | border [line style] }
         }
show colorbox
unset colorbox
```

%+%i!<%\%C%/%9$NOLCV$O!"**default** $^$?$O **user** $G;XDj$G$-!"8e<T$N>l9g$=$NOLCVdBg-5r **origin** $d **size** %3%^%s%I$G@_Dj7^$9!#%+%i!<%\%C%/%9$O!"%0%i%U$d6JLL$N8e(**front**) $"$k$$$O@h(**back**) $KIA2h$5$;$k3HbG$-$^$9!#

?'8{G[$NJ}8~$O!"%*%W%7%g%s **vertical** $H **horizontal** $G@ZBX$(k3H,2DG=$G$9!#

origin x, y $H **size x, y** $O **user** %*%W%7%g%s$HNAHGN_;HMQ5l$^$9!#x, y NCMO!"%G%U%)%k%HGO%9%/%j!<%s:BI8$H2r<a$5l^9,!"3l$O3<!85IA2hMQ$N$+$7$3$^C?%*%W%7%g%s$K2a$.$^$;$s!#**set view map** Kh$k splot $r4^$`2<!85IA2hGO!"G$0U$N:BI87OGN;XDj$,2DG=$G$9!#Nc$($P0J2<$r;n7F$_$F$/$@$5$$:

```
set colorbox horiz user origin .1,.02 size .8,.04
```

3l$O?eJ?J}8~$N?'8{G[$r%0%i%U$N2<NJUj$KIA2h$7$^$9!#

border $O6-3&IA2h$r ON K7$^$9(%G%U%)%k%H) $7!"**noborder** $O6-3&IA2h$r OFF K7$^$9!#**border** $N8e$m$K@5$N@0?t$rM?$(kH!"$=$l$r6-3&$rIA2h9k;~$N line style $N%?%0$H7F;H$$^$9!#Nc$($P:

```
set style line 2604 linetype -1 linewidth .4
set colorbox border 2604
```

$O line style **2604**!"$9Jo$A:Y$$@~$N%G%U%)%k%H$N6-3&?'(-1) $G6-3&$rIA2h7^$9!#**bdefault** (%G%U%)%k%H) $O!"%+%i!<%\%C%/%9$N6-3&$NIA2h$K%G%U%)%k%H$N6-3&$N line style $r;H$$^$9!#

%+%i!<%\%C%/%9$N<4$O **cb** $H8F$P$l!"DL>o$N<4$N%3%^%s%I$G@)8f5l$^$9!#9JoA **set/unset/show** $G **cbrange**, **[m]cbtics**, **format cb**, **grid [m]cb**, **cblabel** JI$,!"$=7FB?J, **cbdata**, **[no]cbdtics**, **[no]cbmtics** JI$b;H$(kG7g&!#

%Q%i%a!<%?L5$7$N **set colorbox** $O%G%U%)%k%H$N0LCV$X@ZBX$($^$9!#**unset colorbox** $O%+%i!<%\%C%/%9$N%Q%i%a!<%?r%G%U%)%k%HCM$K%j%;%C%H$7!"$=$N>e$G%+%i!<%\%C%/%9$r OFF K7$^$9!#

0J2<$b;2>H: **set pm3d (p. 149)**, **set palette (p. 152)**, **x11 pm3d (p. 252)**, **set style line (p. 164)**!#

?'L>(colornames)

gnuplot $O8BDj$5l?8D?t$N?'$NL>A0$r;}$C$F$$$^$9!#$3li$O!"pm3d %Q%l%C%H$GDJ$,$l$k?'$NHOO0$rDj5A$9kN$K!"$"$k$$$O8D!9$N@~o$d&i%$%s%9%?%$%k$N?'$r=PNO7A<0$K0MB8$7J7A$GDj5A$7?j9kN$K;H$($^$9!#gnuplot $N;}$D?'L>$N0lMw$r8+kK$O!"%3%^%s%I **show colornames** $r;HMQ$7F/$@$5$$!#Nc:

```
set style line 1 linecolor "sea-green"
```

Ey9b@~(contour)

%3%^%s%I **set contour** $O6JLL$NEy9b@~$r0z$/3H$r;X<($7$^$9!#3N%*%W%7%g%s$O **splot** GN$_-8z$G$9!#$3lO!"3J;R>u&G!<?(grid data) rI,MWH7^$9!#>\:Y$O!"0J2<;2>H: **grid_data (p. 188)**!#Hs3J;R>u&G!<%?$GEy9b@~$rIA$-$?$$>l9g$O!"3J;R$r@8.9k$?a$K **set dgrid3d** $r;HMQ$7$^$9!#

=q<0:

```
set contour {base | surface | both}
unset contour
show contour
```

3liN3DN%*%W%7%g%s$OEy9b@~$rI3$K0z$/$+$r;XDj7^$9!#**base** GOEy9b@~$rx/y<4$N9o$_$N"$kDlLLKIA+$l!"**surface** GOEy9b@~O=$N6JLL<+BN$N>eKIA+$l!"**both** GOClLL$H6JLL>e$NN>J}KIA+l^$9!#%*%W%7%g%s$,;XDj5l$F$$J$>l9g$O **base** G"kH2>Dj5l$^$9!#

Ey9b@~$NIA2h$K1F6A$rM?$(kQ%i%a!<%?K:D$$F$O!"0J2<;2>H:**set cntrparam (p. 113)**!#Ey9b@~$N%i%Y%k$N@)8f$K4X$7FO!"0J2<;2>H:**set cntrlabel (p. 112)**!#

Ey9b@~N_$N%0%i%U$rF@k?a$K!"6JLL<+?H$NIA2hr7J$$$h$&$K9k3HbG$-$^$9(0J2<;2>H: **unset surface (p. 167)**)!#**set size** $r;H$C$F!"%0%i%U$r2hLL0lGU$KIA2h$9k3Hb2DG=G9$,!"$=$&$$C$?=PNO7A<0$hjb!"Ey9b@~$N%G!<%?$r%V%m%C%/$K=q$-=P$7!"$=lr:F$S2<!85%G!<%?$H7FF I$_9~$s$GIA2h$9lPhjh@$)8f$,2DG=KJj^$9:

```
unset surface
```

```
set contour
set cntrparam ...
set table $datablock
splot ...
unset table
# Ey9b@~$N>pJs$O:# $datablock $NCf$K$"$k
set term <whatever>
plot $datablock
```

Ey9b@~rIA/$?$aKO!"%G!<%?$O3J;R>u%G!<%?("grid data") G"kI,MW,$"$j$^$9!#$=$Nh&$J%U%!%$%kGO!"0lDNy-8IN)@~>e$NA4$F$NE@$,=gKJBYil$F$$$-$^$9!#$=$7FNYNy-8IN)@~>e$NE@$,=gKJBYil!"$=$7$FNY!"$HB3$$F$$$-$^$9!#y-8IN)@~F1;N$rJ,N%$9kK$O0l9T$N6u9T(6uGr!"I|5"!"2~9T0J30$NJ8;z$r4^$^$J$$9T) $r64$_$^$9!#0J2<;2>H: **splot datafile (p. 185)**!#

0J2<$b;2>H$7F/$@$5$$!#

Ey9b@~$N%G%b (contours.dem)

$*$h$S

%f!<%6Dj5A%l%Y%k$NEy9b@~$N%G%b (discrete.dem).

E@@~/GK@~@_Dj (dashtype)

%3%^%s%I **set dashtype** $O!"E@@~/GK@~%Q%?!<%s$rHV9f$G;2>H$G$-$kh&$KEPO?$7$^$9!#3lOHFbJXMx$G!"$=$NE@@~/GK@~%Q%?!<%s$r$=$NHV9f$G<u$1D1F/lk>l=jJi$P!"$I3G$bL@<(E*$JE@@~/GK@~%Q%?!<%s$b<u$1D1F/l^$9!#Nc:

```
set dashtype 5 (2,4,2,6)   # 5 HV$N dashtype $rDj5A$^$?$O:FDj5A
plot f1(x) dt 5            # $=$N dashtype $r;H$C$F plot
plot f1(x) dt (2,4,2,6)    # >e$HA4$/F1$8%0%i%U
set linetype 5 dt 5        # $3$N%Q%?!<%s$r linetype 5 $G>o$K;H$&
set dashtype 66 "..-"      # J8;zNs$G?7$7$$ dashtype $rDj5A
```

0J2<;2>H: **dashtype (p. 38)**!#

Data style

3N%3%^%s%I$N7A<0$O8=:_$O?d>)$5lF$$$^;$s!#0J2<;2>H:**set style data (p. 163)**!#

Datafile

%3%^%s%I **set datafile** $O!"**plot**, **splot**, **fit** %3%^%s%I$GF~NO%G!<%?$rFI$`>l9g$K!"$=$NNs(field) $N2r<a$N;EJ}$r@)8f$9$k%*%W%7%g%s$r;}A^$9!#8=:_$O!"6DN$=$Nh&$J%*%W%7%g%s$,<BAu5l$F$$$^$9!#

Set datafile fortran

%3%^%s%I **set datafile fortran** $O!"F~NO%U%!%$%k$NFortran D 7?!"Q 7?$NDj?tCM$NFCJL$J%A%'%C%/$r2DG=$K7^$9!#$3$NFCJL$J%A%'%C%/$OF~NO=hM}$rCY$/$7$^$9NG!"<B:]K=$N%G!<%?,Fortran D 7?!"Q 7?$NDj?t$r;}CF$$k>l9gKN$_$3lrA*Br9Y$-$G$9!#$3$N%*%W%7%g%s$O!"$=$NBe$Gunset datafile fortran $r9T$($PL58z$KG-$^$9!#

Set datafile nofpe_trap

%3%^%s%I **set datafile nofpe_trap** $O!"F~NO%U%!%$%k$+$i%G!<%?NFI_9~$_$N:]$K!"$9YF$N?t<0$NI>2A$NA0$KIbF0>.?tE@Nc30%O%s%I%i$N:F=i4|2=$r7J$$$h$&$Kgnuplot $KL?Na$7$^$9!#3lKh$j!"$HFbBg$-$J%U%!%$%k$N%G!<%?$NF~NO%,$+JjB.$/$Jj^$9%,!"IbF0>.?tE@Nc30$,5/$-$?>l9g$K%W%m%0%i%`$,[>o=*N;7F7^$&4m81$O"j^$9!#

Set datafile missing

=q<0:

```
set datafile missing "<string>"
set datafile missing NaN
show datafile missing
unset datafile
```

%3%^%s%I **set datafile missing** $O!"F~NO%G!<%?%U%!%$%kCf$G7gB;%G!<%?$r5-=R9kF'CJL$JJ8;zNs$,$"$k3H$r **gnuplot** $K;X<($7$^$9!#**missing** $K4X$9$k%G%U%)%k%HCM(J8;z) O"j^$;$s!#gnuplot $O!V7gB;%G!<%?!W$H!VL58z$JCM!W(Nc$($P"NaN" $d1/0) $r6hJL$7$^$9!#Nc$($P!"O"B3$9$k%G!<%?E@KBP9$k%0%i%U$N@^$l@~IA2h$O!"L58zJCMKhCF=3G@Zl^9,!"7gB;%G!<%?$N>l9g$O$=$&GO$"$j$^$;$s!#

?tCM$,4|BT$5lk>lLL$G?tCM$GOJ$J8;z$,8=l?>l9g$O!"$=l, **missing** $G;XDj$9$kJ8;zNs$K%^%C%A9k>l9g$r=|$$F!"DI>o7gB;%G!<%?GOJ/!"L58zJCMH7F2r<a7^$9!#

5U$K!"**set datafile missing NaN** H9kH!"?t<0$d%G!<%?Cf$N?tCMGO$J$$CM(NaN) O9YF7gB;%G!<%?H7$F07$$^$9!#

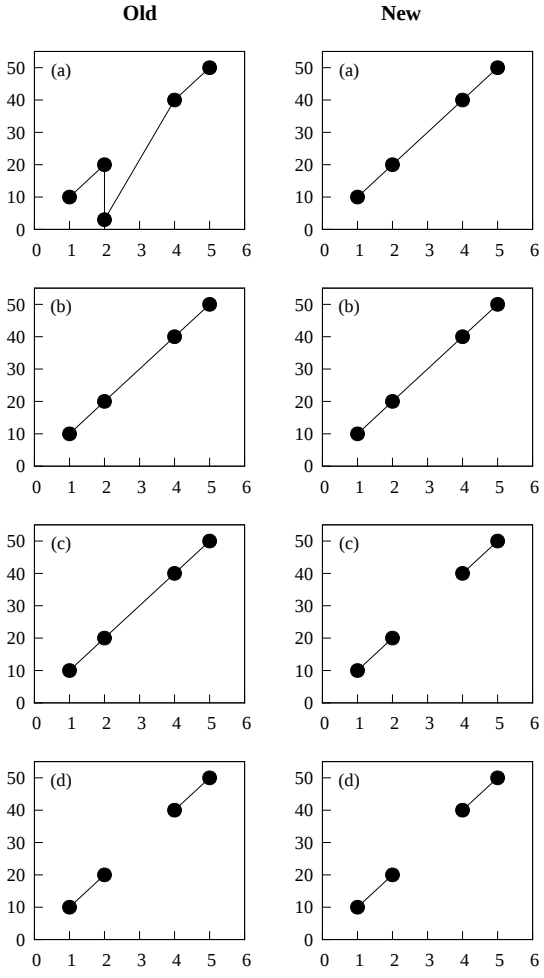
Cm0U: $"$k>l9g$N7gB;%G!<%?$HL58zJCMN07$$$O!"8=:_$N%P!<%8%g%s$N

gnuplot GOJQ9$5$l$F$$^$9!#0J2<$NNc$G!"**gnuplot** %P!<%8%g%s 4 $H%P!<

%8%g%s 5 GN0c$$r<(7^$9!#

Nc:

```
set style data linespoints
plot '-' title "(a)"
   1 10
   2 20
   3 ?
   4 40
   5 50
   e
set datafile missing "?"
plot '-' title "(b)"
   1 10
   2 20
   3 ?
   4 40
   5 50
   e
plot '-' using 1:2 title "(c)"
   1 10
   2 20
   3 NaN
   4 40
   5 50
   e
plot '-' using 1:($2) title "(d)"
   1 10
   2 20
   3 NaN
   4 40
   5 50
   e
```



(a) $N%0%i%U$O!"3 9TL\$K$OM-8z$JCM$,$RHD7+$J$$$?$a!"gnuplot 4 $Hgnuplot 5 $G0c$$,$"$j$^$9!#%P!<%8%g%s 4 GO!"$=$3$K1 9T$K1 D7$+%G!<%?$,J+C?>l9g$N5,B'$rE,MQ$7!"9THV9f$r"x" $K!"%G!<%?$r"y" $H8+$J$7!"8m$CF=$NE@$r(2,3) $KIA2h$7$F$$^7?!#

J8; z'?' $,7gB;%G! <%?$r0UL#9kbNH7$F; XDj$5lF$$$k (b) GO! "8E$$HG$N gnuplot Gb?7$7$$HGGbF1 $8%G! <%?$r@5$7$/=hM}7^$9! #

(c), (d) $N%0%i%U$K8+ilkh$&$K! "8E$$ gnuplot GO NaN $r using $N; XDj$N; EJ}KhCF0 [JC$?=hM}$r 7F$$$^7?! #8=:_$O! "gnuplot $OF~NONs$H7F N $H; XDj$5lF$$$F$b ($N) $H; XDj$5lF$$$F$b NaN $KBP 7F$OF1$8=hM}$r9T$$$^$9! #0J2<$N%G%b$b; 2>H$7F/$@$5$$! #

```
imageNaN %G%b! #
```

%P! <%8%g%s 5.0.6 ; ~E@$G! "$3lO7gB;CM%U%i%0$K4X$7Fb@5$7$$$G$9! #0JA0$N%P! <%8%g%sGO! "plot %3%^%s%I $K **using N** GOJ/ **using ($N)** $r; XDj$7$?>19g$O! "7gB;CM%U%i%0$NG'<1$K4V0c$$,$"$j$^$7$?! #$7$+$7! "8=:_$N gnuplot G"CF$b! "7W; ;<0$G! V7gB;CM! W$r; HMQ$9kH$=$N7k2L$O NaN HJj&k3HKCm0U7F$/ $@$5$$! #Nc$ ($P! "1 NsL\$+2 NsL\$K **missing** $NJ8; zNs$,$"$k>19g! "**using ($1+$2)** Kh$kI>2A$O NaN HJ j^$9! #$=$N>19g$Gb3lr7gB;CMH7$F07$$?1l$P! "%3%^%s%I **set datafile missing NaN** $r; HMQ$7$F $/$@$5$$! #

Set datafile separator

%3%^%s%I **set datafile separator** $O! "$3$N8e$NF~NO%U%!%$%k$N%G! <%?Ns$NJ,N%J8; z$,! "6uGr (whitespace) $G J/$F! "$3$3$G; XDj9kJ8; zG"kH **gnuplot** $K; X< ($7$^$9! #3N%3%^%s%I$N:G$b0lHIE*$J; HMQNc$O! "I=7W; ; %=%U%H$d%G! <%?%Y! <%9%=%U%H$,:n$k csv (%3%s%^6h@Z$j) %U%!%$%k$rFI$`>19g$G7g$&! #%G%U%)%k%H$N%G! <%?Ns $NJ,N%J8; z$O6uGr (whitespace) $G$9! #

=q<0:

```
set datafile separator {whitespace | tab | comma | "<chars>"}
```

Nc:

```
# %?%V6h@Z$j$N%U%!%$%k$rF~NO
set datafile separator "\t"

# %3%s%^6h@Z$j$N%U%!%$%k$rF~NO
set datafile separator comma

# F~NO%U%!%$%k, * $+ | $N$$:$l$+$G6h@Z$i$l$?Ns$r; }$D>19g
set datafile separator "*|"
```

Set datafile commentschars

%3%^%s%I **set datafile commentschars** $O! "$I$NJ8; z$,%G! <%?%U%!%$%kCf$N%3%a%s%H9T$N3+; OJ8; z$r0UL#$9 kN$+$r **gnuplot** $K; X< ($7$^$9! #; XDj5l$?J8; z$NCf$N0l$D$,%G! <%?9T$N: G=i$NHs6uGrJ8; z$H7F8=ol$?>19g! "$=$NF~NO9T$N$=$l0J9_$NItJ,$rL5; k7^$9! #%G%U%)%k%HJ8; zNs$O! "VMS GO "#!" ! "$=$l0J0GO "#" $G$9! #

=q<0:

```
set datafile commentschars {"<string>"}
show datafile commentschars
unset commentschars
```

hC$F! "%G! <%?%U%!%$%k$N0J2<$N9T$O40A4$KL5; k5l$^$9:

```
# 1 2 3 4
```

$,! "0J2<$N9T

```
1 # 3 4
```

$O! "$b$7

```
set datafile missing '#'
```

$,F1; ~$K; XDj5l$F$$$J1l$P! "M=4 |$;$L7k2L$r@8$8$^$9! #

Nc:

```
set datafile commentschars "#!%"
```

Set datafile binary

%3%^%s%I **set datafile binary** $O!"%G!<%?%U%!%$%kNFI_9~$_;~$K%P%$%J%j%U%!%$%k$r%G%U%)%k%H$H@_Dj9kNK;Hol$^$9!#=q<0$O!"$=l, **plot** $^$?$O **splot** %3%^%s%I$G;HolkN$H@53N$KF1$8$G$9!#<binary list>$K=q1k%-!<%o!<%I$K4X$7FO!"><\$7$/$O!"0J2<;2>H: **binary matrix (p. 186)**,**binary general (p. 81)**!#

=q<0:

```
set datafile binary <binary list>
show datafile binary
show datafile
unset datafile
```

Nc:

```
set datafile binary filetype=auto
set datafile binary array=(512,512) format="%uchar"

show datafile binary   # 8=:_$N@_Dj$N0lMwI=<(
```

>.?tE@@_Dj (desimalsign)

%3%^%s%I **set decimalsign** $O!"L\@9$j$N8+=P$7!"$"$k$$$O **set label** J8;zNs$K=q$+lk?t$N>.?tE@5-9f$rA*Br7^$9!#

=q<0:

```
set decimalsign {<value> | locale {"<locale>"}}
unset decimalsign
show decimalsign
```

0z?t <value> $O!"DI>o$N>.?tE@5-9fKCV-49$($F;H$&J8;zNs$G$9!#E57?E*$JbN$O%T%j%*%I'.' $d%3%s%^','$G9,B>KbM-MQJbN,$"$kG7g&!#0z?t <value> $r>JN,$9kH!"><.?tE@$N6h@Z$j$O%G%U%)%k%H(%T%j%*%I) $+$iJQ9$5$l$^$;$s!#unset decimalsign $b <value> $r>JN,$9kN$HF1$88z2L$r;}$A$^$9!#

Nc:

B?$/$N%h!<%m%C%Q=t9qGN@5$7$$=PNO7A<0$rF@$kKQ:

```
set decimalsign ','
```

<!N3HKCm0U7F$/$@$5$$:L@<(E*$JJ8;zNs$r@_Dj7?>l9g!"3l$O<4$NL\@9jJINgnuplot $Ngprintf()=q<04X?t$G=PNO5l$k?tCM$N$_$K1F6A$7!"F~NO%G!<%?%0;XDj$dsprintf()=q<04X?t$G=PNO$5lk?tCMKO1F6A7^$;$s!#$=$liNF~NO$d=PNO$N7A<0$N5sF0$bJQ9$7$?$$>l9g$O!"Be$ojK0J2<$r;HMQ$7F/$@$5$$:

```
set decimalsign locale
```

3l$O!"gnuplot $K!"F~NO$H=PNO$N=q<0$r!"4D6-JQ?t LC_ALL, LC_NUMERIC, LANG $N8=:_$N@_Dj$K=>$C$?$bNr;Ho;kh$&$K7$^$9!#

```
set decimalsign locale "foo"
```

3l$O!"gnuplot $K!"F~NO$H=PNO$N=q<0$r!"%m%1!<%k"foo" $K=>$C$?$bNK7$^$9$,!"$=$N%m%1!<%k$,%$%s%9%H!<%k$5lF$$$kI,MW$,$"j^$9!#$b$7%m%1!<%k"foo" $,8+$D$+$iJ+C?>l9g!"%(%i!<%a%C%;!<%8$,=PNO$5$l!"><.?tE@$N@_Dj$OJQ9$5l^$;$s!#linux %7%9%F%\>eGO!"$=$3$K%$%s%9%H!<%k5l$F$$$k%m%1!<%k$N0lMw$O"locale -a" $G8+$k3H$,$G$-$^$9!#linux $N%m%1!<%kJ8;zNs$O@$$?$"sl_SI.UTF-8" Nh$&$J7A<0r7$F$$$^9,!"Windows $N%m%1!<%kJ8;zNs$O"Slovenian_Slovenia.1250"!"$^$?$O"slovenian" Nh$&$J7A<0$G$9!#%m%1!<%kJ8;zNs$N2r<a$O!"C $N%i%s%?%\%i%$%V%i%j$,9T$&3H$KCm0U$7F/$@$5$$!#8E$$C %i%$%V%i%j$G$O!"%m%1!<%k@_Dj$N%5%](%H(Nc$($P?t;z$N3 7eKh$N6h@Z$jJ8;z$J$I) $rItJ,E*$K7+Ds6!7F$$$J$$$+b7l^$;$s!#

```
set decimalsign locale; set decimalsign "."
```

3l$O!"8=:_$N%m%1!<%k$K9g$C$?$IsJ>.?tE@Gb!"A4FNF~=PNOKBP7$F;HMQ$9kh$&$K@_Dj7^9,!"gnuplot $NFbIt4X?tgprintf() $r;H$C$F=q<02=$9$k?tCM$OL@<(E*$K;XDj$5l?'.' KJj^$9(>e=q$-)!#

3J; R>u%G! <%?=hM} (dgrid3d)

%3%^%s%I **set dgrid3d** $O! "Hs3J; R>u%G! <%?$+$i3J; R>u%G! <%?$X$N<IA|5 !G=$rM-8z$K$7! "$=$N$?$a$N%Q%i%a! <%?$r@_Dj7^$9! #3J; R>u%G! <%?$N9=B$$K$D$$$F$N>\:Y$O! "0J2<; 2>H: **splot grid_data (p. 188)**!#

=q<0:

```
set dgrid3d {<rows>} {,{<cols>}}
            { splines |
              qnorm {<norm>} |
              (gauss | cauchy | exp | box | hann)
                {kdensity} {<dx>} {,<dy>} }
unset dgrid3d
show dgrid3d
```

%G%U%)%k%HGO **dgrid3d** $OL58z$KJC$F$$^$9! #M-8z$KJk$H! "%U%!%$%k$+$iFI$_9~$^lk3 <!85$N%G! <%?$O!V; 6:_7?!W%G! <%?(Hs3J; R>u%G! <%?) G"kH8+J5l^$9! #3J; R$O! "%0%i%U$HEy9b@~$NIA2hN?aK! "; 6:_7?%G! <%?$r0O$`6k7A$+$iF@il$k@#K!$H! "row_size/col_size $G; XDj$5lk?t$N9T$HNs$r; }$Dh&$K@8@.$5l^$9! #3J; R$O x J}8~(9T) $Hy J}8~(Ns) $KEy4V3V$G$9! #z NCMO; 6:_9k%G! <%?$Nz NCMN=E$_IU$-$NJ?6Q! "$^$?$O%9%W%i%$%sJd4V$H7F7W; ;5l$^$9! #8@JQ(lP! "5,B'E*$J4V3V$N3J; R$,@8@.$5$l! "A4$F$N3J; RE@$G85$N%G! <%?$N3j$+$J6a; wCM$,I>2A$5l^$9! #85$N%G! <%?NBeojK3N6a; wCM$,IA2h$5l^$9! #

%G%U%)%k%HNNsN?t$O9T$N?tKEy7$/! "$=$N%G%U%)%k%H$NCM$O10 $G$9! #

85$N%G! <%?$+$i6a; wCM$r7W; ;9k$?$a$N$$/D+$N%"%k%4%j%:%`$,MQ0U5l$F$$$F! "DI2C$N%Q%i%a! <%?$r; XDjG-kbNb$"$j$^$9! #3liNJd4V$O! "3J; RE@$K6a$$$G! <%?E@$[$I! "$=$N3J; RE@KBP7Fh$j6/$$1F6A$rM?$($^$9! #

splines %"%k%4%j%:%`$O! "'Gv$$D$.HD" $r85$K7?Jd4V7W; ;$r9T$$^$9! #$3lODI2C%Q%i%a! <%?$r<h$j$^$;$s! #

qnorm %"%k%4%j%:%`$O3J; RE@$GF~NO%G! <%?$N=E$_IU$-J?6Q$r7W; ;$7$^$9! #3EE@$O3J; RE@$+$i$N5wN%$Nnorm >h$N5U?t$G=E$_IU$1$5$l$^$9! #(<B:]$K$O! "dx, dy $r3F%G! <%?E@$H3J; RE@$H$N:9$N@.J,$G$"$k$H$9$k$H! "=E$_$Odx^norm + dy^norm $GM?$($i$l$^$9! #2 $N$Y$-$N%N%k%`! "FC$K4, 8, 16 $K4X$7FO! "$=$N=E$_$N7W; ;$O%f!<%/%j%C%I5wN%$r; H$&$3HG(dx^2+dy^2)^norm/2 Nh$&$K:GE,2=5lF^$9%,! "G$0UNIiG$J$$@0?t$r; H$&3H$b2DG=$G$9! #) %N%k%`$N$Y$-$NCM$r$?$@0l$D$NDI2C%Q%i%a! <%?$H$7$F; XDj$G$-$^$9! #$3$N%"%k%4%j%:%`,%G%U%)%k%HKJCF$$$^$9! #

:G8e$K! "=E$_IU$-J?6Q$N7W; ;MQ$K! "$$/D+$NJ?3j2=E$_IU$14X?t (kernel) $,MQ0U$5lF$$$^$9: z = Sum_i w(d_i) * z_i / Sum_i w(d_i), $3$3$Gz_i $Oi HVL\$N%G! <%?NCMG! "d_i $O8=:_$N3J; RE@$Hi HVL\$N%G! <%?E@$N0LCV$H$N5wN%$G$9! #$9YF$N=E$_IU$14X?t$,! "8=:_$N3J; RE@$K6a$$$J}$N%G! <%?E@$KOBg-$J=E$_! "1s$$J}$N%G! <%?E@$K$O>.$5$$=E$_$rIU1^$9! #

0J2<$N=E$_IU$14X?t$,;HMQG-$^$9:

```
gauss :     w(d) = exp(-d*d)
cauchy :    w(d) = 1/(1 + d*d)
exp :       w(d) = exp(-d)
box :       w(d) = 1                    d<1 $N>19g
                 = 0                    $=$NB>
hann :      w(d) = 0.5*(1-cos(2*pi*d))  d<1 $N>19g
            w(d) = 0                    $=$NB>
```

3l$i5 DNJ?3j2=E$_IU$14X?tN&$A0lDr; HMQ9k>19g! "2 D^GNDI2C%Q%i%a! <%?dx $Hdy $r; XDj$G$-$^$9! #$3li$O! "5wN%$N7W; ;;~$K:BI8$N0c$$r%9%1! <%kJQ49$9$kNK; H$($^$9: d_i = sqrt(((x-x_i)/dx)**2 + ((y-y_i)/dy)**2), $3$3$G! "x,y $O8=:_$N3J; RE@$N:BI8$G! "x_i,y_i $Oi HVL\$N%G! <%?E@$N:BI8$G$9! #dy $N%G%U%)%k%H$NCM$O dx $G! "$=$N%G%U%)%k%H$NCM$O1 KJCF$$$^$9! #%Q%i%a! <%?dx $Hdy $O! "%G! <%?E@$,3J; RE@$X!V%G! <%?$=$l<+?H$NC10L$G! W$N4sM?$r9T$&$HC0O$N@)8f$r2DG=$K7^$9! #

%*%W%7%g%s%-! <%o! <%I **kdensity** $O! "=E$_IU$14X?tL>$N8emG(%*%W%7%g%s$N) %9%1! <%kJQ49$N%Q%i%a! <%?$NA0$KCV$/$bNG! "3l$O%"%k%4%j%:%`$,$r7W; ;$9kCMr=E$_$NOB(z = Sum_i w(d_i) * z_i) GO3diJ$$h$&$K7^$9! #z_i $,$9YFDj?t$N>19g! "$3lO; v<B>e2 JQ?t$N=E$_IU$1I>2A$rIA2h7^$9: (>e$N5 DN$&A$N0lDN) =E$_IU$14X?t$,3F%G! <%?E@$KCV$+$l! "$=$liN=E$_$NOB$,$9YF$N3J; RE@$GI>2A5l! "$=$7$F85$N%G! <%?NBeojK3N3ji+$J6JLL$,IA2h5l$^$9! #3l$O! "1 <!85$N%G! <%?=89gKBP9$k **smooth kdensity** %*%W%7%g%s$,9T$&3HH*$^$+KOF1$8$G$9(; HMQNc$O kdensity2d.dem $r; 2>H$7F/$@$5$$)!#

8eJ}8_4 9@-N?aK! "o:$+$K0[Jk=q<0$b%5%]! <%H$5lF$$$^$9! #$I$N%"%k%4%j%:%`$bL@< (E*$KA*Br$7$J$+$C$?>l9g! "**qnorm** %"%k%4%j%:%`$,2>Dj5l! "3 $D0J2<$N! "%3%s%^(,) 6h@ZjN%*%W%7%g%s%Q%i%a! <%?$r;XDj$7$?>l9g$O! "$=$lir$=$l$>$l9T?t! "Ns?t! "$=$7$F norm CM$G$"$k$H2r<a$7$^$9! #

%*%W%7%g%s **dgrid3d** $O! "; 6:_$9$k%G! <%?$r=E$_IU$-J?6Q$G5,B'E*$J3J;RKCV-JQ$ ($kC1=c$J;EAH$_$K2a$.$^$;$s! #3NLdBjKBP9kh$j@vN}$5l?<jK!$,B8:_$7$^$9NG! "3NC1=c$JJ}K!$,IT=-J,G"lP! "**gnuplot** $N30$G$=$Nh&$JJ}K!$G%G! <%?$rA0=hM}$9kY$-$G7g$&! #

0J2<$b;2>H

```
dgrid3d.dem:  dgrid3d $N%G%b
```

$*$h$S

```
scatter.dem:  dgrid3d $N%G%b
```

2>JQ?t (**dummy**)

%3%^%s%I **set dummy** $O%G%U%)%k%H$N2>JQ?tL>$rJQ99$7$^$9! #

=q<0:

```
set dummy {<dummy-var>} {,<dummy-var>}
show dummy
```

%G%U%)%k%HGO! "**gnuplot** $O **plot** GO! "G^2pJQ?t%b! <%I! "$"$k$$O6K:BI8%b! <%IGO"t", $=$&GJ1l$P"x" $rFHN)JQ?t (2>JQ?t) $H$7! "F1MM$K**splot** GO! "G^2pJQ?t%b! <%IGO (**splot** $O6K:BI8%b! <%I$G$O;H$ ($^$;$s) "u" $H"v", $=$&GJ1l$P"x" $H"y" $rFHN)JQ?t$H7^$9! #

2>JQ?t$O! "J*M}E*$K0UL#N"$kL>A0! "$"$k$$O6h$jJXMx$JL>A0H7F;H$&J}$,JXMxG7g&! #Nc$ ($P! "; ~4V$N4X?t$rIA2h$9$k>l9g:

```
set dummy t
plot sin(t), cos(t)
```

Nc:

```
set dummy u,v
set dummy ,s
```

BhFsNNcO! "2 HVL\$NJQ?t$r s H7$^$9! #2>JQ?tL>$r%G%U%)%k%H$NCMKLa9KO0J2<Nh$&$K7F$/$@$5$$! #

```
unset dummy
```

J8; z% (%s%3! <%I (**encoding**)

%3%^%s%I **set encoding** $OJ8; z$N% (%s%3! <%I (encoding) $rA*Br$7$^$9! #

=q<0:

```
set encoding {<value>}
set encoding locale
show encoding
```

M-8z$JCM (value) $O0J2<$NDLjG$9! #

```
  default     - =PNO7A<0$K%G%U%)%k%H$N% (%s%3! <%I$N;HMQ$rL?Na
  iso_8859_1  - B?$/$N Unix %o! <%/%9%F! <%7%g%s$d MS-Windows $G;HMQ2D
                G=$J:G$b0lHIE*$J@>%h! <%m%C%Q% (%s%3! <%I! #$3$N% (%s%3! <
                %I$O PostScript $N@$3&$G 'ISO-Latin1' $H$7$FCN$i$l$F
                $$$k$b$N$G$9! #
  iso_8859_15 - %f! <%m5-9f$r4^$' iso_8859_1 $N0!<o
  iso_8859_2  - Cfl{/El%h! <%m%C%Q$G;HMQ$5$l$k% (%s%3! <%I
  iso_8859_9  - (Latin5 $H$7$FCN$i$l$k) %H%k%3$G;HMQ$5$l$k% (%s%3! <%I
  koi8r       - NI$/;H$o$l$k Unix $N%-%j%kJ8;z% (%s%3! <%I
  koi8u       - Unix $N%&%/%i%$%JCOJ}$N%-%j%kJ8;z% (%s%3! <%I
```

```
cp437       - MS-DOS $N%3!<%I%Z!<%8
cp850       - @>%h!<%m%C%Q$N OS/2 $N%3!<%I%Z!<%8
cp852       - Cfl{/El%h!<%m%C%Q$N OS/2 $N%3!<%I%Z!<%8
cp950       - MS HG$N Big5 (emf terminal $N$_)
cp1250      - Cfl{/El%h!<%m%C%Q$N MS Windows $N%3!<%I%Z!<%8
cp1251      - %m%7%"!"%;%k%S%"!"%V%k%,%j%"!"%^%1%I%K%"81 (8 %S%C%H)
cp1252      - @>%h!<%m%C%Q$N MS Windows $N%3!<%I%Z!<%8
cp1254      - %H%k%3$N MS Windows $N%3!<%I%Z!<%8 (Latin5 $N3HD%)
sjis        - Shift_JIS F|K\81%(%s%3!<%I
utf8        - 3FJ8;z$N Unicode %(%s%H%j%]%$%s%H$N!"2DJQD9 (%^%k%A%P
              %$%H) I=8=
```

%3%^%s%I **set encoding locale** $O!"B>$N%*%W%7%g%sHOOc$$!"3l$O8=:_$N%m%+!<%k$r<B9T;~$N4D6-$+$i7h Dj7h$&$H7^$9!#$?$$F$$N%7%9F%'GO3l$O4D6-JQ?tLC_ALL, LC_CTYPE, LANG $N$$$:l+Kh$C $F@)8f$5l^$9!#$3$N;EAH$_$O!"Nc$($P wxt, cairopdf =PNO7A<0$G!"UTF-8 $dEUC-JP Nh$&$J%^%k%A%P%$ %HJ8;z%(%s%3!<%IrDL9$?a$KI,MW$G$9!#3N%3%^%s%I$OF|IU$d?t;zJI$N%m%+!<%kF'CM-$NI=8=KO1F6A$rM? $($^$;$s!#0J2<$b;2>H: **set locale (p. 137)**, **set decimalsign (p. 119)**!#

0lHL$K!"%(%s%3!<%I$N@_Dj$O=PNO7A<0$N@_Dj$NA0$K9TJ&I,MW$,$"j^$9!#$3$N%(%s%3!<%I$OIs$J=PNO7A<0 Gb%5%]!<%H5l$F$$$kHO8Bi:!"$=$7$F=PNO7A<0$OMW5a5l$?$IsJHsI8=`U8;z$b@8@.$G$-$J1l$P$$$1 $^$;$s!#

Hs@~7A4X?t2s5" (fit)

%3%^%s%I **set fit** $O!"**fit** %3%^%s%IMQ$N%*%W%7%g%s$r@)8f$7$^$9!#

=q<0:

```
set fit {nolog | logfile {"<filename>"|default}}
        {{no}quiet|results|brief|verbose}
        {{no}errorvariables}
        {{no}covariancevariables}
        {{no}errorscaling}
        {{no}prescale}
        {maxiter <value>|default}
        {limit <epsilon>|default}
        {limit_abs <epsilon_abs>}
        {start-lambda <value>|default}
        {lambda-factor <value>|default}
        {script {"<command>"|default}}
        {v4 | v5}
unset fit
show fit
```

%*%W%7%g%s **logfile** $O!"**fit** %3%^%s%I,$=$N=PNO$r=q$-=P$9>l=j$rDj5A$7$^$9!#0z?t <filename> $O!"C10l0z MQId$+F's=E0zMQId$G0O$'I,MW$,$"j^$9!#%U%!%$%kL>$r;XDj$7J+C?>l9g!"$^$?$O **unset fit** $r;HMQ$7$?>l 9g$O!"%m%0%U%!%$%k$O%G%U%)%k%HNCMG$"$k"fit.log"!"$^$?$O4D6-JQ?t**FIT_LOG** NCMK%j%;%C%H5l$^$9!# M?$($il?%m%0%U%!%$%kL>$, / $+\ $G=*$C$F$$$k>l9g!"$=$l$O%G%#%l/%H%jL>$H2r<a5l!"%m%0%U%!%$%k$O=$N%G%#%l/%H%j$N"fit.log" HJj^$9!#

%G%U%)%k%HGO!"$=$N%m%0%U%!%$%k$K=q$+$l$k>pJs$O!"BPOC7?=PNO$K%b=PNO$7$^$9!#**set fit quiet** O=$NBPOC 7?=PNO$r%*%U$K$7!"**results** $O:G=*7k2L$N$_$r=PNO7^$9!#**brief** $O!"DI2C$Gfit N9YF$N7+$jJV7K4X7F 19T$NMWLs$rDs6!7^$9!#**verbose** $O!"%P!<%8%g%s50JA0$G%G%U%)%k%H$@$C$?!"><:Y$J7+jJV7$NJs9p$r9T$$ $^$9!#

%*%W%7%g%s **errorvariables** $rON K9kH!"**fit** %3%^%s%I$G7W;;$5l?8D!9NEvFOa%Q%i%a!<%?$N8m:9$,!" $=$N%Q%i%a!<%?$NL>A0$K"_err" rDl?L>A0$N%f!<%6Dj5AJQ?t$K%3%T!<5l$^$9!#3l$O<g$K!"EvFO$a4X?t $H%G!<%?$NIA2h%0%i%U$N>e$K%Q%i%a!<%?H=$N8m:9$r;2>HMQ$K=PNO$9kN$K;Ho$l$^$9!#Nc:

```
set fit errorvariables
fit f(x) 'datafile' using 1:2 via a, b
```

```
print "error of a is:", a_err
set label 1 sprintf("a=%6.2f +/- %6.2f", a, a_err)
plot 'datafile' using 1:2, f(x)
```

%*%W%7%g%s **errorscaling** $r;XDj$9kH(%G%U%)%k%H)!"%Q%i%a!<%?$N7W;;8m:9$rJd@5&V<+>h(reduced &V-square) $G?-=L$7$^$9!#3l$O!"7k2L$H7FJd@5&V<+>hCMKJ$k!"Ev$FOa7W;;$NI8=`JP:9 (FIT_STDFIT) $KEy$7$$%G!<%?8m:9$rDs6!$9$k$3$H$HF1Ey$K$J$j$^$9!#%*%W%7%g%s **noerrorscaling** $G$O!"I>2A8m:9$O!"?-=L$5$l$J$$Ev$F$O$a%Q%i%a!<%?$NI8=`JP:9$KJj$^$9!#%G!<%?$N=E$_$r;XDj$7J1lP!"%Q%i%a!<%?$N8m:9$O>o$K?-=L$5l^$9!#

%*%W%7%g%s **prescale** $r%*%s$K9k$H!"Marquardt-Levenberg %k!<%A%sKEO9A0$K!"3F%Q%i%a!<%?$NCMr=li$N=i4|CM$K=>CF;vA0$K%9%1!<%kJQ49$7$^$9!#3l$O!"3F%Q%i%a!<%?$NBg$-$5K+JjBg$-$J0c$$$,$"$k>l9g$K!"BgJQM-8z$G$9!#$?$@$7!"=i4|CM$,40A4$K0 NEvFOa%Q%i%a!<%?KO!"7h7F3N%9%1!<%kJQ49$O9T$$$^$;$s!#

H?I|?t$N8B3&CM$O!"%*%W%7%g%s **maxiter** $G@)8B$G$-$^$9!#$=lr0 $+**default** H9kH!"$=lO8B3&$,$J$$$3Hr0UL#7^$9!#

%*%W%7%g%s **limit** $O!"<}B+$r8!=P9k$?$aNbCH$b>.$5$$?t;z$N8B3&(1e-5) $N%G%U%)%k%H$NCM$rJQ99$9kN$K;H$($^$9!#<+>h;D:9NOB,3N?tCML$K~$NHfN($NJQ2=$7$+$7$J$$>l9g$O!"Ev$FOa$O!V<}B+$7$?!W$HH=CG5l$^$9!#

%*%W%7%g%s **limit_abs** $O!"<+>h;D:9$NOB$NJQ2=$N8B3&(@dBPCM) $rDI2C$7$^$9!#%G%U%)%k%H$O0 $G$9!#

%"%k%4%j%:%`$K4X$9$kJL$N@)8f$r$7$?$$>l9g!"$=$7$F Marquardt-Levenberg %"%k%4%j%:%`rNI/CNCF$$$k>l9g!"$=$l$K1F6A$rM?$($k0J2<$N%*%W%7%g%s$,MxMQG-$^$9: **lambda** $N=i4|CM$O!"DL>o<+F0E*$K ML-9TNs$+$i7W;;$5l^9,!"I,MWJi$P%*%W%7%g%s **start_lambda** $r;H$CF=lrM?$($k3H$,$G$-$^$9!#$=lr **default** H9kH!":F$S<+F0@_Dj$,M-8zKJj^$9!#%*%W%7%g%s **lambda_factor** $O!"BP>]$H9k4X?t$N&V<+>hCM$,0UL#$"$j2KA}2C9k/8:>/9kH-$O>o$K **lambda** $rA}2C$5$;$k/8:>/5;$k0x;R$r@_Dj7^$9!#$=lr **default** H9kH!"%G%U%)%k%H$N0x;R$G$"$k10.0 K7$^$9!#

%*%W%7%g%s **script** $O!"fit $rCfCG$7$?$H$-$K<B9T9k **gnuplot** %3%^%s%I$r;XDj$9kbNG$9!#0J2<;2>H: **fit (p. 69)**!#3N@_Dj$O%G%U%)%k%H$N **replot** $d4D6-JQ?t **FIT_SCRIPT** hj$bM%@h=g0L$O>e$G$9!#

%*%W%7%g%s **covariancevariables** $r%*%s$K9k$H!":G=*E*$J%Q%i%a!<%?4V$N6&J,;6$r%f!<%6Dj5AJQ?t$KJ]B8$7$^$9!#3F%Q%i%a!<%?NAHKBP7F$=$N6&J,;6$rJ]B8$9$kJQ?tL>$O!""FIT_COV_" $K:G=i$N%Q%i%a!<%?L>$H"_" $H2 $DL\$N%Q%i%a!<%?rDJ2$?L>A0$KJj$^$9!#Nc$($P%Q%i%a!<%?"a" $H"b" KBP7FO!"$=$N6&J,;6JQ?tL>$O"FIT_COV_a_b" HJj^$9!#

%P!<%8%g%s5 GO!"%3%^%s%I fit $N=q<0$OJQ99$5$l!"%-!<%o!<%I **error** $,;XDj$5lF$$$J$$>l9g$OC10L=E$_(**unitweights**) $,%G%U%)%k%H$KJj$^$7$?!#%*%W%7%g%s **v4** $G gnuplot %P!<%8%g%s4 $N%G%U%)%k%H$N5sF0KLaj$^$9!#0J2<$b;2>H: **fit (p. 69)**!#

%U%)%s%H%Q%9 (fontpath)

fontpath $N@_Dj$O!"%U%)%s%H%U%!%$%k$rFI$_9~$`>l9g$N%U%!%$%k$N8!:w%Q%9$rDI2CDj5A7^$9!#:#$NH3$m!" postscript =PNO7A<0$N$_$, **fontpath** $r%5%]!<%H$7$F$$$^$9!#%U%!%$%k$,8=:_$N%G%#%l%/%H%j$K8+$D$+$iJ+C?>l9g!"**fontpath** $N%G%#%l%/%H%j$,8!:w5l$^$9!#%5%]!<%H7F$$$k%U%)%s%H%U%!%$%k$N7A<0$K4X$9kh$j>\$7$$@bL@$O **terminal postscript** %;%/%7%g%s$NJ8=qCf$K$"$j$^$9!#

=q<0:

```
set fontpath {"pathlist1" {"pathlist2"...}}
show fontpath
```

%Q%9L>$OC10l$N%G%#%l%/%H%jL>!"$^$?$OJ#?t$N%Q%9L>$N%j%9%H$H7FF~NO7^$9!#J#?t$N%Q%9$+$iJk%Q%9%j%9%H$O OS 8GM-$N%Q%96h@Z$j!"Nc$($P Unix GO%3%m%s(':'), MS-DOS, Windows, OS/2 GO%;%_%3%m%s(';')Ey$G6h@Z$j$^$9!#**show fontpath**, **save**, **save set** %3%^%s%I$O!"2DHB@-$N$?$a$K OS 8GM-$N%Q%96h@Zjr%9%Z!<%9(' ') GCV-49$($^$9!#%G%#%l%/%H%jL>$,%(%/%9%/%i%a!<%7%g%s%^!<%/('!') $G=*$C$F$$$k>l9g!"$=$N%G%#%l%/%H%j$N%5%V%G%#%l%/%H%j$b8!:w5l$^$9!#

4D6-JQ?t GNUPLOT_FONTPATH $,@_Dj$5lF$$$k>l9g!"$=$NFbMF$O **fontpath** $KDI2C$5l^9,!"$=$l$,@_Dj$5lF$$$J$$>l9g%7%9%F%`$K0MB8$7$?%G%U%)%k%H$NCM$,;HMQ$5l^$9!#:G=i$K%U%)%s%H%Q%9$r;H$C$?$H$-$K!"$=$N4vD+$N%G%#%l%/%H%j$,B8:_9k$+%F%9%H$5$l!"%;%C%H$5l^$9!#$hCF!"0lHV:G=i$N**set fontpath**,

show fontpath, **save fontpath** $d! "Kd$a9~$_%U%)%s%H$r;HMQ7?>19g$N **plot**, **splot** $O! ">/$7;~4V$,$+$+$j $^$9!#$=$1$r>/$7GbC;$/$7$?$1$1$P!"4D6¬JQ?t GNUPLOT_FONTPATH $r@_Dj$7F/$@$5$$!#$=$&$9$1$P %G%#%1%/%H%j$N%A%*%C%/$O OFF KJj^$9!#%G%U%)%k%H$N%U%)%s%H%Q%9$,2?G"k+$O! "**show fontpath** $G 8+$k3H$,$G$-$^$9!#

show fontpath $O! "%f!<%6Dj5A$N fontpath $H%7%9%F%'$N fontpath $rJL!9$KI=<(7^9,!"**save**, **save set** %3%^%s%I$O! "%f!<%6Dj5A$N **fontpath** N_$rJ]B8$7$^$9!#

gd %i%$%V%i%j$rDL8F%U%!%$%kL>$G%U%)%s%H$K%"%/%;%9$9$k=PNO%I%i%$%P$K4X$7FO! "%U%)%s%H8!:w%Q%9$O4D6¬JQ?t GDFONTPATH $G@)8f$5$1$^$9!#

<4$N9o$_=q<0 (format)

:BI8<4$N9o$_$N8+=P$7$O! "%3%^%s%I**set format** $^$?$O**set tics format** $^$?$O8DJL$K%3%^%s%I**set {**<4**}tics format** $G=q<0$r@_DjG-$^$9!#

=q<0:

```
set format {<axes>} {"<format-string>"} {numeric|timedate|geographic}
show format
```

$3$3$G! "<axes> (<4) $O **x**, **y**, **xy**, **x2**, **y2**, **z**, **cb**!"$^$?$O2?$b;XDj7J$$$+($=$N>19g$=$N=q<0O9YF$N<4$KE,MQ$5$1$^$9) $N$$$:1+$G$9!#0J2<$N2 DN%3%^%s%I$OA4$/F1Ey$G$9:

```
set format y "%.2f"
set ytics format "%.2f"
```

=q<0J8;zNs$ND9$5$O100 J8;z$^$G!"$H@)8B$5$1$F$$$^$9!#%G%U%)%k%H$N=q<0J8;zNs$O"% h" $G!"LaTeX 7O $N=PNO7A<0$G$O"$%h$" $G$9!#B>$K"%.2f" $d"%3.0em" Nh$&$J=q<0$,9%^1k3HbB?$$$G7g$&!#"set format" $N8e$m$K2?$bD1$:$K<B9T9k$H!"%G%U%)%k%H$KLa7^$9!#

6uJ8;zNs"" $r;XDj$7$?>19g!"9o$_<+?H$OI=<($7$^$9$,8+=P$7OD1^$;$s!#9o$_<+?H$r>C9K$O!"**unset xtics** $^$?$O**set tics scale 0** $r;HMQ$7F/$@$5$$!#

=q<0J8;zNsGO!"2~9TJ8;z(\n) $d3HD%J8;zNs=hM}(enhanced text) MQ$N%^!<%/"%C%W$b;H$($^$9!#$3$N>19g $O!"C10l0zMQId(') GJ$/(") $r;H$CF/$@$5$$!#0J2<$b;2>H: **syntax (p. 45)**!#"%" $,F,$KD+JJ$J8;z$O $=$N$^$^I=<($5$1$^$9!#hCF!"=q<0J8;zNsFb$K%9%Z!<%9dJ8;zNs$JIrF~1k3H,G-$^$9!#Nc$($P"%g m" H9$1$P!"?tCM$N8e$K" m" $,I=<($5$1$^$9!#"%" <+?H$rI=<(9k>19gKO"%g %%" Nh$&$K2 $D=E M^$9!#

9o$_$K4X9khj>\$7$$>pJsKD$$$F$O!"0J2<$b;2>H: **set xtics (p. 177)**!#$^$?!"3NJ}K!$G=PNO$5$1$k?t;z$K%G%U%)%k%H0J30$N>.?tJ,N%J8;z$r;H$&djJ}KD$$$F$O!"0J2<;2>H: **set decimalsign (p. 119)**!#0J2<$b;2>H!#

%(%l%/%H%m%s (EE;R) %G%b (electron.dem).

Gprintf

J8;zNs4X?tgprintf("format",x) $O!"gnuplot %3%^%s%I$N**set format**, **set timestamp** JI$HF1MM$N!"gnuplot FHK+$N=q<0;XDj;R$r;H$$$^$9!#$3$1$i$N=q<0;XDj;R$O!"I8=`E*$JC 8@81$N4X?tG"$k sprintf() NbNHA4$/F1$8GO$"j^$;$s!#gprintf() $O!"@07A2=$5$1$k0z?t$O01$D7+<u1D1^$;$s!#$=$N$?$a$K!"gnuplot $K $Osprintf("format",x1,x2,...) 4X?t$bMQ0U$5$1$F$$$^$9!#gnuplot $N=q<0%*%W%7%g%s$N0lMwKD$$$F$O!"0J2<;2>H**format specifiers (p. 124)**!#

=q<0;XDj;R (format specifiers)

;HMQ2DG=$J=q<0(;~4V/F|IU%b!<%I$G$J$$>19g) $O0J2<$NDIjG$9:

L\@9$j%i%Y%k$N?tCM=q<0;XDj;R	
=q<0	@bL@
%f	8GDj>.?tE@I=5-
%e, %E	;X?tI=5-; ;X?t$NA0$K"e", "E" rD1k
%g, %G	%e ($^$?$O%E) $H%f $NN,5-
%h, %H	%g $K "e%S" GJ$/ "x10^{%S}" $+ "*10^{%S}" rD1k
%x, %X	16 ?JI=5-
%o, %O	8 ?JI=5-
%t	10 ?J$N2>?tIt
%l	8=:_$NBP?t<\$ND1$r4p?t$H9k2>?tIt
%s	8=:_$NBP?t<\$ND1$r4p?t$H9k2>?tIt; Jd=uC10L (scientific power)
%T	10 ?J$N;X?tIt
%L	8=:_$NBP?t<\$ND1$r4p?t$H9k;X?tIt
%S	Jd=uC10L$N;X?tIt (scientific power)
%c	Jd=uC10LJ8;z
%b	ISO/IEC 80000 5-K! (ki, Mi, Gi, Ti, Pi, Ei, Zi, Yi) $N2>?tIt
%B	ISO/IEC 80000 5-K! (ki, Mi, Gi, Ti, Pi, Ei, Zi, Yi) $N@\F,<-
%P	&P$NG\?t

Jd=uC10L('scientific' power) $O!";X?t$,3 $NG\?t$G$"$kh&JbNG$9!#Jd=uC10L;X?t("%c") $NU8;z$X$NUQ 49$O-18 $+$i+18 $^$G$N;X?t$KBP7F%5%]!<%H5l$F$$$^$9!#$3$NHC0O30$N;X?t$N>19g!"=q<0$CDL>o$N;X?t 7A<0$KLaj^$9!#

$[$+$K;H$&3HNG$-$k=$>~;l("%" $H=q<0;XDj;R$N4V$K=q$/bN) KO!"<!$N$$$/D+$,$"j^$9: "-" $O?t ;z$r:85MaK$7!""+" $O@5$N?tKbId9frD$1!"" " (6uGr0l$D) OIiN?t$K"-" rD1kY->l=j$K@5$N?t$N >19g$K6uGr$r0lDD$1!""#" $O>.?tE@0J2<$N?t;z$,0 $@$1G"CF$b>.?tE@$r$D$1!"@5$N@0?t$O=PNOI}$rDj $a!"=PNOI};XDj$ND>A0$N"0" (J8;z$GJ/?t;z) $O@hF,$K6u$$?ItJ,$r6uGr$GKdakBeoj$K0 GKda!">.?tE@ $N8e$KHsIi$N@0?t$r=q$$?bN$O@:EY$r0UL#7^$9(@0?t$N>19g$O:G>.7e!">.?t$N>19g$O>.?tE@0J2<$N7e?t)!#

3liNA4FN=$>~;l$r%5%]!<%H7F$$$JOS b"kG7g$&$7!"5UK3$l0J30$NbNrb%5%]!<%H9kOS b"kG7g$&!#5?$o$7$$>19g$O!"E,@Z$J;qNA$rD4$Y!"$=$7$F<B83$7F_F/$@$5$$!#

Nc:

```
set format y "%t"; set ytics (5,10)          # "5.0" $H "1.0"
set format y "%s"; set ytics (500,1000)      # "500" $H "1.0"
set format y "%+-12.3f"; set ytics(12345)    # "+12345.000  "
set format y "%.2t*10^%+03T"; set ytic(12345)# "1.23*10^+04"
set format y "%s*10^{%S}"; set ytic(12345)   # "12.345*10^{3}"
set format y "%s %cg"; set ytic(12345)       # "12.345 kg"
set format y "%.0P pi"; set ytic(6.283185)   # "2 pi"
set format y "%.0f%%"; set ytic(50)          # "50%"


set log y 2; set format y '%l'; set ytics (1,2,3)
#"1.0", "1.0", "1.5" $HI=<($5$l$k (3 $O 1.5 * 2^1 $J$N$G)
```

4]aH;X?t$,I,MW$HJkh&$J=q<0$G9.999 NMMJ?t;z$,=q$+lk>19g$OLdBj$,5/3k3H$,$"j^$9!#

<4$N%G!<%?7?$,F|;~%G!<%?(time/date) $N>19g!"=q<0J8;zNs$O'strftime' 4X?t('gnuplot' 30!#"man strftime" H7F_F/$@$5$$) $K4X$9$kM-8z$J;XDj$r9T$&I,MW$,$"j^$9!#;H$($kF~NO=q<0;XDj$N0lMw$K4X$7FO!"0J 2<;2>H:**set timefmt (p. 170)**!#

F|;~%G!<%?;XDj;R **(time/date specifiers)**

F|;~%G!<%?%b!<%I(time/date mode) GO!"<!$N=q<0$,;HMQG-$^$9:

F|IU;XDj;R	
=q<0	@bL@
%a	MKF|L>$N>JN,7A (Sun,Mon,...)
%A	MKF|L> (Sunday,Monday,...)
%b, %h	7nL>$N>JN,7A (Jan,Feb,...)
%B	7nL> (January,February,...)
%d	F| (01–31)
%D	"%m/%d/%y" $N4JN,7A (=PNO$N$_)
%F	"%Y-%m-%d" $N4JN,7A (=PNO$N$_)
%k	;~ (0–23; 1 7e$^$?$O2 7e)
%H	;~ (00–23; >o$K2 7e)
%l	;~ (1–12; 1 7e$^$?$O2 7e)
%I	;~ (01–12; >o$K2 7e)
%j	$=$NG/$NDL;;F| (001–366)
%m	7n (01–12)
%M	J, (00–60)
%p	"am" $^$?$O"pm"
%r	"%I:%M:%S %p" $N4JN,7A (=PNO$N$_)
%R	"%H:%M" $N4JN,7A (=PNO$N$_)
%S	IC (=PNOGO00–60 $N@O?t!"F~NO$G$O<B?t)
%s	1970 G/:G=i$+$i$NIC?t
%T	"%H:%M:%S" $N4JN,7A (=PNO$N$_)
%U	$=$NG/$NDL;;=5 (=5$OF|MKF|$+$i$H?t$ ($k)
%w	MKF|HV9f (0–6, F|MK = 0)
%W	$=$NG/$NDL;;=5 (=5$O7nMKF|$+$i$H?t$ ($k)
%y	@>Nq (0-99!"1969-2068 G/$N2<2 7e)
%Y	@>Nq (4 7e)

?t;z$rI=$9=q<OKO!"@hF,$K0 rKdak?aK"0" (%<%m) $rA0$KD1k3H,G-!"$^$?:G>.$N=PNOI}$r;XDj 9k$?$a$K@5$N@O?t$rA0$KD1k3HbG-$^$9!#=q<O%S $H%t $O@:EY;XDj$b<u1D1kNG!">.?t$N;~/J,/IC$r=q$/$3HbG-$^$9!#

;~9o;XDj;R	
=q<O	@bL@
%tH	%(%]%C%/;~XNAjBPE*$J@5Ii$N;~(24 GN4,La7J$7)
%tM	%(%]%C%/;~XNAjBPE*$J@5Ii$NU,
%tS	D>A0$NtH, tM 9'L\$KBP1~9k@5Ii$NIC?t

Nc (Examples) F\|IU=q<O$NNc:

x NCM,!"1976 G/12 7n25 F\|$N?<Lk>/$7A0$N;~9o$KBP1~9kIC?tG"kH2>Dj7^$9!#$3$N0lCV$N<4$N9o$_%i%Y%kJ8;zNs$O!"0J2<$Nh&KJj^$9:

```
set format x                # %G%U%)%k%H$G$O "12/25/76 \n 23:11"
set format x "%A, %d %b %Y" # "Saturday, 25 Dec 1976"
set format x "%r %D"        # "11:11:11 pm 12/25/76"
```

;~9o=q<O$NNc:

F\|IU=q<O;XDj$O!"IC?t$G$N;~4V$NCM$r!"$"$kFCDj$NF\|$N;~7W$N;~9o$K%(%s%3!<%I$7$^$9!#%hCF!";~$O0 $+$i23 $^$G!"J,$O0 $+$i59 $^$GN_$rF0$-$^$9$,!"$=liNIiNCMO!"%(%]%C%/(1970 G/1 7n1 F\|) hjA0$NF\|IU$KBP1~7^$9!#IC?t$G$N;~4V$NCM$r!";~4V0 KBP9$kAjBPE*$J;~/J,/IC$N?tCM$H7F=PNO5;kK$O!";~4V=q<O%tH %tM %tS $r;HMQ$7$^$9!#-3672.50 ICNCMO0J2<Nh$&$K=PNO5l$^$9!#

```
set format x                # %G%U%)%k%H$G$O "12/31/69 \n 22:58"
set format x "%tH:%tM:%tS"  # "-01:01:12"
set format x "%.2tH hours"  # "-1.02 hours"
set format x "%tM:%.2tS"    # "-61:12.50"
```

Function style

3N%3%^%s%I$N7A<0$O8=:_$O?d>)$5lF$$^$;$s!#0J2<;2>H:**set style function (p. 164)**!#

Functions

show functions %3%^%s%I$O%f!<%6!<$,Dj5A7?4X?tH=$NDj5AFbMF$rI=<(B7$^$9!#

=q<0:

```
show functions
```

gnuplot K*1k4X?t$NDj5A$H$=$N;H$$J}KD$$$F$O!"0J2<;2>H:**expressions (p. 27)**!#0J2<$b;2>H

```
%f!<%6Dj5A4X?t$G$N%9%W%i%$%s (spline.dem)
```

$*$h$S

```
4X?t$HJ#AGJQ?t$rMc$K;HMQ (airfoil.dem)!#
```

3J;R@~ (grid)

%3%^%s%I **set grid** $O3J;R@~$rIA$-$^$9!#

=q<0:

```
set grid {{no}{m}xtics} {{no}{m}ytics} {{no}{m}ztics}
         {{no}{m}x2tics} {{no}{m}y2tics}
         {{no}{m}cbtics}
         {polar {<angle>}}
         {layerdefault | front | back}
         { {linestyle <major_linestyle>}
           | {linetype | lt <major_linetype>}
             {linewidth | lw <major_linewidth>}
           { , {linestyle | ls <minor_linestyle>}
               | {linetype | lt <minor_linetype>}
                 {linewidth | lw <minor_linewidth>} } }
unset grid
show grid
```

3J;R@~OG0U$N<4$NG$0U$NBgL\@9$j/>.L\@9$jKBP7$FM-8z/L58z$KG-!"$=$NBgL\@9jH>.L\@9jKBP9k@~<o!"@~I}$b;XDj$G$-!"8=:_$N=PNOAuCV$,%5%]!<%H$9$kHO0O$G!"$"$i$+$8$aDj5A$7$?%i%$%s%9%?%$%k$r;HMQ9k3HbG$-$^$9!#

5i$K!"2<!85$NIA2hGO6K:BI83J;R$b;H$&3H$,$G$-$^$9!#Dj5A2DG=$J6h4VKBP7$F!"A*Br$5l?L\@9jrDL$kF1?41_$HCf?4$+$i$NJ|<M>u$N@~$,IA$+l^$9($=$N6h4V$O**set angles** $N@_Dj$K7?$,$C$FEY!"$^$?$O%i%8%"%s$G;XDj$7$^$9)!#6K:BI83J;R$O8=:_$O6K:BI8%b!<%IGO<+F0E*KO@8@.5l$J$$$3HKCm0U7F$/$@$5$$!#

set grid $,IA$/A0$K!"I,MW$JL\@9jOM-8zKJCF$$$JlPJj$^$;$s!#**gnuplot** $O!"B8:_$7$J$$L\@9jKBP9k3J;R$NIA2h$NL?Na$OC1$KL5;k7^$9!#$7$+$7!"8eG=$NL\@9$j$,M-8z$KJlP=lKBP9k3J;RbIA-$^$9!#

>.3J;R@~KBP9$k@~<o$r2?$b;XDj$7J1lP!"Bg3J;R@~$HF1$8@~<o$,;H$ol^$9!#%G%U%)%k%H$N6K:BI8$N3QEY$O30EY$G$9!#

front $r;XDj$9kH!"3J;R@~$O%i%U%N%G!<%?2$N>eKIA+l^$9!#**back** $,;XDj$5l?>19g$O3J;R@~$O%i%U%N%G!<%?2$N2<$KIA$+$l$^$9!#**front** $r;H$($P!"L)=8$7$?%G!<%?2$G3J;R@~$,8+$(J/Jk3HrKI0$3$H$,$G$-$^$9!#%G%U%)%k%H$G$O **layerdefault** $G!"$3lO2D IA2hGO **back** $HF1$8$G$9!#3D IA2h$N%G%U%)%k%H$O!"3J;R$H%0%i%U$NDH$r2$D$NIA2hC10L$KJ,N%$7!"3J;R$O8emK!"OH$OIA2h%G!<%?2$^$?$O4X?t$NA0$K=q$-$^$9!#$?$@$7!"**hidden3d** %b!<%I$G!"$=l,$=$l<+?H$NJUB$S49$($r7F$$$^9N$G!"3J;R@~$N=gHV$N%*%W%7%g%s$OA4$FL5;k$5$l!"3J;R@~$b1#@~=hM}K+1il^$9!#$3li$N%*%W%7%g%s$O!"<B:]KO3J;R@~$@$1GJ$/!"**set border** Kh$k6-3&@~H=$NL\@9jN9o$_(0J2<;2>H: **set xtics (p. 177)**) Kb1F6A$r5Z$\$7$^$9!#

z $N3J;R@~$OIA2h$NDlLL$KIA$+$l$^$9!#3l$OIA2h$N<~jKItJ,E*$JH"$,IA2h5l$F$$k>19gKO$$$G7g$&!#0J2<;2>H: **set border (p. 110)**!#

1#@~=hM} (hidden3d)

set hidden3d %3%^%s%I$O6JLLIA2h(0J2<;2>H: **splot (p. 185)**) $G1#@~=hM}$r9TJ&h&$K;X<($7$^$9!#$=$N=hM}$NFbIt%"%k%4%j%:%'$K4X9kDI2C5!G=b3$N%3%^%s%I$G@)8fG-$^$9!#

=q<O:

```
set hidden3d {defaults} |
             { {front|back}
               {{offset <offset>} | {nooffset}}
               {trianglepattern <bitpattern>}
               {{undefined <level>} | {noundefined}}
               {{no}altdiagonal}
               {{no}bentover} }
unset hidden3d
show hidden3d
```

gnuplot $NDL>o$NI=<(HO0[Jj!"1#@~=hM}GOM?$($il?4X?t!"$^$?$O%G!<%?$N3J;R@~$r!"<B:]$N6JLL$,$=$N6JLL$NGX8eK"CF1#5l$F$$$kIA2hMWAG$O8+$;$J$$$N$HF1$8h&$K=hM}$7$^$9!#3l$,5!G=$9k?aK$O!"$=$N6JLL$,'3J;R>u'(0J2<;2>H: **splot datafile (p. 185)**) G"kI,MW,$"$j!"$^$?$=$liO **with lines** $+ **with linespoints** GIA+lF$$$J1l$P$$1$^$;$s!#

hidden3d $,M-8z$JH-$O!"3J;R@~$@1GJ/!"LLItJ,$dEZBf$N>e$NEy9b@~(0J2<;2>H: **set contour (p. 115)**) $b1#$5l^$9!#J#?t$NLL$rIA2h$7$F$$k>19g$O!"3F6JLL$O<+J,<+?H$HB>$N6JLL$G1#$5lkItJ,$b;}$A$^$9!#6JLL>eXNEy9b@~$NI=<((**set contour surface**) $O5!G=$7$^$;$s!#

gnuplot %P!<%8%g%s4.6 GO!"%O%i%U>e$K6JLL$,0lDbJ>uBVGb!"hidden3d $O**points**, **labels**, **vectors**, **impulses** $N3<!85$NIA2h%9%?%$%k$K1F6A$rM?$($^$9!#**vectors** $O!"1#$5lJ$ItJ,$O@~J,(Lp@h$J$7)H7$FI=<($5l^$9!#%O%i%UFb$N3F!9$NIA2h$r3N=hM}$+$iL@<(E*$K=|30$7$?$$H$-$O!"**with ;** XDj$KFCJL$N%*%W%7%g%s **nohidden3d** $rDI2C$7F/$@$5$$!#

hidden3d $O!"pm3d %b!<%I$GIA2h5l$?!"E I$jDY5l$?6JLL$K$O1F6A$rM?$($^$;$s!#pm3d $N6JLL$KBP7FF1MM$N8z2L$r=c?h$KF@$?$$JiP!"3lNBeojK **set pm3d depthorder** $r;H$CF/$@$5$$!#J#?t$N pm3d 6JLL$KDL>o$N **hidden3d** =hM}$rAH$_9g$o$;$kKO!"%*%W%7%g%s **set hidden3d front** $r;HMQ$7F/$@$5$$!#3l$O!"hidden3d =hM}$NA4FNMWAG$r!"pm3d 6JLL$r4^$`;D$j$NB>$NIA2hMWAG$N8e$K6/@)E*$KIA2h$9kbNG$9!#

4X?tCM$O3J;R8IN)@~$N8rE@$GI>2A$5l^$9!#8+$k3H$N=EMh$k@~J,$r5a$akH$-$O8D!9$N4X?tCM!"$"$k$$$O%?E@$N4V$O$=$N%"%k%4%j%:%'KhCF@~7AJd4V5l$^$9!#3l$O!"**hidden3d** $GIA2h$9$k>19g$H **nohidden3d** $GIA2h$9$k>19g$G4X?t$N8+$+1,0[Jk3H$r0UL#$7$^$9!#J<Ji$P!"8e<T$N>19g4X?tCM$O3FI8K\E@$GI>2A5lk+iG$9!#$3$N0c$$K4X9k5DO@KD$$F$O!"0J2<;2>H: **set samples (p. 159)**, **set isosamples (p. 129)**!#

6JLL$NL#$5lkItJ,$r>C5n$9kN$K;H$olk%"%k%4%j%:%'$O!"$3$N%3%^%s%I$G@)8f5l$k$$$/D+$NDI2C%*%W%7%g%s$r;}CF$$^$9!#**defaults** $r;XDj$9lP$=$liO9Y$F!"0J2<$G=RYkh&$J%G%U%)%k%H$NCM$K@_Dj$5l^$9!#**defaults** $,;XDj$5lJ$+$C$?>19g$K$O!"L@<(E*$K;XDj5l$?%*%W%7%g%s$N$_$,1F6A$r<u$1!"$=$l0J30NbNO0JA0NCM,0z$-7Q$,l^$9!#$hCF!"$=$liN%*%W%7%g%sNCMr$$A$$A=$@5$9k3HJ$/!"C1$K **set {no}hidden3d** N_$G1#@~=hM}$r%*%s/%*%UG-k3HKJj$^$9!#

:G=i$N%*%W%7%g%s **offset** $O'N"B&'$N@~$rIA2h$9$k@~$N@<o$K1F6A$rM?$($^$9!#DL>o$O6JLL$NI=N"$r6hJL9k$?$a$K!"N"B&$N@<o$O!"I=B&$N@<ohj0lDBg-$$HV9f$N@<o$,;Hol$^$9!#**offset** <**offset**> KhCF!"$=$NDI2C9kCM$r!"%G%U%)%k%H$N1 HO0[JkA}J,CM$KJQ9$G$-$^$9!#**nooffset** %*%W%7%g%s$O **offset 0** $r0UL#$7!"3l$OI=N"$GF1$8@~o$r;H$&$3HKJj$^$9!#

<!$N%*%W%7%g%s$O **trianglepattern** <**bitpattern**> $G$9!#<bitpattern> $O0 $+$i7 $^$G$N?t;z$G!"%S%C%H%Q%?!<%s$H2r<a$5l^$9!#3F6JLL$O;03Q7A$KJ,3d$5l^9,!"3N%S%C%H%Q%?!<%s$N3F%S%C%H$O$=$liN;03Q7A$N3FJU$NI=<($r7hDj$7$^$9!#%S%C%H0 $O3J;R$N?eJ?JU!"%S%C%H1 $O3J;R$N?hD>JU!"%S%C%H2 $O!"85!9$N3J;R$,2 DN;03Q7A$KJ,3d$5lkH-$NBP3QJU$G$9!#%G%U%)%k%H$N%S%C%H%Q%?!<%s$O3 $G!"$3lOA4FN?eJ?JU$H?hD>JU$rI=<($7!"BP3QJU$OI=<(7J$$3Hr0UL#7^$9!#BP3QJU$bI=<(9k>19g$O7 $r;XDj$7$^$9!#

%*%W%7%g%s **undefined** <**level**> $O!"Dj5A$5lF$$J$(7g$1$F$$k%G!<%?(M?$($il?x,y,z $NHO0$rD6$($F$$k%G!<%?E@KE,MQ5;$k%"%k%4%j%:%'$r;X<(7^$9!#$=Nh$&$JE@$O!"$=lG$bI=<($5lF7^$&$+!"$^$?OF~NO%G!<%?$+$i<h$j=|$+l^$9!#<h$j=|$+$lF7$^$&E@$K@\$9$kA4$F$N6JLIMWAG$OF1MM$K<h$j=|$+$l!"hC$F6JLL$K7j$,@8$8$^$9!#<level> = 3 $N>19g!"$3lO **noundefined** $HF1$8

$G! "$IsJE@$b<N$Fil$^$;$s! #$3lOB>$N>l=j$G$"$ifk<oN`$NLoBj$r0z$-5/$3$7F@$kNG;HoJ$$Y$-$G $9! #<level> = 2 GOL$Dj5A$NE@$O<NFil^9,! "HOOO$rD6$ ($?E@$b<NFil^$;$s! #<level> = 1 GO! " 3l$,%G%U%)%k%H$G9,! "HOOO$rD6$ ($?E@$b<NFil^$9! #

noaltdiagonal $r;XDj$9kH! "**undefined** $,M-8z$NH-(9JoA<level> $,3 GJ$$>19g) $K5/$3$k0J2<$N>19g$N%G%U%)%k%H$G$N<h07$$$rJQ99G-$^$9! #F~NO6JLL$N3F3J;R>u$NItJ,$C01lJ}$NBP3Q@~KhCF2 DN;03Q7A$KJ,3d$5l^$9! #DL>o$O$=$liNBP3Q@~$NA4$F$,3J;R$KBP7FF1$8J}8~$r8~$$F$$^$9! #$b$7! "$"$k3J;R$N4 DN3QN&$A0l$D$, **undefined** =hM}$KhjHj=|$+$l$F$$F! "$=$N3Q$,DL>o$NJ}8~$NBP3Q@~$K>hCF$$$k>19g$O! "$=$NN>J}$N;03Q7A$,<h$j=|$+$lF7$^$$^$9! #$7$+$7! "b7%G%U%)%k%H$N@_Dj$G$"$k**altdiagonal** $,M-8z$KJC$F$$$k>19g! "$=$N3J;RKD$$F$OB>J}8~$NBP3Q@~$,Be$ojKA*Br5l! "6JLL$N7j$NBg$-$5$,:G>.$KJkh&K7$^$9! #

bentover %*%W%7%g%s$O:#EY$O**trianglepattern** HHbK5/3kJLN3Hr@)8f7^$9! #$+Jj7o$/$AcN6JLLGO! "2<$N ASCII J8;z3($K=q$$?h&$K! "6JLL$N1 DN3J;R$,2 DKJ,1il?;03Q7A$NI=$HN"$NH?BPB&$,8+$($F7^$&>19g($9Jo$A! "85$N;M3Q7A$,@^$j6J2ilF$$$k('bent over') >19g) $,$"j^$9:

```
                                                        C----B
   85$N 4 3Q7A:      A--B       I=<($5$l$k 4 3Q7A:       |\   |
("set view 0,0")     | /|     ("set view 75,75" perhaps)  | \  |
                     |/ |                                  |  \ |
                     C--D                                  |   \|
                                                           A    D
```

6JLL$N3J;R$NBP3QJU$,<bitpattern> $N2 bit KhCF8+$($kh&KOJCFO$$$J$>19g! ">e$NBP3QJU CB OI3K$b=q$+lJ$$$3HKJj! "$=$l$,7k2L$NI=<($rM}2r$7K/$$$bNK7^$9! #%G%U%)%k%H$GD;j5A5l$k**bentover** %*%W%7%g%s$O! "3Nh&&$J>19g$=lrI=<(9kh&&K7$^$9! #b7$=$&7?$/$J$$$J$i! "**nobentover** $rA*Br$7F$/$@$5$$! #0J2<$b;2>H

```
1#@~=hM}$N%G%b (hidden.dem)
```

$*$h$S

```
J#;($J1#@~$N%G%b (singulr.dem).
```

Historysize

(Hs?d>)) **set historysize N** $O! "**set history size N** $HF1$8$G$9! #**unset historysize** $O! "**set history size -1** $HF1$8$G$9! #

%3%^%s%IMzNr (history)

=q<0:

```
  set history {size <N>} {quiet|numbers} {full|trim} {default}
```

gnuplot $N=*N;;~$K%R%9%H%j%U%!%$%k$KJ]B8$9$k9T?t$r! "history size NCMK@)8B7^$9! #**set history size -1** H9kH! "%R%9%H%j%U%!%$%k$K=q$-=P$99T?t$N@)8B$,J/Jj$^$9! #

%G%U%)%k%HGO! "%3%^%s%I **history** $O3F%3%^%s%I$NA0$K9THV9f$r=PNO7^$9! #**history quiet** $O! ":#2s$N<B9T KBP7FN$_HV9f$r>JN,7^9,! "**set history quiet** $O! ":#8e$N9YFN **history** $NHV9f$r>JN,7^$9! #

%*%W%7%g%s **trim** $O! "8=:_$N%3%^%s%IKBP9$kA0$NF1$8$bNr:o=|9k3H$G! "%3%^%s%IMzNrF)$N=EJ#9k9T $N?t$r8:i7$^$9! #gnuplot $N%P! <%8%g%s5 0JA0$G$O! "$3l,%G%U%)%k%H$N5sF0$G7?! #

%G%U%)%k%H$N@_Dj: **set history size 500 numbers trim**

8IN)@~%5%s%W%k?t (isosamples)

4X?trLLH7FIA2h9k>19g$N8IN)@~(3J;R) $NL)EY$O%3%^%s%I **set isosamples** $GJQ99$G$-$^$9! #

=q<0:

```
     set isosamples <iso_1> {,<iso_2>}
     show isosamples
```

3F6JLL%0%i%U$O <iso_1> 8D$N u-8 IN)@~$H <iso_2> 8D$N v-8 IN)@~$r; }$A$^$9! #<iso_1> N_; XDj9l$P! " <iso_2> $O <iso_1> $HF1$8CM$K@_Dj$5l^$9! #%G&U%)%k%H$G$O! "u, v $=$l$>$l 10 K\$NI8K\2=$,9T$ol^$9! # I8K\?t$rbC$HB?$/9lPh$j@53N$J%0%i%U$,:n$il^9,! "; ~4V$,$+$+$j$^$9! #3liN%Q%i%a! <%?$O! "%G! < %?%U%!%$%k$NIA2h$K$O2?$b1F6A$rM?$ ($^$;$s! #

8 IN)@~HO! "6JLL$N0l$D$NG^2pJQ?t$r8GDj7F! "b&0lDNG^2pJQ?tKhCFIA$+$l$k6J@~$N3H$G$9! #8 IN) @~$O! "6JLL$rI=< (9kC1=c$JJ}K!$rM?$ ($^$9! #6JLL s(u,v) $NG^2pJQ?t u $r8GDj$9k3HG u-8 IN)@~ c(v) = s(u0,v) $,:n$i$l! "G^2pJQ?t v $r8GDj$9k3HG v-8 IN)@~ c(u) = s(u,v0) $,$G$-$^$9! #

4X?t$N6JLL%0%i%U$,1#@~=hM}J7GIA+lF$$$k>19g! "**set samples** $O3F8 IN)@~>e$GI8K\2=5l$kE@$N?t$r @)8f$7$^$9! #0J2<; 2>H: **set samples (p. 159)**,**set hidden3d (p. 128)**! #Ey9b@~IA2h%k! <%A%s$O! "4X?t$NE@ $NI8K\2=$O3F8 IN)@~$N8rE@$G9TolkH2>Dj7F$$$kNG! "4X?t$N6JLL$HEy9b@~$N2rA|EY$rJQ99$9$kH-$O! " **isosamples** $HF1$8h&$K**samples** $rJQ99$9kN$,K>$^$7$$G7g$&! #

K^Nc (key)

%3%^%s%I **set key** $O! "IA2hNN0hFb$N3F%0%i%UKBP9$k%?%$%H%k$H%5%s%W%k (@~! "E@! "H") $r; }$DK^Nc ($^$?$O I=Bj) $rM-8z$K7^$9! #K^Nc$N5!G=$O! "**set key off** $+**unset key** $GL58z$KG-$^$9! #K^Nc$N8D! 9$N9 'L\$K$D $$F$O! "BP1~$9$k plot %3%^%s%I$G$-! <%o! <%I **notitle** $r; HMQ$9k3HGL58zKG$-$^$9! #K^Nc$N%?%$%H%kJ8 ; zNs$O! "%*%W%7%g%s **set key autotitle** $d! "8D! 9$N **plot** $d **splot** %3%^%s%I>e$N **title** %-! <%o! <%I$G@)8f$G$- $^$9! #>\:Y$COJ2<; 2>H: **plot title (p. 99)**! #

=q<O:

```
set key {on|off} {default}
      {{inside | outside} | {lmargin | rmargin | tmargin | bmargin}
        | {at <position>}}
      {left | right | center} {top | bottom | center}
      {vertical | horizontal} {Left | Right}
      {{no}opaque}
      {{no}reverse} {{no}invert}
      {samplen <sample_length>} {spacing <vertical_spacing>}
      {width <width_increment>} {height <height_increment>}
      {{no}autotitle {columnheader}}
      {title "<text>"} {{no}enhanced}
      {font "<face>,<size>"} {textcolor <colorspec>}
      {{no}box {linestyle <style> | linetype <type> | linewidth <width>}}
      {maxcols {<max no. of columns> | auto}}
      {maxrows {<max no. of rows> | auto}}
unset key
show key
```

%-! <Fb$N3EMWAG$O **vertical** (=D) $^$?$O **horizontal** (2#) $K=>$C$F=E$Mil$^$9! #**vertical** $N>19g! "K^Nc$O2D G=Ji$P 2,3 8D$N=DNNsr; H$$^$9! #$9Jo$A! "3EMWAG$O?bD>%9%Z! <%9$,$J$/$Jk^GO1 DNNs$K@0Ns$5$l $^$9$,! "$=3+$i?7$7$$Ns$,3+; O$5l^$9! #?bD>%9%Z! <%9$O! "**maxrows** $r; H$C$F@)8B$G$-$^$9! #**horizontal** $N>19g$O! "K^Nc$O2#$N9TrG$-$k$@$1>/J/; H$*$&H7$^$9! #?eJ?J}8~$N%9%Z! <%9$O **maxcols** Kh$j@)8B$G $-$^$9! #

%G&U%)%k%HGO! "K^Nc$O%0%i%UNN0h$NFbB&$N1&>e$N3QKCV+l^$9! #%-! <%o! <%I **left**, **right**, **top**, **bottom**, **center**, **inside**, **outside**, **lmargin**, **rmargin**, **tmargin**, **bmargin** (, **above**, **over**, **below**, **under**) $O! "%0 %i%UNN0h$NB>$N>l=j$X$N<+F0E*$JG[CVN?aK; HMQ7^$9! #K^Nc$NIA2hrI3KCV$/$+rh$j>\$7$/; X< ($9$k $?$a$N**at** <**position**> b"j^$9! #$3$N>19g! "%-! <%o! <%I **left**, **right**, **top**, **bottom**, **center** $,F1MM$N4p=` E@9go;$N@_Dj$NL\E*$G; H$ol^$9! #$h$j>\$7$/$O! "0J2<; 2>H: **key placement (p. 132)**! #

%0%i%U$N%?%$%H%k$N9TB7$ ($O **Left**, **Right** (%G&U%)%k%H) $G; X< ($7$^$9! #%i%Y%kJ8; zNs$H6J@~$N%5%s%W%k$O: 81& F~$lBX$ (k3H,G-$^$9(**reverse**) $7! " A4BN$rOHGOO '3HbG$-$^$9(**box {...}**)! #$=NOHN@~$O! "@~<o (**linetype**), @~I} (**linewidth**)! "$"$k$$$ODj5A:Q$N%i%$%s%9%?%$%k (**linestyle**) $r; XDj$9k3HbG-$^$9! #

%G&U%)%k%HGO! "K^Nc$O0l$D$N%0%i%U$HF1; ~$K:n$il^$9! #$9Jo$A! "K^Nc$N5-9f$H%?%$%H%k$O! "$=lKBP1~ 9k%0%i%U$HF1; ~$KIA$+$l$^$9! #$=$l$O! "?7$7$$%0%i%U$,; ~$KOK^NcN>e$KMWAG$r$+$V$;$FG[CV7&k3Hr 0UL#7^$9! #**set key opaque** $O! "K^Nc$r9YFN%0%i%U$NIA2h$,=*C?8e$K@8@.$5$;$^$9! #$3$N>19g! "K^Nc

$NNN0h$OGX7J?'GEIjDV5lFK^NcN5−9f$H%?%$%H%k$,IA$+l^$9! #$hCF! "K^Nc<+?H$O$$/D+$NIA2hMW AG$rJ$$$1#7F7^$F@$k3HKJj^$9! #**set key noopaque** $G%G%U%)%k%H$KI|5"G−$^$9! #

%G%U%)%k%HGO! ": G=i$NIA2h$N%i%Y%k$,K^Nc$N0lHV>e$K8=$o$l! "$=lKB3$/%i%Y%k$,$=$N2<KJBs$G9T$−$^$9! #%*%W%7%g%s **invert** $O! ": G=i$N%i%Y%krK^NcN0lHV2<KCV−! "$=$l$KB3$/%i%Y%kr=$N>e$KJBYF9T$−$^$9! #$3$N%*%W%7%g%s$O! "K^Nc$N%i%Y%k$N=DNJBS$N=gHV$r! "@Q$_>e$27A<0$N%R%9%H%0%i%`(**histograms**) $NH"$N=gHV$K9g$o$;$kH−$KJXMx$G7g$&! #

<height_increment> $O! "K^Nc$NH"$N9b$5$K2C$($?$j8:i7$?$j9k9b$5(2?J8;zJ,$+) $rI=$9?tCM$G$9! #3l$O<g$K! "K^Nc$N2s$j$KH"$rIA$/>l9g$G! "K^NcNJBS$N2s$j$N6−3&@−$rhjBg$−$/7?$>l9g$NbN$G$9! #

A4BNKEOk%?%$%H%k$rK^Nc$N>e$KD1k3HbG−$^$9(**title** "<**text**>")!#C10l0zMQId(') $HFs=E0zMQId(") $N0c$$$K$D$$F$O! "0J2<$b;2>H: **syntax (p. 45)**!#

set key $N%G%U%)%k%H$O! "**on**, **right**, **top**, **vertical**, **Right**, **noreverse**, **noinvert**, **samplen 4**, **spacing 1.25**, **title ""**, **nobox** $G$9! #K^NcNOHN@~<o$O%G%U%)%k%H$G$O%0%i%UIA2h$N3OOH$HF1$8bN$,;H$ol^$9! #**set key default** H9kH%G%U%)%k%H$N@_Dj$KLaj^$9! #

K^Nc$O! "1 9T$K1 6J@~J,$:$D$N?t9T$N$^$H$^$jH7$F=q$+l^$9! #BF9T$N1&B&KO(**reverse** $r;H$C$F$$$l$P:8B&$K$O) $=$N6J@~$HF1$8<dN'$ND>@~$N%5%s%W%k$,0z$+$l! "B>$NB&KO**plot** %3%^%s%I$+$iF@il$kJ8;zNs(title) $,CV$+l^$9! #$3li$N9T$O! "2M6u$ND>@~$,K^Nc$N:8B&$H1&B&$rJ,$1k+Nh$&$K?bD>$K@0Ns$5l^$9! #%3%^%s%I **set key** $G;XDj$9$k:BI8$O3N2M6u$N@~J,$N>e$NC<$N:BI8$G$9! #**plot** GOD>@~$N0LCV$r;XDj9k$?$a$K x $Hy $@$1$,;H$o$l! "**splot** GO! "x, y, z $NCMA4$F$r;H$$! "%0%i%U$r2<!85LL$XEj1F9kNHF1$8J}K!$r;HCF! "2M6u$ND>@~$N2<!852hLLGN0LCV$r@8@.$7$^$9! #

TeX, LaTeX 7O$N=PNO7A<0$d! "@07A>pJs$,J8;zNs$KKd$a9~$^lk=PNO7A<0$r;H$&>l9g$O! "**gnuplot** OK^NcN0LCV7haN$?$a$NJ8;zNs$NI}$rI>2A$9k3H7$+$G$−$^$;$s! #hCFK^Ncr:8KCV/>l9g$O! "**set key left Left reverse** $H$$$&AH9g$;$r;H$&$N$,$$$$G7g$&! #

splot $GEy9b@~$r=q$/>l9g! "%G%U%)%k%H$GOK^NcKEy9b@~$N%i%Y%k$bI=<(7^$9! #$=$NI=<($O**set cntrlabel format** $GD4@0$G$−$^$9! #

Nc

```
0J2<$O%G%U%)%k%H$N0LCV$KK^Nc$rI=<($7$^$9:
     set key default

0J2<$OK^Nc$rI=<($7$J$/$7$^$9:
     unset key

0J2<$O%G%U%)%k%H$N(Bh0l$N):BI87O$G$N(2,3.5,2) $N0LCV$KK^Nc$rI=<($7$^$9:
     set key at 2,3.5,2

0J2<$OK^Nc$r%0%i%U$N2<$KI=<($7$^$9:
     set key below

0J2<$OK^Nc$r:82<3Q$KI=<($7! "%F%−%9%H$O:8$K9TB7$($G! "%?%$%H%k$r$D$1! "@~<o3 $N3OOH$r=q$−$^$9:
     set key left bottom Left title 'Legend' box 3
```

K^Nc$NK<+F0%?%$%H%k **(key autotitle)**

set key autotitle $O! "K^Nc$N3F%0%i%U$r! "plot %3%^%s%I$G;HMQ7?%G! <%?%U%!%$%k$d4X?t$NL>A0$KhC$FFCDj$9kh$&$K7^9,! "3l$,%G%U%)%k%H$N5sF0$G$9! #**set key noautotitle** $O! "$=$NK<+F0E*$J%0%i%U%N%?%$%H%kIU$1$rL58z$K7^$9! #%3%^%s%I **set key autotitle columnheader** $O! "3FF~NO%G! <%?$N@hF,9T$N3FNs$N%(%s%H%j$r%F−%9%HJ8;zNs$H2r<a$7! "BP1~$9$kIA2h%0%i%U$N%?%$%H%k$H7F;HMQ7^$9! #IA2h$5lkNL$,! "U#?t$NNs%G! <%?$N4X?t$G$"$k>l9g$O! "gnuplot $O<I$NNs$r%?%$%H%k$NIA2h$K;H$($P$$$$N$+$o$+j$^$;$sNG! "$=$N>l9g! "plot %3%^%s%I>e$G! "Nc$($P0J2<$Nh&$KL@<(E*$K%?%$%H%k$NNs$r;XDj$9kI,MW,"j^$9! #

```
     plot "datafile" using (($2+$3)/$4) title columnhead(3) with lines
```

Cm0U: **set key autotitle columnheader** H9kH! "$?$H$(K^Nc(key) $,**unset key** $GL58z$KJC$F$$$k>l9gGb! "1 NsL\$r%G! <%?H7FGOJ$/! "Ns$N%X%C%@H7$F=hM}$7$^$9! #3l$O! "**stats** $d**fit** Nh$&KK^Ncr:niJ$$%3%^%s%IKBP7FbF1MM$G$9! #

$^$?! "$$:lN>l9gGb! "plot %3%^%s%I$KL@<(E*$J**title** $d**notitle** %−! <%o! <%I$r;XDj$9lP! "$=$l$O**set key autotitle** Kh$k@_Dj$h$jM%@h$5l^$9! #

K^Nc$NG[CV (key placement)

G[CV$N;EAH$_$rM}2r$?aN:G$b=EMW$J35G0$O!"%0%i%UNN0h!"$9JoAFb+30$+$H$$$&3H$H!"%0%i%UNN0h$N6-3&HN4V$NM>Gr (margin) $r9M$(k3HG$9!#%0%i%UNN0h$K1hCF!"%-!<%o!<%I **left/center/right** (l/c/r) $H **top/center/bottom** (t/c/b) $O!"K^Nc (key) r=$NNN0h$NFbB&NI3KCV$/$+$r@)8f7^$9!#

%b!<%I **inside** GO!"K^Nc$O%-!<%o!<%I **left** (l), **right** (r), **top** (t), **bottom** (b), **center** (c) KhCFOJ2<$N?^$Nh&$KIA2hNN0h$N6-3&$K8~$+CF=PNO5l$^$9:

```
    t/l   t/c   t/r

    c/l    c    c/r

    b/l   b/c   b/r
```

%b!<%I **outside** Gb>e$HF1MM$K<+F0E*$KG[CV$5l^9,!"%0%i%UNN0h$N6-3&$KBP7F!"$H$$$&hjb'7m8+$?L\$KBP7F!"$H$$$&Y-G7g&!#9JoA!"%0%i%U$N6-3&$O!"%0%i%UNN0h$N30$NK^Nc$N>l=j$r:nk?aK!"F'bB&$K0\F0$9k3HKJj$^$9!#7+$7!"$3lOB>$N%i%Y%k$NK^YKbr7$^$9$7!"$b7+7?$i=PNO%G%P%$%9KhCF$O%(%i!<$r0z$-5/$3$9$+b7l^$;$s!#K^Nc$N=PNO$K9go;FI$NIA2h6-3&$,0\F0$9$k$+$O!"eK=RY?K^Nc$N0LCV!"$*hS=E$M>e$2$NJ}8~$K0MB8$7$^$9!#4J}8~$NCf?4B7$($N%*%W%7%g%s (**center**) $K4X$7FO!"IN6-3&$,F0$/N+$K4X$9k"$$$^$$$5O6"j^$;$s$,!"3Q$X$N=PNO$N%*%W%7%g%sKD$$$F$O!"=E$M>e$2J}8~$, **vertical** $N>l9g$O:8$^$?$O1&$N6-3&$,!"**horizontal** $N>l9g$O>e$^$?$O2<$N6-3&$,!"$=l>$lFbB&$KE,@Z$K0\F0$7$^$9!#

M>Gr (margin) $N=q$-J}$O!"=E$M>e2NJ}8~K+$+$o$J$$$<+F0E*$JG[CV$r2DG=K7$F$$$^$9!#**lmargin** (lm), **rmargin** (rm), **tmargin** (tm), **bmargin** (bm) N&AN0lDr!"L7=b7J$$1J}8~$N%-!<%o!<%I$HAH$_9g$o$;$F;HMQ7?>l9g!"0J2<$N?^$K<(7?>l=jKK^Nc,G[CV5l$^$9:

```
          l/tm  c/tm  r/tm

    t/lm                  t/rm

    c/lm                  c/rm

    b/lm                  b/rm

          l/bm  c/bm  r/bm
```

%-!<%o!<%I **above** $H **over** $O **tmargin** $HF1$80UL#$G$9!#0JA0$N%P!<%8%g%s$H$N8_49@-$N$?a$K!"**above** $H **over** $Ol/c/r $d=E$M>e$2J}8~$N%-!<%o!<%IJ?$G;HMQ$9kH!"**center** $G **horizontal** $r;H$$$^$9!#%-!<%o!<%I **below** $H **under** $O **bmargin** $HF1$80UL#$G$9!#8_49@-N?a$K!"**below** $H **under** $Ol/c/r $d=E$M>e$2J}8~$N%-!<%o!<%IJ?$G;HMQ$9kH**center** $G **horizontal** $r;H$$$^$9!#$5i$K!"**outside** $b8_49@-$N$?a$Kt/b/c $d=E$M>e$2J}8~$N%-!<%o!<%I$,$JJ1lP!"**top**, **right**, **vertical** (D^$j>e$Nt/rm $HF1$8) $r;HMQ$7$^$9!#

K^Nc$N0LCV(<position>) $O!"0JA0$N%P!<%8%g%s$HF1MMC1$Kx,y,z $r;XDj$7Fb$$$$$G9,!"$=$N:G=i$N%5%s%W%k9T$N:BI8$N:BI=7O$rA*Br9k$?$a$N5 DN%-!<%o!<%I (**first**, **second**, **graph**, **screen**, **character**) $rF,$KD1k3HbG-$^$9!#>\:Y$O!"0J2<;2>H: **coordinates (p. 24)**!#<position> $,M?$(il$?>l9g$N **left**, **right**, **top**, **bottom**, **center** $N8z2L$O!"label %3%^%s%I$GG[CV$5lkJ8;zNs$N>l9g$HF1$8$h$&$K4p=`0LCV$N0LCV9g$o$;$K;HMQ5l$^$9!#9JoA!"**left** OK^Nc,<position> $N1&$KCV$+$l$F:89g$o$;$G=PNO5l$^$9!#B>$N>l9g$bF1MM$G$9!#

K^Nc$N%5%s%W%k (key samples)

%G%U%)%k%HGO!"%0%i%U>e$N3FIA2h$OK^Nc(key) FbK=l>lKBP1~9k%(%s%H%j$r@8@.$7$^$9!#3N%(%s%H%jKO!"IA2h%?%$%H%k$H!"$=$NIA2h$G;H$olkNHF1$8?'!"F'1$8EIjDV7B0@-Kh$k@~/E@/H"$N%5%s%W%k$,F~$j$^$9!#font $H textcolor B0@-$O!"K^NcFb$K8=$olk8D!9$NIA2h%?%$%H%k$N8+$?L\$r@)8f7^$9!#textcolor $r "variable" $K%;%C%H$9kH!"K^Nc$N3F%(%s%H%j$NU8;zNs$O!"IA2h%0%i%U$N@~dEIjDV$7?'$HF1$8?'$KJj$^$9!#3l$O!"0JA0$N$"$k~4|$N gnuplot $N%G%U%)%k%H$N5sF0G7$?!#

%0%i%U6J@~$N%5%s%W%k$N@~J,$ND9$5$O **samplen** $G;XDj$G$-$^$9!#$=$ND9$5$OL\@9$j$ND9$5$H!"<sample_length>*(J8;zI}) NOBH7F7W;;5l$^$9!#**sapmlen** $O!"%0%i%U>e$NE@$N%5%s%W%k$N0LCVKb($b

$7%5%s%W%k@~J,<+?H$,=q$+$lJ/Fb) 1F6A$rM?$ ($F$$^$9!#$=lO!"E@$N5-9f$O%5%s%W%k@~J,$NCfl{$K=q$+$lk?aG$9!#

9T4V$N?bD>%9%Z!<%9$O!"**spacing** $G;XDj$G$-$^$9!#$=$NI}$O!"E@$N%5%$%:(pointsize) $H?bD>$JL\@9jN%5%$%:$H<vertical_spacing> $N@Q$KJj$^$9!#3N?bD>%9%Z!<%9$O!"U8;zN9b$5hj$b>.$5$/$OJi$J$$$3H,J]>Z5l$F$$^$9!#

<width_increment> $O!"U8;zNs$ND9$5$K2C$($?$j8:$i7?j9$kI}(2?J8;zJ,$+) $rI=$9?tCM$G$9!#3l$O!"K^Nc$K3OOH$r=q$-!"U8;zNs$K@)8fJ8;z$r;H$&>19g$K$@$1M-MQG7g&!#**gnuplot** $O3OOH$NI}$r7W;$9kH$-$O!"%i%Y%kJ8;zNs$NJ8;z?t$rC1=c$K?t$(k@1JNG!"$=$l$r=$@5$9$kNK;H$($^$9!#

%i%Y%k (label)

set label %3%^%s%I$r;H$&3HKhCFG$0U$N8+=P$7(label) $r%0%i%UCf$KI=<(9k3H$,$G$-$^$9!#

=q<0:

```
set label {<tag>} {"<label text>"} {at <position>}
          {left | center | right}
          {norotate | rotate {by <degrees>}}
          {font "<name>{,<size>}"}
          {noenhanced}
          {front | back}
          {textcolor <colorspec>}
          {point <pointstyle> | nopoint}
          {offset <offset>}
          {boxed}
          {hypertext}
unset label {<tag>}
show label
```

0ICV(<position>) $Ox,y $+x,y,z NIAi$+$G;XDj$7!"**:**BI87O$rA*Br9kKO$=$N**:**BI8$NA0$K**first**, **second**, **graph**, **screen**, **character** rD1^$9!#>\:Y$O!"0J2<;2>H: **coordinates (p. 24)**!#

%?%0(<tag>) $O8+=P$7$r<lJI$9k?aN@0?tCM$G$9!#%?%0$r;XDj$7J+C?>19gL$;HMQ$NbN$G:G$b>.$5$$CM$,<+F0E*$K3djEvFil$^$9!#8=:_$N8+=P$7$rJQ9$9kH$-$O$=$N%?%0$HJQ9$7$?$9'L\$r;XDj7F**set label** %3%^%s%I$r;H$$^$9!#

<label text> $OJ8;zNsDj?t$G$b9=$$^$;$s$7!"J8;zNsJQ?t!"$^$?$OJ8;zNsNCMr;}$D<0$G$b9=$$^$;$s!#0J2<;2>H: **strings (p. 42)**, **sprintf (p. 29)**, **gprintf (p. 124)**!#

%G%U%)%k%HGO!";XDj7?E@x,y,z $K8+=P$7$NJ8>O$N:8C<$,Mh$kh&$KG[CV$5l^$9!#x,y,z $r8+=P$7NI3KB7$($k$+$rJQ9$9$kKOJQ?t<justification> $r;XDj$7$^$9!#3lKO!"**left**, **right**, **center** $N$$:l+$,;XDj$G$-!"$=l>$lJ8>O$N:8!"1&!"?:Cf$,;XDj$7$?E@$KMhkh$&$KG[CV5kh&KJj^$9!#IA2hHO0O$N30KO$_=P$kh&$J;XDj$b5v5l$^$9$,!":BI8<4$N8+=P7dB>$NJ8;zNs$H=EJk>19g$,$"j^$9!#

H"Fb$KF~$l$k%i%Y%k$r%5%]!<%H9k=PNO7A<0b"j^$9!#0J2<;2>H:**set style textbox (p. 167)**!#Cm0U:#NH3m!"H"Fb$N%i%Y%k$O!"2sE>7JJ;Ns$K@)8B$5lF$$^$9!#

rotate $r;XDj$9kH%i%Y%k$O=D=q$-KJj^$9($bAm$s=PNO%I%i%$%P$,BP1~$7$F$$l$P!"$G9,)!#**rotate by <degrees>** $,M?$(il$?>19g$O!"$=$l$KE,9g$7$F$$k=PNO%I%i%$%P$O;XDj5l$?3QEY$GJ8;zNs$r=q$3$&$H7^9,$=$&GJ$$$=PNO7A<0GO!"?bD>$JJ8;zNs$H7F07ol$^$9!#

%U%)%s%HH=$N%5%$%:$O!"=PNO7A<0$,%U%)%s%H$N@_Dj$r%5%]!<%H7F$$$l$P**font** "<**name**>**{**,<**size**>**}**" $GL@<(E*$KA*BrG-$^$9!#$=$&GJ$$$=PNO7A<0GO!"%G%U%)%k%H$N%U%),;H$ol^$9!#

DI>o$O!"8=:_$N=PNO7A<0$,%5%]!<%H$7$F$$l$P!"%i%Y%kJ8;zNs$NA4FNJ8;zNs$K3HD%J8;zNs=hM}%b!<%I(enhanced text mode) $,;HMQ$5l^$9!#**noenhanced** $r;HMQ$9k3HG!"F'CDj$N%i%Y%k$r3HD%J8;zNs=hM}$+$i30$9$3H,G-$^$9!#3l$O!"%i%Y%k$,Nc$($P%"%s%@!<%(_) $r4^s$G$$k>19gJI$KM-MQ$G$9!#0J2<;2>H: **enhanced text (p. 25)**!#

front $,M?$(ilkH!"8+=P7O%G!<%?$N%0%i%U$N>e$K=q$+l^$9!#**back** $,M?$(ilkH(%G%U%)%k%H)!"8+=P7O%0%i%U$N2<$K=q$+$l$^$9!#**front** $r;H$&3H$G!"L)$J%G!<%?hC$F8+=P$7$,1#$5lF7^$&$3HrHrlk3H$,=PMh$^$9!#

textcolor <**colorspec**> $O8+=P$7J8;zNs$N?'$rJQ99$7$^$9!#<colorspec> $O@~<o!"rgb ?'!"$^$?$O%Q%l%C%H XN3dEv$N$$:l+$,;XDj$G$-$^$9!#0J2<;2>H: **colorspec (p. 37)**, **palette (p. 152)**!#**textcolor** $O!"**tc** $H >JN,2DG=$G$9!#

‘tc default‘ $O!"J8;z?'$r%G%U%)%k%HK7$^$9!#

‘tc lt <n>‘ $O!"J8;z?'$r@~<o <n> (line type) $HF1$8bNK7$^$9!#

‘tc ls <n>‘ $O!"J8;z?'$r line style <n> $HF1$8bNK7$^$9!#

‘tc palette z‘ $O!"8+=P$7$N z $N0LCV$KBP1~7?%Q%l%C%H?'KJj^$9!#

‘tc palette cb <val>‘ $O!"?'8+K\ (colorbar) $N <val> $N?'$KJj$^$9!#

‘tc palette fraction <val>‘ (0<=val<=1) $O!"[0:1] $+$i ‘palette‘ $N 3%?'3,D4/%+%i!<$X$N<IA|$KBP1~7??'KJj^$9!#

‘tc rgb "#RRGGBB"‘, ‘tc rgb "0xRRGGBB"‘ $O!"G$0U$N 24-bit RGB ?'$r @_Dj7^$9!#

‘tc rgb 0xRRGGBB‘ $bF1$8$G$9 (16 ?JDj?tCMKO0zMQId$OITMW)!#

<pointstyle> $,%-!<%o!<%I **lt**, **pt**, **ps** HHbKM?$($ilk$H(0J2<;2>H: **style (p. 100)**)!"M?$($il?%9%?%$%k$H!"M?$($il?@~<o$N?'$G8+=P$70LCV$KE@(point) $,IA2h$5$l!"8+=P$7J8;zNs$O>/$70\F0$5$l$^$9!#3N%*%W%7%g%s$O **mouse** 3HD%$5$1$?=PNO7A<0GN%i%Y%k$NG[CV$K!"%G%U%)%k%H$G;HMQ$5lF$$^$9!#8+=P$7J8;zNs6a$/$NE@$NIA2h5!G=$r off (3l$,%G%U%)%k%H) K9kK$O!"**nopoint** $r;HMQ$7F/$@$5$$!#

$=$N0\F0$O!"%G%U%)%k%H$G$O!"<pointstyle> $,M?$(illP **pointsize** $NC10L$G1,1 $G!"<pointstyle> $,M?$(il$F$$J1l$P0,0 $G$9!#0\F0$O!"DI2C$N **offset** <**offset**> $Gb@)8f$G$-$^$9!#$3$3$G!"<offset> $Ox,y $+$^?$Ox,y,z $N7A<0$G9,!"$=$l$K:BI87O$rA*Br7F!"$=$NA0$K **first**, **second**, **graph**, **screen**, **character** $N$$:l+rD1k3HbG$-$^$9!#>\:Y$O!"0J2<;2>H: **coordinates (p. 24)**!#

b70l$D($"$k$$O$=$l0J>e$N)<4$,;~4V<4G"$k>19g!":BI8$O **timefmt** $N=q<0$K7?$,$C$F0zMQId$G0O$^$l$?J8;zNs$GM?$($kI,MW$,$"j^$9!#0J2<;2>H: **set xdata (p. 174)**, **set timefmt (p. 170)**!#

set label $K4X$7$FM-8z$J*%W%7%g%s$O!"IA2h%9%?%$%k **labels** GbM-8z$G$9!#0J2<;2>H: **labels (p. 59)**!#3N>19g!"**textcolor**, **rotate**, **pointsize** $NB0@-$N8emK%-!<%o!<%I **variable** rD1F!"$=$lir8GDjCMGJ$$$h$&$K9k3H$,2DG=$G$9!#$=$N>19g8D!9$N%i%Y%k$NBP1~$9$kB0@-CM$O!"**using** ;XDj$NDI2CNs$Khj7hDj7^$9!#

Examples

Nc:

(1,2) $N0LCV$K"y=x" $H=q$/>19g:

```
set label "y=x" at 1,2
```

Symbol %U%)%s%H$N%5%$%:24 $N"%7%0%^"(&2) $r%0%i%U$N?Cf$K=q$/>19g:

```
set label "S" at graph 0.5,0.5 center font "Symbol,24"
```

8+=P$7"y=x^2" $N1&C<$,(2,3,4) KMhkh&$K$7!"%?%0HV9fH7$F3 $r;H$&>19g:

```
set label 3 "y=x^2" at 2,3,4 right
```

$=$N8+=P7rCf1{B7$($K9k>19g:

```
set label 3 center
```

%?%0HV9f2 $N8+=P$7$r:o=|$9$k>19g:

```
unset label 2
```

A4FN8+=P7r:o=|9k>19g:

```
unset label
```

A4FN8+=P7r%?%0HV9f=g$KI=<($9$k>19g:

```
show label
```

x<4$,;~4V<4$G$"$k%0%i%U$K8+=P$7$r@_Dj$9$kNc:

```
set timefmt "%d/%m/%y,%H:%M"
set label "Harvest" at "25/8/93",1
```

%G!<%?$H!"?7$?KEvFOail$?%Q%i%a!<%?$KhkEvFO$a4X?t$rIA2h7?$$>l9g!"**fit** $N8e$G$+$D **plot** $NA0$K0J2<$r<B9T$7$^$9:

```
set label sprintf("a = %3.5g",par_a) at 30,15
bfit = gprintf("b = %s*10^%S",par_b)
set label bfit at 30,20
```

EvFOailk%Q%i%a!<%?ND$$$?4X?t$ND j5A<0$rI=<(7?$$>l9g:

```
f(x)=a+b*x
fit f(x) 'datafile' via a,b
set label GPFUN_f at graph .05,.95
set label sprintf("a = %g", a) at graph .05,.90
set label sprintf("b = %g", b) at graph .05,.85
```

8+=P$7J8;zNs$r>.$5$$E@$+$i>/7@$10\F0$9$k>l9g:

```
set label 'origin' at 0,0 point lt 1 pt 2 ps 3 offset 1,-1
```

pm3d $r;H$C$?3<!85$N%+%i!<6JLI>eN"$kE@$N0LCV$K!"$=$Nz $NCM($3$N>l9g5.5) $KBP1~$7$??'$r8+=P$7J8;zNs$KD1$k>l9g:

```
set label 'text' at 0,0,5.5 tc palette z
```

%O%$%Q!<%F%-%9%H **(hypertext)**

=PNO7A<0NCfK$O(wxt, qt, svg, canvas, win) %0%i%U>e$NFCDj$N0LCV$d%-%c%s%P%9Fb$N$=$NB>$NItJ,$K%O%$%Q!<%F%-%9%H$rE=jIU1k3H,G-kbN,$"$j$^$9!#%^%&%9r$=$N>l=j$K;}$C$F$$$/$H!"U8;zNs$r4^$`H"$,%]%C%W%"%C%W5l^9,!"%O%$%Q!<%F%-%9%H$r%5%]!<%H7J$$=PNO7A<0GO!"$=$l$O2?$bI=<(7^$;$s!#%O%$%Q!<%F%-%9%H$rE=jIU1kK$O!"$=$N%i%Y%k$N **point** B0@-$rM-8z$K9kI,MW$,$"j^$9!#Nc:

```
set label at 0,0 "Plot origin" hypertext point pt 1
plot 'data' using 1:2:0 with labels hypertext point pt 7 \
     title 'mouse over point to see its order in data set'
```

@<o **(linetype)**

%3%^%s%I **set linetype** $O3F<oIA2h$K;HMQ5l$k4pK\E*$J@<o(linetype) $r:FDj5A$9k3Hr2DG=K7$^$9!#3N%3%^%s%I$N%*%W%7%g%s$O!"**"set style line"** NbNHA4$/F1$8$G$9!#%i%$%s%9%?%$%k$H0c$&H3mO!"**set linetype** Kh$k:FDj5A$O1JB3E*J3HG!"3l$O **reset** $NlF6A$r<ul^$;$s!#

Nc$($P!"@<o$N1 $H2 $O%G%U%)%k%H$G$O@V$HNP$G$9!#$=$l$r0J2<$Nh&$K:FDj5A$7$^$9:

```
set linetype 1 lw 2 lc rgb "blue" pointtype 6
set linetype 2 lw 2 lc rgb "forest-green" pointtype 8
```

9k$H lt 1 $r;HMQ$7$F$$$k9YFNbN$,!"**:Y$$@V@~(lt 1 $N0JA0$N%G%U%)%k%H) $+B@$$@D@~KJj^$9!#$3$N@-<A$O!"**lt 1** $K4p$E$$$F:nil$?0l;~E*$J%i%$%s%9%?%$%k$ND j5A$Nh&JbNb4^sG$$$^$9!#

Cm0U: 3N%3%^%s%I$O gnuplot %P!<%8%g%s 4.6 $G?7$?$KF3F~$5l?bN$G!"0JA0$N$"$$$^$$J%3%^%s%I "set style increment user" KCV-49okbN$G$9!#8E$$%3%^%s%I$O8=:_$OHs?d>)$G$9!#

3N;EAH$_$O!"gnuplot $G;HMQ$9$k@<cNs$KBP9k8D?ME*$J9%$_$r@_Dj$9kNKb;H$($^$9!#$=lr9T$&$K$O!"<B9T;~=i4|2=%U%!%$%k~/.gnuplot $K!"Nc$($P0J2<$Nh&J=lMQN%3%^%s%INs$rDI2C$9k3Hr*4+a7$^$9:

```
set linetype 1 lc rgb "dark-violet" lw 2 pt 1
set linetype 2 lc rgb "sea-green"   lw 2 pt 7
set linetype 3 lc rgb "cyan"        lw 2 pt 6 pi -1
set linetype 4 lc rgb "dark-red"    lw 2 pt 5 pi -1
set linetype 5 lc rgb "blue"        lw 2 pt 8
set linetype 6 lc rgb "dark-orange" lw 2 pt 3
set linetype 7 lc rgb "black"       lw 2 pt 11
set linetype 8 lc rgb "goldenrod"   lw 2
set linetype cycle 8
```

3&9k$H! "$"J?$, gnuplot $r<B9T$9kEYK@~<oO3liNCMK=i4|2=5l$^$9! #@~<oO"J?$,9%$`?t$@$1=i4|2=G-$^$9! #:FDj5A7J$>l9g$O! "$=$l$O%G%U%)%k%H$NB0@-$r;}$AB3$1$^$9! #Nc$ ($P@~<o3 $r:FDj5A$+$i30$;$P! "$=lO@D$Gpt 3, lw 1 HJj^$9! #J*! "%5%s%W%k%9%/%j%W%H$N:G=i$N2,3 $N9T$O! "8E$%P! <%8%g%s$Ngnuplot GO%9%-%C%W5;k?aNU]81$G$9! #

F1MM$N%9%/%j%W%H%U%!%$%k$G! "%F! <%^%Y! <%9$N?'A*Br$NDj5A$r9TC?$j! "FCDj$NIA2h%?%$%W! "$"$k$$$OFCDj$N=PNO7A<0MQ$K?'$r%+%9%?%^%$:7?j9k3Hb2DG=$G$9! #

%3%^%s%I **set linetype cycle 8** $O! "Bg$-$JHV9f$N@~<oKBP7FO?'$d@~I}$K4X9k3liNDj5A$r:EMxMQ$9k3Hr gnuplot KEA($^$9! #9JoA! "@~<o (linetype) 9-16, 17-24 EyKBP7FO! "3l$HF1$8?'! "I}NNsr;HMQ7^$9! #$?$@$7! "E@$NB0@-(pointtype, pointsize, pointinterval) $O! "$3$N%3%^%s%I$NlF6A$O<u$l$^$;$s! # **unset linetype cycle** O3$N5!G=$rL58zK7$^$9! #Bg$-$J@~<oHV9f$N@~$NB0@-$rL@<(E*$KDj5A7?>l9g$O! "$=lO>.$5$$HV9f$N@~<o$NB0@-$N:EMxMQ$hjbM%@h5l$^$9! #

Bh2 <4HNBP1~ (link)

=q<O:

```
set link {x2 | y2} {via <expression1> inverse <expression2>}
unset link
```

%3%^%s%I **set link** $O! "x <4$Hx2 <4! "$^$?$Oy <4$Hy2 <4$N4V$NBP1~$r@_Dj$7$^$9! #<expression1> $O! "Bh1 <4$N:BI8$rBh2 <4$K<IA|9k?t<0G9$,! "<expression2> $OBh2 <4$N:BI8$rBh1 <4$K<IA|9k?t<0$G$9! #

Nc:

```
set link x
```

3l$O! "$3$N%3%^%s%I$N:G$bC1=c$J7A<0$G! "x2 <4$rHCOO (range) $b?-=L (scale) $bJ}8~$bx <4$HA4$/F1$8$K7^$9! #**set xrange** $d**set auto x** JI$N%3%^%s%I$O! "3N>l9gx <4Kbx2 <4Kb:rMQ7^$9! #**set x2range** JI$N%3%^%s%I$O! "3N%j%s%/$,M-8z$J4V$OL5;k$5l^$9! #

```
set link x2 via x**2 inverse sqrt(x)
plot "sqrt_data" using 1:2 axes x2y1, "linear_data" using 1:2 axes x1y1
```

3N%3%^%s%I$O! "x <4$Hx2 <4$N! "=gJ}8~$H5UJ}8~$NBP1~$r@_Dj7F$$$^$9! #=gJ}8~$NBP1~$O! "x2 <4$N9o$_%i%Y%k$H! "%^%&%9$Nx2 :BI8$r@8@.9kNK;H$$! "5UJ}8~$NBP1~$O! "x2 <47O$G;XDj$5l?:BI8$rIA2h$9kN$K;H$$^$9! #$3$NBP1~$O! "HsIi$Nx :BI8$KN_M-8zG"k3HKCm0U7F$/$@$5$$! #y2 <4$KBP1~$5$;$?>l9g! "<expression1> $H<expression2> KO2>JQ?tH7$F y $r;H$&I,MW$,$"j^$9! #

Lmargin

%3%^%s%I **set lmargin** $O:8$NM>Gr$N%5%$:$r%;%C%H$7$^$9! #>\:Y$O! "0J2<;2>H: **set margin (p. 138)**! #

FI$_9~$_8!:w%Q%9 (loadpath)

loadpath $N@_Dj$O! "**call**, **load**, **plot**, **splot** %3%^%s%I$N%G! <%?%U%!%$%k! "%3%^%s%I%U%!%$%k$N8!:w%Q%9$rDI2CDj5A$7$^$9! #%U%!%$%k,8=:_$N%G%#%l%/%H%j$K8+$D$+$iJ+C?>l9g! "**loadpath** $N%G%#%l%/%H%j,8!:w$5l^$9! #

=q<O:

```
set loadpath {"pathlist1" {"pathlist2"...}}
show loadpath
```

%Q%9L>$OC10l$N%G%#%l%/%H%jL>! "$^$?$OJ#?t$N%Q%9L>$N%j%9%H$H7FF~NO7^$9! #J#?t$N%Q%9$+$iJk%Q%9%j%9%H$O OS 8GM-$N%Q%96h@Z$j! "Nc$ ($P Unix GO%3%m%s (':'), MS-DOS, Windows, OS/2 GO%;%_%3%m%s (';') Ey$G6h@Z$j$^$9! #**show loadpath**, **save**, **save set** %3%^%s%I$O! "OS 8GM-$N%Q%96h@Zjr%9%Z! <%9 (' ') GCV-49$($^$9! #

4D6-JQ?t GNUPLOT_LIB $,@_Dj$5lF$$$k>l9g! "$=$NF|MF$O **loadpath** $KDI2C$5l^9,! "**show loadpath** $O! "**set loadpath** $HGNUPLOT_LIB NCMrJL! 9$KI=<(7^$9$7! "**save**, **save set** %3%^%s%I$O! "GNUPLOT_LIB NCMNJ}$OL5;k7^$9! #

%m%1!<%k (locale)

locale $N@_Dj$O **{x,y,z}{d,m}tics** $,=q$/F|IU$N8@81$r7hDj7^$9!#

=q<O:

```
set locale {"<locale>"}
```

<locale> KO%$%s%9%H!<%k$5$1$?%7%9%F%`$G;H$&$3$H$N=PMh$kG$0U$N8@81$r;XDj$G$-$^$9!#2DG=$J%*%W%7%g%s$K$D$$F$O%7%9%F%`$N%I%-%e%a%s%H$r;2>H7F$/$@$5$$!#%3%^%s%I **set locale** "" $O!"4D6-JQ?t LC_TIME, LC_ALL, $^$?$O LANG $+$i%m%+!<%kNCMr7hDj7h$&$H7^$9!#

>.?tE@$K4X$9$k locale $rJQ9$7$?$>$19g$O!"0J2<;2>H: **set decimalsign (p. 119)**!#J8;z%(%s%3!<%I$r8=:_$N%m%+!<%kNbNKJQ9$7$?$>$19g$O!"0J2<;2>H:**set encoding (p. 121)**!#

BP?t<4 (logscale)

=q<O:

```
set logscale <axes> {<base>}
unset logscale <axes>
show logscale
```

$3$3$G!"<axes> (<4) $O!"**x**, **x2**, **y**, **y2**, **z**, **cb**, **r** NG0U$N=g=x$NAH$_9g$;$,2DG=$G$9!#<base> $O!"BP?tL\@9$j$ND1$G$9(%G%U%)%k%H$ND1$O10)!#<4$r;XDj7J$+$C$?>19g$O!"**r** 0J30N9YF$N<4$,BP>]HJj^$9!#%3%^%s%I **unset logscale** $O!"$9YF$N<4$NBP?tL\@9jr2r=|7^$9!#BP?t<4$KBP7FD1i1$kL\@9$j$N9o$_$O!"Ey4V3V$GOJ$$$3HKCm0U7F$/$@$5$$!#0J2<;2>H: **set xtics (p. 177)**!#

Nc:

x, z N><4KD$$$FBP?tL\@9jr@_Dj9k:

```
set logscale xz
```

y <4KD$$$FD12 H9$kBP?tL\@9$j$r@_Dj$9$k:

```
set logscale y 2
```

pm3d plot MQ$Kz $H?'$N<4$KBP?tL\@9$j$r@_Dj$9$k:

```
set logscale zcb
```

z <4$NBP?tL\@9$j$r2r=|$9$k:

```
unset logscale z
```

%^%/%m (macros)

8=:_$N%P!<%8%g%s$N gnuplot GO!"%^%/%mCV49$O>o$KM-8z$G$9!#%3%^%s%I%i%$%sFb$N@<stringvariablename>$N7A<0$NItJ,J8;zNs$O!"J8;zNsJQ?t <stringvariablename> $K4^$^$1k%F%-%9%HJ8;zNs$KCV-49(i1$^$9!#0J2<;2>H: **substitution (p. 43)**!#

3 <!85:BI870 (mapping)

%G!<%?$, **splot** $K5eLL:BI8$d1_C1:BI8$GM?$(i1$?>19g!"**set mapping** %3%^%s%I$O **gnuplot** K=1rINh&$K07$&$+$r;XDj9kNK;Ho1$^$9!#

=q<O:

```
set mapping {cartesian | spherical | cylindrical}
```

%G%U%)%k%HGO%+!<%F%7%"%s:BI8(DI>o$N x,y,z :BI8) $,;H$o1^$9!#

5eLL:BI8GO!"%G!<%?$O2 D+3 DNNs($^$?$O=$N8D?t$N **using** %(%s%H%j) H7$FM?$(i1$^$9!#:G=i$N2 DO!"**set angles** $G@_Dj$5$1$?C10LGNU}0L3Q(theta) $H6D3Q(phi) ($9Jo$A"7PEY" $H"0^EY") H_J5$1$^$9!#H>7Br $O!"$b$73 NsL\$N%G!<%?$,$"1P$=$1$,;H$o$1!"$b7J$1$1$P1 $K@_Dj$5$1$^$9!#3FJQ?t$N x,y,z HNBP1~$O0J2<$NDLjG$9:

```
x = r * cos(theta) * cos(phi)
y = r * sin(theta) * cos(phi)
z = r * sin(phi)
```

$3$1$O!"" 6K:BI87O" $H$$&hj!"$ '7m"CO3X>e$N:BI87O" (0^EY!"7PEY) $KAjEv$9k3HKCm0U7F$/$@$5$$(9JoA!"phi $Oz <4$HJ93Q!"$H$$&hj@VF;$+$i7WC?6D3Q!"KJj^$9)!#

1_C1:BI8GO!"%G!<%?OdOj2 D+3 DNNs$GM?$(i1!":G=i$N2 DOtheta (**set angle** $G;XDj$5$1$?C10L$N) $Hz $H8+$J$5$1$^$9!#H>7Br $O5eLL:BI8$N>19g$HF1MM!"3 NsL\$N%G!<%?$,$"1P$=$1$,!"$J$1$1$P1 $H@_Dj$5$1$^$9!#3FJQ?t$Nx,y,z HNBP1~$O0J2<$NDLjG$9:

```
x = r * cos(theta)
y = r * sin(theta)
z = z
```

mapping $N8z2L$O!"**splot** %3%^%s%I>e$N **using** Kh$k%U%#%k%?$G<B8=9k3H$b2DG=$G9,!"B?$/$N%G!<%?%U%!%$%k$,=hM}$5$1$k>19g$O **mapping** $NJ}$,JXMxG7g&!#7+$7!"**mapping** $r;H$C$F$$$F$b!"$b$7%U%!%$%k$N%G!<%?$N=gHV$,E,@Z$GJ+C?$i7k6I **using** $,I,MW$KJCF7$^$$$^$9!#

mapping $O **plot** GO2?b7$^$;$s!#

```
world.dem:  mapping $N%G%b!#
```

<~0O$NM>Gr (margin)

margin (<~0O$NM>Gr) HO!"IA2hNN0h$N6-3&$+$i%-%c%s%P%9$N0lHV30B&$^GN4V3V$N3H$G$9!#3NM>GrNBg-5O<+F0E*KHi1$^$9$,!"%3%^%s%I **set margin** $GJQ99$9k3HbG-$^$9!#**show margin** $O8=:_$N@_Dj$rI=<($7$^$9!#IA2hNN0h$N6-3&$+$iFbB&$NIA2hMWAG$^$G$N4V3V$rJQ99$7$?$>19g$O0J2<;2>H: **set offsets (p. 147)**!#

=q<O:

```
set lmargin {{at screen} <margin>}
set rmargin {{at screen} <margin>}
set tmargin {{at screen} <margin>}
set bmargin {{at screen} <margin>}
set margins <left>, <right>, <bottom>, <top>
show margin
```

<margin> $N%G%U%)%k%H$NC10LKO!"E,@Z$H;W$olk!"U8;z$N9b$5$HI}$,;Hol$^$9!#@5NCMOM>Gr$N@dBPE*$JBg$-$5$rDj5A$7!"Ii$NCM($^$?$OL5;XDj) $O **gnuplot** KhCF<+F07W;;5lkCMr;H$&$3HKJj$^$9!#3<!85IA2hGO:8$NM>Gr(lmargin) N_$,J8;zNBg-5rC10L$H7F@_DjG-$^$9!#

%-!<%o!<%I **at screen** $O!"$=$NM>Gr$N;XDj$,A4BN$NIA2hNN0hKBP9$k3d9g$G$"$k3H$r0UL#$7$^$9!#3l$O!"B?=EIA2h(multiplot) %b!<%IGN2D, 3D %0%i%U$N3Q$r@53N$KB7$(kN$K;H$($^$9!#3NG[CV$O8=:_$N **set origin** dd **set size** NCMrL5;k9kh&KJCF$$$F!"$=$l$OB?=EIA2hFb$N%0%i%U$NG[CV$NUL$NUJ}K!$H7F;Holk3Hr0U?^7F$$$^$9!#

IA2h$NM>Gr$ODL>oL\@9$j!"L\@9$j$N8+=P$7!"<4$N8+=P$7!"IA2h$N%?%$%H%k!"F|IU!"$=$7$F6-3&$N30K"$k>19g$NK^Nc(key) $N%5%$%:Ey$r85$K7W;;5l$^$9!#7+$7!"L\@9$j$N9o$_,6-3&GJ$/<4$NUJ}KD$$F$$k>19g(Nc$($P **set xtics axis** KhCF)!"L\@9jN9o$_<+?H$H$=$N8+=P7OM>Gr$N7W;;$K$O4^$^l^$;$s$7!"M>Gr$K=q$+$l$kB>$NU8;zNs$N0LCV$N7W;;Kb4^$^$l$^$;$s!#$3lO!"<4$H6-3&$,Hs>o$K6a$$>19g!"<4$N8+=P$7$,B>$NU8;zNs$r>e=q$-9k2DG=@-$r<(:6$7$^$9!#

Micro

%G%U%)%k%HGO!"<4$N9o$_%i%Y%k$N@8@.$K;HMQ9k2J3X7O=PNO$N?7$a$N=q<0;XDj;R"%c" $O!"V%^%$%/%m!W(10^-6) $r<($9@\F,<-H7$F>.J8;z$Nu $r;H$$$^$9!#%3%^%s%I **set micro** $O!"$=lH$O[$J$k0u;zMQJ8;z(unicode U+00B5) $r;HMQ$9kh$&(gnuplot $K;X<($7$^$9!#$=$NJ8;z$rI=8=$9kN$K;HMQ$5lk%P%$%HNs$O!"8=:_$Nencoding $K0MB8$7$^$9!#0J2<;2>H:**format specifiers (p. 124)**, **encoding (p. 121)**!#

3N%3%^%s%I$O;n83CJ3,$NbN$G!"@)8B$,$"$j$^$9$7!";EMM$N:Y+$$ItJ,$OJQ99$9$k2DG=@-$,$"$j$^$9!#

Minussign

Gnuplot uses the C language library routine sprintf() for most formatted input. However it also has its own formatting routine **gprintf()** that is used to generate axis tic labels. The C library routine always use a hyphen character (ascii \055) to indicate a negative number, as in -7. Many people prefer a different typographic minus sign character (unicode U+2212) for this purpose, as in −7. The command gnuplot $O $ [HsIN=q<0IU$-F~NO$O C 8@81$N%i%$%V%i%j%k!<%A%sG"$k sprintf() $G=hM}$7$^$9!#7+$7!"gnuplot $K $CFH<+$N=q<02=%k!<%A%s**gprintf()** b"$j!"$=lO<4$N9o$_J8;zNs$N@8@.$K;Hol$F$$$^$9!#C $N%i%$%V%i%j %k!<%A%s$O!"-7 Nh$&JIiN?t$NI=< (KO>o$K%O%$%U%sJ8;z(ASCII \055) $r;HMQ$7$^$9$,!"$ '7m$=$NL\E* GO!"$=$lHOO[Jk0u;zMQ$N%^%$%J%9Id9fJ8;z(Unicode U+2212) $r;H$$]7 Nh$&$KI=< (7?$$$HB?$/ $N?M!9$O;W$&$G7g$&(LuCm 86J8$G$O'7' $NA0$O Unicode $N!V%^%$%J%95−9f!W$,;H$olF$$k$,!"$3$3$G$O JIS $NA43Q%^%$%J%95−9f245D $rMQ$$?)!#%3%^%s%I

```
set minussign
```

$O!"gprintf() $N?t;z$N=PNO$K!"%O%$%U%sNBeojK%^%$%J%9Id9fJ8;z$r;HMQ9kh&;X<(7^$9!#UTF-8 %m %1!<%k$GO=lO Unicode U+2212 $KBP1~$9$k%^%k%A%P%$%HJ8;zNsKJ$j!"Window %3!<%I%Z!<%8 1252 %m %1!<%kGO!"3l$O 8 %S%C%HJ8;z$N ALT+150 ("en dash") KJj^$9!#%3%^%s%I**set minussign** $O!"<4$N 9o$_$N%i%Y%k$H!"gprintf $rL@<(E*$K8F$S=P$7$F@8@.$5l?J8;zNs$K1F6A$rM?$($^9,!"$=$NB>$N>l9g$N%O%$%U %s$r4^$'J8;zNs$K$O2?$i1F6A$rM?$($^$;$s!#0J2<;2>H: **gprintf (p. 124)**!#

LaTeX $O!"$=$l<+?H$,Ii$NId9f$r<+A0$G=hM}$9$k;EAH$_$r;}$C$F$$$k$?$a!"3N%3%^%s%I$O!"LaTeX 7O$N =PNO7A<0$r;HMQ$7$F$$$k>l9g$OL5;k$5lk3H$KCm0U$7F/$@$5$$!#postscript =PNO7A<0$r;HMQ$9$k>l9g$b!" gnuplot $Npostscript MQA0=hM}%k!<%A%s$,ascii $N%O%$%U%s%3!<%I\055 $r**minus** $H$$&L>A0$N0[$J$kJ8;z$K JQ49$9$kNG!"3N%3%^%s%IOI,MWO$"$j$^$;$s!#

3N%3%^%s%I$O;n83E*$JbN$G!"@)8B$,$"$j$^$9$7!":Y$+$$<BAu$OJQ99$9$k2D G=@-$,$"$j$^$9!#

Nc(utf8 %m%1!<%k$r2>Dj):

```
set minus
A = -5
print "A = ",A                  # %O%$%U%s$r4^$'J8;zNs$r=PNO
print gprintf("A = %g",A)       # U+2212 J8;z$r4^$'J8;zNs$r=PNO
set label "V = -5"              # %O%$%U%s$r4^$'%i%Y%k
set label sprintf("V = %g",-5) # %O%$%U%s$r4^$'%i%Y%k
set label gprintf("V = %g",-5) # U+2212 $r4^$'%i%Y%k
```

Gr9u%b!<%I (monochrome)

=q<0:

```
set monochrome {linetype N <linetype properties>}
```

%3%^%s%I **set monochrome** $O!"@~<o72$NJL$N@_DjK!$rA*Br7^9,!"$=$l$O?'$N0c$$$GOJ$/!"E@@~/GK @~%Q%?!<%s$d@~I}$N0c$$KhkbN$G$9!#3N%3%^%s%I$O!"gnuplot $N0JA0$N%P!<%8%g%sN"$k=PNO7A<0$G monochrome %*%W%7%g%sH7$FDs6!$7$F$$?bNKCV-49okbN$G!"8eJ}8_49@-$N$?a!"$=li$N=PNO7A<0 $G"mono" %*%W%7%g%s$r;XDj9k$H!"0EL[$G**set monochrome** $r8F$S=P7^$9!#Nc$($P!"

```
set terminal pdf mono
```

$O!"0J2<$HF1Ey$G$9!#

```
set terminal pdf
set mono
```

Gr9u%b!<%I(monochrome) $NA*Br$O!"L@<(E*$JRGB ?'!"%Q%l%C%H?'$r;HMQ7F$N%+%i!<$N@~$NIA2h$rK8$2$k bNGO$"$j$^$;s,!"0J2<$b;2>H:**set palette gray (p. 156)**!#G%U%)%k%HGO6 DNGr9u@~<o$,Dj5A$5$l $F$$$^9,!"$=$liNB0@-$rJQ99$7$?j!"Gr9u@~<o$rDI2C9k3H$O!"%U%k7A<0$G$=N%3%^%s%I$r;HMQ9k$3 HGG-$^$9!#Gr9u@~<oK[I3$5l?JQ99$O!"%+%i!<$N@~<oKO1F6A$rM?$($^$;s7!"$=$N5U$bF1MM$G$9!# %+%i!<@~<o$KI|5"$9kK$O!"**unset monochrome** $+!"**set color** H7F/$@$5$$!#

%^%&%9 (mouse)

%3%^%s%I **set mouse** $O!"8=:_$NBPOC7?=PNO7A<0KBP7$F%^%&%95!G=$rM-8zK7$^$9!#BPOC7?%b!<%IGCDL>o %G%U%)%k%HG3lCM-8zKJCF$$$^9,!"%3%^%s%I$,%U%!%$%k$+$iFI$_9~$^lk>l9g$O%G%U%)%k%H$G$CL58z KJCF$$$^$9!#

%^%&%9%b!<%I$O2<oN'MQOU$5lF$$$^$9!#2<!85%b!<%I$O!"**plot** %3%^%s%I$H**splot** $N2<!85<M1F($9Jo$A!" z $N2sE>3Q$, 0, 90, 180, 270, 360 EY$N**set view**!"$*hS**set view map**) $GF0:n$7$^$9!#3N%b!<%IGO!" %^%&%90LCV$,DI@W$5$l!"%^%&%9%\%?%s$dLp0u%-!<$r;H$C$F3HBg$7$?$j;kE@0\F0$7$?jG$-$^$9!#%0%i%U$KBP1~ 9kK^Nc$N%?%$%H%kdJLJ%&%#%8%C%H%"%$%3%s$JIr%/%j%C%/9k3H$G!"8D!9$N%0%i%U$NIA2h$r%*%s/%*%U $K@Z$jBX$($k3H$r%5%]!<%H$9$k=PNO7A<0$bS"j^$9!#

splot Kh$k3<!85%0%i%U$KBP7F$O!"%0%i%U$N;kJ}8~(view) $H=L<\$NUQ99$,!"$=l>$l%^%&%9%\%?%s1 $H 2($Khk%I%i%C%0) $G9T$($^$9!#%\%?%s2 $N?hD>J}8~$N%I%i%C%0$r shift %-!<$HF1;~$K9T$&$H!"z<4$N0lHV2< $N0LCV(**xyplane**) $r>e2<$7$^$9!#3liN%\%?%sK5iK<ctrl> %-!<$r2!$9$H!":BI8<4$OI=<(5l$^$9$,!" %G!<%?$NI=<($O>C$($^$9!#3lOBg-$J%G!<%?$KBP7FM-MQG7g&!#

%^%&%9$OB?=EIA2h(multiplot) %b!<%If bGCL58zG9$,!"**unset multiplot** $GB?=EIA2h$,407k9l$P!"%^%&%9 5!G=$O ON KJj^$9!#$?$@$7!"$=$N:rMQ$Omultiplot Fb$N:G8e$NIA2h(replot $GIA2h$5lkh&Jb$N) $K BP$7FN$_$G$9!#

=q<0:

```
set mouse {doubleclick <ms>} {nodoubleclick}
          {{no}zoomcoordinates}
          {zoomfactors <xmultiplier>, <ymultiplier>}
          {noruler | ruler {at x,y}}
          {polardistance{deg|tan} | nopolardistance}
          {format <string>}
          {mouseformat <int>/<string>}
          {{no}labels {"labeloptions"}}
          {{no}zoomjump} {{no}verbose}
unset mouse
```

%*%W%7%g%s**noruler** $H**ruler** $O!"Dj5,(ruler) 5!G=$roff, on K7$^$9!#**ruler** KO:BI8$rM?$($F86E@$r@_Dj 9k3HbG$-$^$9!#**ruler** $,on $N4V!"ruler $N86E@$+$i%^%&%9$^GN%f!<%6C10LGN5wN%$,O"B3E*$KI=<($5 l^$9!#%G%U%)%k%HGO!"ruler $N%H%0%k%9%$%C%A$O'r' $K%-!<3d$jEvF5lF$$$^$9!#

%*%W%7%g%s**polardistance** $O!"%^%&%9%+!<%=%k$+$iDj5,(ruler) $^$G$N5wN%$r6K:BI8GbI=<((5wN%!"$*$h$S 3QEY$^$?$O79$-) 9k$+I&$+$r7hDj7^$9!#3l$O%G%U%)%k%H$N%-!<3djEvF'5' $KBP1~$7$^$9!#

%\%?%s2 $Ngnuplot $N1JB3E*$J%i%Y%k$rDj5A$9kK$O!"%*%W%7%g%s**labels** $r;HMQ$7$^$9!#%G%U%)%k%H$O**nolabels** $G!"%\%?%s2 $OC1$K01;~E*$J%i%Y%k$r%^%&%90LCV$KIA2h$7$^$9!#%i%Y%k$O8=:_$N**mouseformat** $N@_Dj$K=>$C $F=q$+l^$9!#**labeloptions** J8;zNs$O!"%3%^%s%I**set label** %3%^%s%IKEO5l^$9!#$=$N%G%U%)%k%H$O"point pointstyle 1" $G!"$3lO%i%Y%k0LCV$K>.$5$$%W%i9(+) $rIA2h$7$^$9!#01;~E*$J%i%Y%k$O!"$=$N<!$N**replot**!" $^$?$O%^%&%9:!<%'A':n$G$O8=$l$^$;$s!#1JB3E*$J%i%Y%k$O!"%i%Y%k$NE@$N>e$GCtrl %-!<$r2!$7$F%\%?%s2 $r%/%j%C%/$9k3HG>C$9$3H,G-$^$9!#<B:]$N%i%Y%k$N0LCVKI$l0L6a$/$G%/%j%C%/$7J1lP$$$1$J$$ $+$NogCM$b**pointsize** $G7hDj$5l^$9!#

%*%W%7%g%s**verbose** $,ON $N>l9g!"<B9T;~$NJs9p%3%^%s%I$,I=<($5l^$9!#$3$N%*%W%7%g%s$O%I%i%$%P%&%#%s %I%&>e$G**6** rBGD3H$GON/OFF $,%9%$%C%AG-$^$9!#%G%U%)%k%HGO**verbose** $OOFF KJCF$$$^$9!#

%I%i%$%P%&%#%s%I%&>e$G'h' rBGD$H!"%^%&%9%H%-!<3dEv$NC;$$@bL@$,I=<($5l^$9!#$3lO!"%f!<%6Dj5A$N %-!<3dEv!"$9Jo$A**bind** %3%^%s%I$Khk**hotkeys**(0J2<;2>H **bind (p. 40)**) $bI=<($5l^$9!#%f!<%6Dj5A $N**hotkeys** $O%G%U%)%k%H$N%-!<3dEv$rL58z$K7^$9!#0J2<$b;2>H **bind (p. 40)**, **label (p. 133)**!#

Doubleclick

%@%V%k%/%j%C%/$N2rA|EY$O%_%jIC(ms) C10L$GM?$($^$9!#3l$O!"%\%?%s1MQ$NbN$G!"8=:_$N%^%&%90LCV$r %/%j%C%W%\!<%I(**clipboard**) $K%3%T!<$9kN$K;H$&=PNO7A<0$,$"j^$9!#%G%U%)%k%H$NCM$O300 ms $G$9!#$3 lr0 ms $K@_Dj$9kH%7%s0%k%/%j%C%/G=$N%3%T!<$r9T$&$h$&$KJj$^$9!#

Mouseformat

%3%^%s%I **set mouse format** $O!"sprintf() KBP9$k=q<0J8;zNs$N;XDj$G!"%^%&%9%+!<%=%k$N [x,y] :BI8$rIA 2h%&%#%s%I%&$H%/%j%C%W%\!<%IKINh$&$KI=< (9k$+$r7hDj7^$9!#%G%U%)%k%H$O "% #g" $G$9!#

set mouse mouseformat $O!"%\%?%s1 $H%\%?%s2 $N:nMQ;~(:BI8$r%/%j%C%W%\!<%I$X%3%T!<$7!"%^%&%90L CV$K0l;~E*$KCm<arD1k) $NJ8;zNs$N=q<0MQ$K;H$ol^$9!#0z?t$,@0?t$N>19g!"0J2<$NI=K"$k=q<0%*%W%7%g %s$N0lDrA*Br7^$9!#0z?t$,J8;zNs$N>19g$O!"=q<0%*%W%7%g%s6 $Nsprintf() $N=q<0J8;zNs$H7F;Hol$^ 9N$G!"2 DN<B?t$N;XDj;R$r4^$'I,MW$,$"$j$^$9!#Nc:

```
    'set mouse mouseformat "mouse x,y = %5.2g, %10.3f"'.
```

3NJ8;zNsr^$?%*%U$K9kKO!"**set mouse mouseformat** "" H7$^$9!#

0J2<$N=q<0$,MxMQ2DG=$G$9:

```
0   %G%U%)%k%H (1 $HF1$8)
1   <4$N:BI8                              1.23, 2.45
2   %0%i%U:BI8 (0 $+$i 1 $^$G)           /0.00, 1.00/
3   x = timefmt     y = <4:BI8           [('set timefmt' $N@_Dj), 2.45]
4   x = F|IU        y = <4:BI8           [31. 12. 1999, 2.45]
5   x = ;~9o        y = <4:BI8           [23:59, 2.45]
6   x = F|IU/;~9o   y = <4:BI8           [31. 12. 1999 23:59, 2.45]
7   'set mouse mouseformat' $K$h$k=q<0!"Nc: "mouse x,y = 1.23,     2.450"
```

%^%&%9%9%/%m!<%k **(scrolling)**

2<!85%0%i%U$H3<!85%0%i%U$NN>J}$G!"X $HY<4$N?-=L$O%^%&%9%[%$!<%k$r;H$&3H$GD4@0$G$-$^$9!#<wheel-up> $O%9%/%m!<%k%"%C%W$7(YMIN $HYMAX $NN>J}$rY $NHOO$N10 %Q!<%;%s%H$:$DA}2C$5;!"Y2MIN $H Y2MAX KbF1MMN3Hr9T$$^$9)!"<wheel-down> $O%9%/%m!<%k%@%&s$7$^$9!#<shift-wheel-up> $O:8%9%/ %m!<%k$7(XMIN $HXMAX $NN>J}!"$=7FX2MIN $HX2MAX $NN>J}$r8:>/)!"<shift-wheel-down> $O1&%9 %/%m!<%k$7$^$9!#<control-wheel-up> $O%0%i%U$NCf?4J}8~$K%:!<%'%$%s$7!"<control-wheel-down> $O%:!<%'%"%&H$7$^$9!#<shift-control-wheel-up> $OX $HX2<4$N$_$K1hCF%:!<%'%$%s$7!"<shift-control-wheel-down> $OX $HX2<4$K1hCFN_%:!<%'%"%&H7^$9!#

X11 GN%^%&%9 (X11 mouse)

x11 $N=PNO7A<0$N%*%W%7%g%s **set term x11** <n> $r;H$C$FJ#?t$NX11 IA2h%&%#%s%I%&$,3+$$F$$k>19g!"%^ %&%9%3%^%s%I$H%[%C%H%-!<$N5!G=rAcs$H;H$(kN$O_$NIA2h%&%#%s%I%&$N_$G$9!#$7$+$7!"B>$N%&%#%s %I%&$b:82<$K%^%&%9$N:BI8$rI=<(0L$O7F$/$lkG7g$&!#

Zoom

3HBg(zoom) $O!"DL>o$O:8%^%&%9%\%?%s$r2!$9$3$H$G9T$o$l!"3HBgHOO$N@~0z$-$O%^%&%9$N%I%i%C%0$G9T$$$^ 9,!"3lHOO [Jk%^%&%9%\%?%s$rMW5a$9$k<B9T4D6-$b$"$k$+$b7l$^$;$s!#85$N%0%i%U$O!"%0%i%U%&%#%s %I%&>e$G%[%C%H%-!<'u'$r%?%$%W9k3H$GI|85$G$-$^$9!#%[%C%H%-!<'p'$H'n' $O!"3HBgA':n$NMzNr$r8eJ} $HA0J}$K$?$Ij^$9!#

%*%W%7%g%s **zoomcoordinates** $O!"3HBg$NOH$NC<$K$=$N:BI8$r=q$/$+$I$&$+$r7hDj$7!"%G%U%)%k %H$GOON KJCF$$^$9!#

%*%W%7%g%s **zoomjump** $,ON $N>19g!"%\%?%s3 Kh$k3HBgHOO$NA*Br$r3+;O$9kH!"%^%&%9%]%$%s%?$O<+ F0E*$K>/7@$1:l?OLCV$K0\F0$7$^$9!#3l$O!"4/.$5$$($^$?OG5($"$k)3HBgHOO$rA*Br$7$F$7^ $&$3HrHr1kNKJXMxG7g&!#%G%U%)%k%H$GO**zoomjump** $OOFF $G$9!#

B?=EIA2h%b!<%I **(multiplot)**

%3%^%s%I **set multiplot** $O**gnuplot** $rB?=EIA2h%b!<%I$K7$^$9!#3l$O!"J#?t$N%0%i%U$rF1$8%Z!<%8$dF1$8 %9%/%j!<%s%&%#%s%I%&KNYjF1;NKJBY$FI=<($7$^$9!#

=q<0:

```
set multiplot
    { title <page title> {font <fontspec>} {enhanced|noenhanced} }
    { layout <rows>,<cols>
      {rowsfirst|columnsfirst} {downwards|upwards}
      {scale <xscale>{,<yscale>}} {offset <xoff>{,<yoff>}}
      {margins <left>,<right>,<bottom>,<top>}
      {spacing <xspacing>{,<yspacing>}}
    }
set multiplot {next|previous}
unset multiplot
```

=PNO7A<0 (terminal) KhCF$O!"%3%^%s%I **unset multiplot** $,M?$(ilk^$G2?$NIA2h$bI=<($5lJ$$$3H,$"$j$^$9!#3N>l9g3N%3%^%s%IKh$j%Z!<%8A4BN$NIA2h$,9T$Jol!"gnuplot $OI8=\$NC10lIA2h%b!<%IKJj^$9!#$=$l0J30$N=PNO7A<0GO!"3F **plot** %3%^%s%I$,$=l>$lI=<($r99?7$7$^$9!#

%3%^%s%I **clear** $O!"<!$NIA2h$K;H$&D9J}7ANN0h$r>C$9NK;H$($^$9!#E57?E*$K$O!"Bg$-$$%0%i%U$NFbIt$K>.5J%0%i%U$rA^F~$9kh$&$J>l9gKI,MWG$9!#

Dj5A:Q$N8+=P$7$d%Y%/%H%k$O!"3FIA2hK*$$F!"Kh2s8=:_$N%5%$:$H86E@$K=>CF=q$+$l$^$9($=$li, **screen**:BI=7O$GDj5A$5lF$$J$>l9g)!#$=$l0J30$NA4FN **set** $GDj5A$5lkbN$b3FIA2h$9YFKE,MQ5l^$9!#$b$71EY$NIA2hK@$18=$olFM_$7$$bNr:nj?$$J$i!"$=l,Nc$($PF|IU(timestamp) $@$H7?$i!"**set multiplot** $H **unset multiplot** GO^l?%V%m%C/Fb$N **plot** ($^$?$O **splot**, **replot**) L?Na$N0l$D$r **set time** $H **unset time** GO5sG/$@$5$$!#

multiplot $N%?%$%H%k$O!"8D!9$NIA2h%?%$%H%k$,$"$C$?$H7F$b!"$=lHOJLNbN$G!"%Z!<%8$N>eItK=N?aN%-%c%s%P%9A4BN$NI}$Ko?$k%9Z!<%9$,3NJ]5l$^$9!#

layout $,;XDj$5lF$$J$>l9g!"$"$k$$$OhjNI$$0LCV9go;r7$?$$>l9g$O!"%3%^%s%I **set origin** $H **set size** 3FIA2h$G@5$7$$0LCV$K@_Dj$9kI,MW,$"$j$^$9!#>\:Y$O!"0J2<;2>H: **set origin (p. 147)**, **set size (p. 159)**!#

Nc:

```
set multiplot
set size 0.4,0.4
set origin 0.1,0.1
plot sin(x)
set size 0.2,0.2
set origin 0.5,0.5
plot cos(x)
unset multiplot
```

3l$O!"cos(x) $N%0%i%U$r!"sin(x) $N>e$K@Q$_=E$M$FI=<($7$^$9!#

set size $H **set origin** $OA4BN$NIA2hNN0h$r;2>H$7!"$=$l$O3FIA2h$GMxMQ5l$^$9!#0J2<$b;2>H: **set term size (p. 23)**!#IA2h6-3&$r0lNs$KB7$($?$$JiP!"**set margin** %3%^%s%I$G!"6-3&$N30$NM>Gr%5%$:$rF1$8%5%$:$KB7$($k3H$,=PMh$^$9!#$=$N;HMQ$K4X7F$O!"0J2<;2>H: **set margin (p. 138)**!#M>Gr%5%$:$OJ8;z%5%$:C10L$N@dBPE*$J?tCMC10L$r;HMQ9k3HKCm0U7F$/$@$5$$!#hCF;DC?%9Z!<%9KIA+lk%0%i%U$OI=<($9kG%P%$%9$NI=<(%5%$:$K0MB8$7$^$9!#Nc$($P!"%W%j%s%?%H%G%#%9%W%l%$$NI=<($OB?J,0c$C$?$bNKJkG7g&!#

%*%W%7%g%s **layout** Kh$j!"3FIA2h$NA0K=l>$lM?$($F$$?**set size** $d **set origin** %3%^%s%IJ7$K!"C1=c$JJ#?t%0%i%U$NIA2h$r:n@.G-$^$9!#$=$liN@_Dj$O<+F0E*$K9TJo$l!"$$$DGb$=$N@_Dj$rJQ99$G$-$^$9!#**layout** GOI=<($O<rows>9T$H<cols>Ns$N3J;R$KJ,3d5l!"3F3J;R$O!"$=$N8e$KB3$/BP1~9kL>A0$N%*%W%7%g%sKhCF9T(rowsfirst)!"$"$k$$$ONs(columnsfirst) $,@h$KKdailF9T$-$^$9!#IA2h%0%i%U$N@Q$_>e$2$O2<J}8~(**downwards**) $K!"$^$?$O>eJ}8~(**upwards**) $K?-$Skh$&$KG-$^$9!#%G%U%)%k%H$O **rowsfirst** $G **downwards** $G$9!#%3%^%s%I **set multiplot next** $H **set multiplot previous** $O!"%l%$%"%&%H%W%7%g%s$r;HMQ$7$F$$k>l9gN_$K4X78$7$^$9!#**next** $O!"3J;RFb$N<!$N0LCV$r%9%-%C%W$7!"6uGr$r;D7^$9!#**prev** $O!"D>A0$KIA2h7?0LCV$ND>A0$N3J;R0LCVKLaj$^$9!#

3FIA2h$O **scale** $G?-=L$r!"**offset** $G0LCV$NJ?9T0\F0$r9T$J$&$3H,G-$^$9!#scale $d offset $N y NCM,>JN,5l$?>l9g$O!"x NCM,$=lK;HMQ$5l^$9!#**unset multiplot** Kh$j<+F0G[CV5!G=$O%*%UKJ$j!"$=7F **set size** $H **set origin** NCMO **set multiplot layout** $NA0$N>uBV$KI|5"$5l^$9!#

Nc:

```
set size 1,1
set origin 0,0
set multiplot layout 3,2 columnsfirst scale 1.1,0.9
[ $3$3$K$O 6 $D$^$G$NIA2h%3%^%s%I ]
unset multiplot
```

>eNNcG$O6 DNIA2h$, 2 NsNCfK>e$+$i2<$X!": 8$+$il&XHKdailF9T$-$^$9!#3FIA2h$O?eJ?%5%$%:$, 1.1/2!"?bD>%5%$%:$, 0.9/3 HJj^$9!#

B>Kb!"$=$N%l%$%"%&%HFb$N9YFN%0%i%U$K0lMM$J%^!<%8%s$r%*%W%7%g%slayout margins $Hspacing $G@_Dj$9k3H,G-$^$9$,!"$3lO0l=o$K;H$&I,MW$,$"j^$9!#margins $O!"3J;RG[CV$NJ#?t%0%i%UA4BN$N30B&$KBP9k%^!<%8%s$r@_Dj$7$^$9!#

spacing $O!"NY@\$9$kItJ,%0%i%U4V$N7d4V$rM?$($^$9$,!"character $+screen C10L$G;XDj9k3HbG$-$^$9!#C10l$NCM$r;XDj$9kH!"$=$l$Ox, y $NN>J}$NJ}8~$K;HMQ$5l^9,!"2 DN0[JkCM$r;XDj$9k3HbG-$^$9!#

0lDNCM$KC10L$,J1lP!"D>A0$N%^!<%8%s@_Dj$NbN$r;HMQ$7$^$9!#

Nc:

```
set multiplot layout 2,2 margins 0.1, 0.9, 0.1, 0.9 spacing 0.0
```

3N>19g!": 8K"$k%0%i%U$N:8$N6-3&$O!"%9%/%j!<%s:BI8$N0.1 KCV+$l!"1&K"$k%0%i%U$N1&$N6-3&$O%9%/%j!<%s:BI80.9 $N>l=j$KCV$+$l$k!"Ey$HJj$^$9!#3F%0%i%U$N7d4V$O0 $K;XDj$7$F$$kNG!"FbB&$N6-3&@~$O=EJj$^$9!#

Nc:

```
set multiplot layout 2,2 margins char 5,1,1,2 spacing screen 0, char 2
```

3l$O!": 8$N%0%i%U$N6-3&$O!"%-%c%s%P%9$N:8C<$+$i5 J8;zI}$N>l=j$K!"1&$N%0%i%U$N1&$N6-3&$O!"%-%c%s%P%9$NC<$+$i1 J8;zI}$N>l=j$K$"$k%h&$J%l%$%"%&%H$r@8@.$7$^$9!#2<$N%^!<%8%s$O1 J8;zJ,$N9b$5!">e$N%^!<%8%s$O2 J8;zJ,$N9b$5KJj^$9!#%0%i%U4V$N?eJ?J}8~$N7d4V$O$"$j$^$;$s,!"=DJ}8~$K$O2 J8;zJ,$N9b5KEy$7$7d4V$,$"j^$9!#

Nc:

```
set multiplot layout 2,2 columnsfirst margins 0.1,0.9,0.1,0.9 spacing 0.1
set ylabel 'ylabel'
plot sin(x)
set xlabel 'xlabel'
plot cos(x)
unset ylabel
unset xlabel
plot sin(2*x)
set xlabel 'xlabel'
plot cos(2*x)
unset multiplot
```

0J2<$b;2>H

multiplot $N%G%b (multiplt.dem)

Mx2tics

x2 (>e) <4$N>.L\@9$j9o$_$N0u$Oset mx2tics $G@)8f$5l^$9!#0J2<;2>Hset mxtics (p. 143)!#

>.L\@9$j9o$_ (mxtics)

x<4$N>.L\@9$j9o$_$N0u$Oset mxtics $G@)8f$5l^$9!#unset mxtics KhCF$=lrI=<(5;J/$9k3H,=PMh$^$9!#F1MM$N@)8f%3%^%s%I$,3F<4Kh$KMQ0U$5lF$$^$9!#

=q<0:

```
set mxtics {<freq> | default}
unset mxtics
show mxtics
```

mytics, **mztics**, **mx2tics**, **my2tics**, **mrtics**, **mcbtics**

<freq>

My2tics

Mytics

Mztics

(object)

set object

rectangle

circle

ellipse

%5%]!<%H7F$$^$9!#D9J}7A$O!"%3%^%s%I **set style rectangle** KhCF@_Dj5l$?%9%?%$%k$NB0@-$NAH(EIjDY7!"?'!"6-3&) $r%G%U%)%k%H$H7F<u$17Q$.$^$9$,!"8D!9$N%*%8%'%/%H$rJL!9$N%9%?%$%kB0@-$GIA2h9k3HbbAm$s2DG=$G$9!#1_$HBJ1_$O!"**set style fill** KhkEIjDY$7%9%?%$%k$r<u$17Q$.$^$9!#2 <!85%0%i%U$N%*%V%8%'%/%H$O!"<4:BI8!"%0%i%U:BI8(**graph**), %9%/%j!<%s:BI8(**screen**) $N$$$:lNAH$_9g$o$;$G$hDj5A$G$-$^$9!#3 <!85%0%i%U$N%*%V%8%'%/%H;XDjGO!"%9%/%j!<%s:BI8$r;H$oJ1lP$$$1$^$;s,!"1_$HB?3Q7A(polygon) $@$1$O<4:BI8$H%9%/%j!<%s:BI8$,;H$($^$9!#

=q<0:
```
   set object <index>
       <object-type> <object-properties>
       {front|back|behind} {clip|noclip}
       {fc|fillcolor <colorspec>} {fs <fillstyle>}
       {default} {lw|linewidth <width>} {dt|dashtype <dashtype>}
   unset object <index>
```

<object-type> $O!"**rectangle**, **ellipse**, **circle**, **polygon** $N$$:l+$G$9!#8D!9$N%*%V%8%'%/%H$N7?$O!"$=$N7?$KFCM-$N@-<A$b$$$/D+;}CF$$^$9!#

front $r;XDj$9kH!"%*%V%8%'%/%HO9YF$NIA2hMWAG$NA0(>e) $KIA2h$5l^9,!"**front** $H;XDj$5l?%i%Y%khj$O8e$m(2<) KJj^$9!#**back** $r;XDj$9kH!"9YFNIA2hMWAG!"9YFN%i%Y%k$N8e$m$KG[CV$5l^$9!#**behind** $O!"<4$d**back** $ND9J}7A$r4^$'$9YFNbNN8emKG[CV5l$^$9!#hC$F!"

```
   set object rectangle from screen 0,0 to screen 1,1 behind
```

$O!"%0%i%U$d%Z!<%8A4BN$NGX7J$K?'rD1kNKMxMQG-$^$9!#

%G%U%)%k%HGO!"%*%V%8%'%/%H$O!">/$J$/$H$b1$D$ND:E@$,%9%/%j!<%s:BI8$GM?$(il$F$$$J$$B$j!"%0%i%U6-3&$G%/%j%C%T%s%0$5$l$^$9!#**noclip** $H@_Dj$9kH!"%0%i%U6-3&GN%/%j%C%T%s%0$OL58z$KJj$^$9$,!"%9%/%j!<%s%:$KBP9k%/%j%C%T%s%0$O9T$ol^$9!#

%*%V%8%'%/%HNEIjDY7N?'$O<colorspec> $G;XDj$7$^$9!#**fillcolor** $O**fc** $H>JN,$G$-$^$9!#EI$jDY$7%9%?%$%k$O<fillstyle> $G;XDj$7$^$9!#>\:Y$O!"0J2<;2>H: **colorspec (p. 37)**, **fillstyle (p. 163)**!#%-!<%o!<%I**default** $r;XDj$9kH!"3liNB0@-$OIA2h$,<B:]$K9T$olkH-$N%G%U%)%k%H$N@_Dj$r<u$17Q$.$^$9!#0J2<;2>H: **set style rectangle (p. 166)**!#

D9J}7A(**rectangle**)

=q<0:
```
   set object <index> rectangle
       {from <position> {to|rto} <position> |
        center <position> size <w>,<h> |
        at <position> size <w>,<h>}
```

D9J}7A$N0LCV$O!"BP3Q$K8~$+$9g$&2 DND:E@(:82<$H1&>e) $N0LCV!"$"$k$$$OCf?4E@$N0LCV$H2#I}(<w>) $H=DI}(<h>) $G;XDj$G$-$^$9!#$$$:lN>19g$bE@$N0LCV$O!"<4$N:BI8(**first**, **second**)!"%0%i%UNN0hFb$NAjBP:BI8(**graph**)!"%9%/%j!<%s:BI8(**screen**) $N$$$:l+$r;HMQ$G$-$^$9(0J2<;2>H: **coordinates (p. 24)**)!#%*%W%7%g%s **at** $H **center** $OF1$80UL#$G$9!#

Nc:
```
   # :BI8<4$G0O$^$l$?NN0hA4BN$NGX7J$r?e?'$K
   set object 1 rect from graph 0, graph 0 to graph 1, graph 1 back
   set object 1 rect fc rgb "cyan" fillstyle solid 1.0

   # :82<3Q$, 0,0, 1&>e3Q$, 2,3 $N@V$$;M3Q$r0l$DCV$/
   set object 2 rect from 0,0 to 2,3 fc lt 1

   # @D$$6-3&$N6u(EI$jDY$5$J$$) D9J}7A$rCV$/
   set object 3 rect from 0,0 to 2,3 fs empty border rgb "blue"

   # D:E@$O0\F0$7$J$$^$^!"EI$jDY$7$H?'$r%G%U%)%k%H$KJQ99
   set object 2 rect default
```

%9%/%j!<%s:BI8$GD9J}7A$N3Q$r;XDj$9kH!"$=$l$O8=:_$N%0%i%UNN0h$NC<$r1[$($k3H$b2DG=$G9,!"$=$NB>$N19g$OD9J}7A$O%0%i%UFb$K<}$^$kh&&$K%/%j%C%T%s%0$5l^$9!#

BJ1_ (ellipse)

=q<0:

```
set object <index> ellipse {at|center} <position> size <w>,<h>
    {angle <orientation>} {units xy|xx|yy}
    {<other-object-properties>}
```

BJ1_$N0LCV$O! "Cf?4$r;XDj$7! "$=$N8emKI}$H9b$5(<g<4$HI{<4) $r;XDj$7$^$9! #%-! <%o! <%I **at** $H **center** $CF1$80UL#$G$9! #Cf?4$N0LCV$N;XDjKO! "<4$N:BI8(**first**, **second**)! "%0%i%UNN0hFb$NAjBP:BI8(**graph**)! "%9%/%j! <%s:BI8(**screen**) $N$$:l+$r;HMQ$G$-$^$9(0J2<;2>H **coordinates (p. 24)**)! #<g<4$HI{<4$ND9$5$O! "<4$N:BI8$GM?$($J1l$P$$$1$^$;$s! #BJ1_$N8~$-(orientation) $O! "?eJ?<4$HBJ1_$N<g<4$H$N4V$N3QEY$G;XDj$7$^$9! #3QEY$rM?$(J1lP! "%G%U%)%k%H$NBJ1_$N8~$-$,Beoj$K;H$ol^$9(0J2<;2>H:**set style ellipse (p. 166)**)! #%-! <%o! <%I **units** $O! "BJ1_$N<4$N=L<\$N@)8f$K;HMQ$7$^$9! #**units xy** $O! "<g<4$Ox<4$NC10L$G! "I{<4$Oy<4$NC10L$G7W;;$7$^$9$,! "**units xx** $CN><4$H$bx<4$NC10L$G=L<\$7! "**units yy** $CN><4$H$by<4$NC10LKJj^$9! #%G%U%)%k%H$O **xy** G9$,! "**set style ellipse units** $N@_Dj$G$$DGbJQ99G-$^$9! #

CmOU:x<4$Hy<4$N=L<\$,Ey7/J>19g($=$7$F **units xy** $N>19g)! "2sE>8e$N<g<4$HI{<4$NHf$O@5$7$/$OJj^$;$s! #

set object ellipse size <2r>,<2r> $H **set object circle <r>** HO! "0lHLKCF1$8$3HKOJiJ$$3HKCmOU7F$/$@$5$$! #circle $NH>7B$O>o$Kx<4$NC10L$G7W$i$l! "$hCFx<4$Hy<4$N=L<\$,0cC?$j! "IA2h$N%"%9%Z%/%HHf$,1 GJ$/Fb! ">o$K1_$,@8@.$5l^$9! #**units $, xy** $K@_Dj$5lF$$$l$P! "set object ellipse' GO! ":G=i$N<2r> $Ox<4$NC10L$G! "8e$m$N<2r> $Oy<4$NC10L$G7W$il^9,! "3l$Ox<4$Hy<4$N=L<\$,F1$8$G! "$+$DIA2h$N%"%9%Z%/%HHf$,1 G"$k>19g$N$_1_$r@8@.9k3H$r0UL#$7$^$9! #7+$7! "**units** $r **xx** $d **yy** $K%;%C%H$9lP! "%3%^%s%I **set object** $G;XDj$7$?D>7B$CF1$8C10L$G7W;;5lkN$G! "BJ1_$O@5$7$$%"%9%Z%/%HHf$r;}$A! "IA2h$r%j%5%$%:7Fb=$N%"%9%Z%/%HHf$OJ];}5l$^$9! #

1_ (circle)

=q<0:

```
set object <index> circle {at|center} <position> size <radius>
    {arc [<begin>:<end>]}
    {<other-object-properties>}
```

1_$N0LCV$O! "Cf?4$r;XDj$7! "$=$N8emKH>7B$r;XDj$7$^$9! #%-! <%o! <%I **at** $H **center** $CF1$80UL#$G$9! #$=$N0LCV$HH>7B$K$O! "x<4$N:BI8! "%0%i%UNN0hFb$NAjBP:BI8(**graph**)! "%9%/%j! <%s:BI8(**screen**) $N$$:l+$r;HMQ$G$-$^$9(0J2<;2>H: **coordinates (p. 24)**)! #3<!85%0%i%U$N1_$K$O! "<4:BI8$+%9%/%j! <%s:BI8$N$$:l+$r;H$&I,MW$,$"j^$9! #$=$N$$:lN>19gGb! "H>7B$O<4! "%0%i%U! "%9%/%j! <%s$N?eJ?J}8~$N=L<\$KBP7F7Wil! "?eJ?J}8~$H?bD>J}8~$N=L<\$K$:$l$,$"CF$b! "7k2L$,>o$K@5$7$/1_$KJkh&$KD>$5l^$9! #1_$r%0%i%U$N:BI8$GIA$-$?$$(D^$j?eJ?<4$H?bD><4$N%9%1! <%k$,0c$&19g$K$O=$l$,BJ1_$H7FI=<(5lkh$&$K7$?$)>19g$O! "Be$ojK **set object ellipse** $r;H$CF/$@$5$$! #

%G%U%)%k%HGO! "4OA4$J1_$,IA2h5l$^$9! #%*%W%7%g%s$N **arc** $K3+;C3Q$H=*N;3QrEYrC10LH7$F;XDj$9kH1_8L$rIA2h$7$^$9! #1_8L$O! ">o$KH?;~7W2sjKIA$+$l$^$9! #

0J2<$b;2>H: **set object ellipse (p. 146)**! #

B?3Q7A (polygon)

=q<0:

```
set object <index> polygon
    from <position> to <position> ... {to <position>}
```

$^$?$O

```
    from <position> rto <position> ... {rto <position>}
```

B?3Q7A$N0LCV$O! "D:E@$N0LCV$NNs$rM?$(k3HG;XDjG-$^$9! #$=$liO! "<4$N:BI8(**first**, **second**)! "%0%i%UNN0hFb$NAjBP:BI8(**graph**)! "%9%/%j! <%s:BI8(**screen**) $N$$:l+$r;HMQ$G$-$^$9! #AjBPE*J:BI8(rto) $r;XDj$9$k>19g$O! "$=$N:BI87O$OA0$ND:E@$HF1$8:BI87OGJ1l$P$$$1$^$;$s! #0J2<;2>H: **coordinates (p. 24)**! #

Nc:

```
set object 1 polygon from 0,0 to 1,1 to 2,0
set object 1 fc rgb "cyan" fillstyle solid 1.0 border lt -1
```

%0%i%U0LCV$ND4@0 (offsets)

%*%U%;%C%H$O!"<+F'0=L<\$5l?%0%i%UNCfN%G!<%?$N<~$j$K6u$N6-3&rCV/;EAH$_$rDs6!7^$9!#%*%U%;%C%H$O!"x1,y1 <4$H2 <!85$N **plot** %3%^%s%IN_$G0UL#$r;}A^$9!#

=q<0:

```
set offsets <left>, <right>, <top>, <bottom>
unset offsets
show offsets
```

3F%*%U%;%C%H$ODj?t!"$^$?$O?t<0$,;H$(!"$=$liN%G%U%)%k%HNCMO0 $G$9!#%G%U%)%k%HGO!":81&$N%*%U%;%C%H$Ox1 <4$HF1$8C10L$G;XDj$7!">e2<$N%*%U%;%C%H$Oy1 <4$HF1$8C10L$G;XDj$7$^$9$,!"%-!<%o!<%I"graph"$rMQ$$$k3H$G<4$NA4HC0CKBP9$k3d9g$H7F%*%U%;%C%H$r;XDj$9k3HbG-$^$9!#@5$N%*%U%;%C%H$NCM$O!"<4$NHC0C$r;XDj$5l?J}8~$X?-$P7^$9!#Nc$($P@5$N2<J}8~$N%*%U%;%C%H$Oy $N:G>.CM$rhj>.5JCMK7$^$9!#5v5l$F$$$kHC0CGNIi$N%*%U%;%C%H$O!"<+F'0=L<\!"$"$k$$C%/%j%C%T%s%0HN;W$$$bhi$L7k2L$r@8$`2DG=@-$,$"$j$^$9!#K+F'0=L<\5!G=$+$i<4$NHC0C$ND4@a$r<i$j$?$$>l9g$O!"'"set auto fix" $b;XDj$9kH$$$$G7g$&!#

Nc:

```
set auto fix
set offsets graph 0.05, 0, 2, 2
plot sin(x)
```

3N sin(x) $N%0%i%U$N y $NHC0C$O [-3:3] KJj^$9!#$=lO!"4X?t$N y $NHC0C$O [-1:1] $K<+F'0=L<\$5l^9,!"?bD>J}8~$N%*%U%;%C%H$,$=$l$>$l2 G"k?aG$9!#x $NHC0C$O [-11:10] KJj^9,!"3l$O%G%U%)%k%H$, [-10:10] G=$NA4HC0C$,:8$K0.05 $N3d9g$@$1?-$P5lk?aG$9!#

%0%i%U0LCV$N;XDj (origin)

%3%^%s%I **set origin** $O%9%/%j!<%s>e$G6JLLIA2h$N86E@$r;XDj(9JoA!"%0%i%UH=$NM>Gr) 9kNK;HMQ7^$9!#$=$N:BI87O$O%9%/%j!<%s:BI87O(**screen**) $GM?$($^$9!#3N:BI87O$K4X$9$k>pJs$K$D$$F$O!"0J2<;2>H**coordinates (p. 24)**!#

=q<0:

```
set origin <x-origin>,<y-origin>
```

=PNO@h;XDj (output)

%G%U%)%k%HGO!"%0%i%U$OI8=`=PNO$KI=<(5l$^$9!#%3%^%s%I **set output** O=$N=PNO$r;XDj5l$?%U!%$%k$d%G%P%$%9$K%j%@%$%l%/%H7^$9!#

=q<0:

```
set output {"<filename>"}
show output
```

%U!%$%kL>$C0zMQId$G0C$^JllPJj$^$;$s!#%U!%$%kL>$,>JN,$5$l?>l9g$O!"D>A0$N**set output** $G3+$+$l?%U!%$%k$,%/%m!<<:$5$l!"?7$?$J=PNO$,I8=`=PNO(STDOUT) KAwil^$9!#$b$7!"**set output "STDOUT"** H9kH=PNO$O"STDOUT" $H$$&L>A0$N%U!%$%kKAwilk$+$b7l$^$;$s!["$+b7lJ$$" $H$$&NO!"Nc$($P**x11** $d**wxt** JI$N terminal (=PNO7A<0) GO**set output** $,L5;k$5lk$+$i$G$9!#)

set terminal $H**set output** $NN>J}$r;XDj9k>l9g!"**set terminal** $r@h$K;XDj9kJ}$,0BA4$G$9!#$=lO!"$"$k<o$N terminal GO!"OS $,I,MW$H9k%U%i%0$r;%C%H$9k3H,$"$k$+$i$G$9!#Nc$($P!"%P%$%J%U%!%$%kKBP7$FJL!9$N open %3%^%s%IrI,MWH9kh&$J OS JI$,$=lK3:Ev7^$9!#

%Q%$%W$r%5%]!<%H9k4D6-GO!"%Q%$%W=PNO$bM-MQ$G$9!#Nc$($P0J2<NDLj$G$9:

```
set output "|lpr -Plaser filename"
set term png; set output "|display png:-"
```

MS-DOS GO!"**set output "PRN"** H9kHI8=`$N%W%j%s%?$K=PNC5l$^$9!#VMS GO=PNCOG0U$N%9%W!<%k2DG=$J%G%P%$%9$KAwk3H,=PMh$^$9!#

G^2pJQ?t%b!<%I (parametric)

set parametric %3%^%s%I$O**plot** $*$h$S**splot** $N0UL#$rDI>o$N4X?tIA2h$+$iG^2pJQ?tI=<((parametric) 4X?tIA2h$KJQ99$7$^$9!#**unset parametric** $r;H$($P85$NIA2h%b!<%IKLaj$^$9!#

=q<0:

```
set parametric
unset parametric
show parametric
```

2<!85%0%i%UK*$$$F$O!"G^2pJQ?tI=<(4X?t$ORHDNG^2pJQ?tKBP9$k2 DN4X?tGDjail$^$9!#NcH7FO plot sin(t),cos(t) H9k3HKhC$F1_$,IA1^$9(%"%9%Z%/%HHf$,@5$7$/@_Dj5l$F$$$l$P!#0J2<;2>H:**set size (p. 159)**)!#**gnuplot** $O!"N>J}$N4X?t$,G^2pJQ?t$Khk**plot** N?aKM?$($ilF$$$Jll$P%(%i!<%a%C%;!<%8$r=P7^$9!#

3<!85%0%i%UK*$$$FOLLOx = f(u,v), y = g(u,v), z = h(u,v) GDjail$^$9!#hC$F3 DN4X?trAHG;XDj9kI,MW$,$"j^$9!#Nc$H7F$O!"**cos(u)*cos(v),cos(u)*sin(v),sin(u)** H9k3HKhC$F5eLL$,IA1^$9!#**gnuplot** $O!"3 $DA4It$N4X?t$,G^2pJQ?t$Khk**splot** N?aKM?$($ilF$$$Jll$P%(%i!<%a%C%;!<%8$r=P7^$9!#

3lKhCFI=8=G-$k4X?t72$O!"C1=c$Jf(x) 7?$N4X?t72$NFbJq$9k3HKJj$^$9!#J<Ji$P!"2 $D(3$D) $N4X?t$Ox, y (, z) NCMrFHN)$K7W;;$9$k5-=R$,G-k+iG$9!#<B:]!"t,f(t) $N%0%i%U$O!"0lHVL\$N4X?tNh$&$J91Ey4X?t$rMQ$$$Fx NCM,7W;;5l$k>19g$Kf(x) KhCF@8@.5l$k%0%i%U$HEy2A$G$9!#F1MM$K!"3<!85$G$Nu,v,f(u,v) $NIA2h$O!"f(x,y) $HEy2A$G$9!#

G^2pJQ?tI=<(4X?t$O!"x $N4X?t!"y $N4X?t(!"z $N4X?t) $N=q$K;XDj$7!"$=li$O6&DL$NG^2pJQ?t$*$hS=$NJQ0h$GDj5A5lk3HKN10U7F2<$5$$!#

5i$K!"**set parametric** $N;XDj$O!"?7$7$$JQ?tJQ0h$r;HMQ$9k3Hr0E$K@k8@$7$^$9!#$DL>o$Nf(x) $df(x,y) $,xrange!"yrange (!"zrange) $r;HMQ$9kNKBP7$F!"G^2pJQ?t%b!<%I$GO=lK2C$($F!"trange, urange, vrange $r;HMQ$7$^$9!#3liNJQ0h$O**set trange**, **set urange**, **set vrange** KhCFD>@\;XDj9k3H$b!"**plot** $d**splot** $G;XDj$9k3HbG-$^$9!#8=;~$E@$G$O!"$3li$NG^2pJQ?t$N%G%U%)%k%H$NJQ0h$O[-5:5] HJCF$$$^$9!#>-MhE*$KO3li$N%G%U%)%k%HCM$rbC$HM-0U$JbN$KJQ99$9$kM=Dj$G$9!#

J?9TIA2h<4@_Dj (paxis)

=q<0:

```
set paxis <axisno> {range <range-options> | tics <tic-options>}
show paxis <axisno> {range | tics}
```

%3%^%s%I**set paxis** $O!"U?9T:BI8IA2h$Np1, p2, ... <4$N0l$D$K:rMQ$9k3$H0J30$O!"**set xrange** $d**set xtics** $HF1$8$G$9!#0J2<;2>H:**parallelaxes (p. 60)**, **set xrange (p. 176)**, **set xtics (p. 177)**!#range $Htics %3%^%s%I$X$NDL>o$N%*%W%7g%s$O!"U?9T:BI8IA2h%9%?%$%kKC0UL#NJ$$$bNb$"$j$^$9$,!"0ll~$9YF$r<u$1D1$^$9!#

Plot

%3%^%s%I**show plot** $O8=:_$NIA2h%3%^%s%I!"9JoA**replot** %3%^%s%I$G:F8=$5lk!"D>A0$K9T$ol?**plot** $d**splot** %3%^%s%I$rI=<(7^$9!#

5i$K%3%^%s%I**show plot add2history** $O!"$3$N8=:_$NIA2h%3%^%s%I$r**history** $K=q$-=P7^$9!#$3lO!"**replot** $r;H$C$FD>A0$NIA2h%3%^%s%I$K6J@~$rD12C7?>19g!"$=$7$F%3%^%s%I9TA4BN$r$9$0$KJT=8$7$?$>19g$KJXMx$G$9!#

Pm3d

pm3d $O **splot** $N0l$D$N%9%?%$%k$G!"%Q%l%C%H$K3djIU1il$?3 <!85!"4 <!85%G!<%?$r!"%+%i!</3%?'$N?'CO?^/6JLL$H7FIA2h7^$9!#$3lO$"$k%"%k%4%j%:%'$rMQ$$$F$$F!"3l$O%G!<%?$,3J;R>uG"CF$b!"%G!<%?Av::Kh$KE@$N?t$,0cCF$$kh&$JHs3J;R>u$N%G!<%?G"CF$b!"A0=hM}$9k3HJ$/IA2h$G$-$^$9!#

=q<0(%*%W%7%g%sOG0U$N=g$GM?$($k3H$,$G$-$^$9):

```
set pm3d
set pm3d {
            { at <position> }
            { interpolate <steps/points in scan, between scans> }
            { scansautomatic | scansforward | scansbackward | depthorder }
            { flush { begin | center | end } }
            { ftriangles | noftriangles }
            { clip1in | clip4in }
            { corners2color
              { mean|geomean|harmean|rms|median|min|max|c1|c2|c3|c4 }
            }
            { hidden3d {<linestyle>} | nohidden3d }
            { implicit | explicit }
            { map }
          }
show pm3d
unset pm3d
```

splot %3%^%s%I$G **with pm3d** $r;XDj$7$?>19g!"$^$?$O%G!<%?$d4X?tIA2h%9%?%$%k(**style**) $,Bg0hE*$K pm3d $K%;%C%H$5lF$$$k>19g!"$"$k$$O!"pm3d %b!<%I$, **set pm3d implicit** HJCF$$k>19g$O!"pm3d $N%+%i!<6JLL$,IA2h5l$^$9!#8e$N2 DN>19g$O!"plot %3%^%s%I$G;XDj7?%9%?%$%k$G@8@.5l$kLVL\$K p3md 6JLL$rDI2C$9$k7A$GIA2h7^$9!#Nc$($P!"

```
splot 'fred.dat' with lines, 'lola.dat' with lines
```

$O!"3F%G!<%?=89gKh$K@^$l@~$KhkLVL\$H pm3d 6JLL$NN>J}$rIA2h7^$9!#%*%W%7%g%s **explicit** $,ON($^$?$O **implicit** $,OFF) $N>19g$O!"B0@- **with pm3d** $,;XDj$5l?IA2hN_$,pm3d 6JLL$H7FIA2h5l$^$9!#Nc$($P

```
splot 'fred.dat' with lines, 'lola.dat' with pm3d
```

$O!"'freq.dat' $O@^$l@~$G(@~$N$_$G)!"'lola.dat' $O pm3d 6JLL$GIA2h5l$^$9!#

gnuplot $N5/F0;~$O$=$N%b!<%I$O **explicit** KJCF$$^$9!#Nr;KE*!"$=7F8_49@-N?aK!"%3%^%s%I **set pm3d;** (9JoA%*%W%7%g%s$r;XDj$7J>19g) $H **set pm3d at X ...** (9JoA **at** $,:G=i$N%*%W%7%g%s$N>19g) $O%b!<%I$r **implicit** $KJQ99$7$^$9!#%3%^%s%I **set pm3d;** $O!"$=$NB>$N%*%W%7%g%sr=li$N%G%U%)%k%H$N>uBV$K@_Dj$7$^$9!#

%G%U%)%k%H$N%G!<%?$r **pm3d** K7$?$$>19g$O!"Nc$($P

```
set style data pm3d
```

H7$^$9!#3N>19g!"%*%W%7%g%s **implicit** $H **explicit** $O8zNO$r;}A^$;$s!#

$$/D+$NIA2h$K$*$$$F$O!"$=li$O%3%^%s%I%i%$%s$GM?$(il$?=g$KIA2h5lk3HKCm0U7F$/$@$5$$!#3lOFCK!"0JA0$NIA2h$r>e=q$-$7F=lG$=$N0lIt$r1#$7F7$^$&2DG=@-$,$"kh$&$J6JLL$NEI;j$DV7$N:]$K4X?4$r;}$?$($?lkG7g&!#

p3md $N?'IU$1$O!"3 DN0[Jk0LCV **top**, **bottom**, **surface** $N$$:l+!"$^$?O9YF$K9T$($^$9!#0J2<;2>H **pm3d position (p. 150)**!#0J2<$N%3%^%s%I$O!"0[JC$?9b$5$G3 DN?'IU$-$N6JLLrIA-$^$9:

```
set border 4095
set pm3d at s
splot 10*x with pm3d at b, x*x-y*y, x*x+y*y with pm3d at t
```

0J2<;b;2>H **set palette (p. 152)**, **set cbrange (p. 184)**, **set colorbox (p. 114)**!#$=$7FbAm$s%G%b%U%!%$%k **demo/pm3d.dem** $b;29M$KJkG7g&!#

Pm3d $N%"%k%4%j%:%`(algorithm)

$^$:!"CO?^/6JLL$,$INh$&$KIA$+$lkN$+$K$D$$$F5-=R7^$9!#F~NO%G!<%?$O!"4X?t$rI>2A$7$FF@$ilk$+$^$?$O**splot data file** $+$iF@il$^$9!#6JLL$O!"Av::(8IN)@~) $N7+$jUV7G9=@.5l$^$9!#pm3d %"%k%4%j%:%`GO!":G=i$NAv::$G8!=P5l$?NY$j9g$&2E@$H!"<!$NAv::$G8!=P5l$?B>$N2E@$N4V$NNN0h$,!"$3li4E@$Nz $NCM($^$?$OCI2C5l$?'color' MQ$NNs$NCM!"0J2<;2>H: **using (p. 92)**) $K=>$C$F3%?'$G($^$?$O%+%i!<$G) EIil$^$9!#%G%U%)%k%HGO4 DN3QNCMNJ?6QCM$,;H$ol^9,!"$=$l$O%*%W%7%g%s**corners2color** $GJQ9$G$-$^$9!#$=lJjN6JLLrIA/$?$aKO!"NY$j9g$&2E@$NAv::$,8r:9$7$F$O$$1J/$F!"6a@\E@Av::Kh$NE@$N?t$,0c$$9$.$F$O$$1$^$;$s!#b$Ams!":G$bNI$$N$OAv::$NE@$N?t$,F1$8$3HG$9!#B>$K$O2?$bI,MWGO$"$j$^$;$s(Nc$($P%G!<%?$O3J;R>uG"kI,MWbJ)!#B>Kb3Npm3d %"%k%4%j%:%`$O!"F~NO$5$l?(7WB,$5$l?!"$"$k$$O7W;;5l?)NN0h$N30$K$O2?$bIA$+$J$!"$H$$&D9=j$,$"j^$9!#

6JLL$N?'$E1O!"0J2<Nh$&$JF~NO%G!<%?$K4X$7$F9T$ol^$9:

1. 4X?t!"$^$?$O1 D+3 DN%G!<%?Ns$+$iJk%G!<%?$N splot: >e$K=RY?;M3Q7A$N4 DN3Q$Nz :BI8$NJ?6QCM($^$?$O **corners2color**) $+$i!"3%?'$NHOOO [0:1] $rM?$($k **zrange** $^$?$O **cbrange** $NHOOO [min_color_z,max_color_z] XNBP1~Kh$j!"3%?'/%+%i!<$NCM$,F@$il^$9!#$3NCMO!"D>@\3%?'$N?'CO?^MQ$N3%?'NCMH7F;H$&$3H,G-$^$9!#@55,2=5l$?3%?'$NCM$r%+%i!<$KBP1~5;k3HbG-$^$9!#40A4$J@bL@$O!"0J2<;2>H: **set palette (p. 152)**!#

2. 2 D+4 DN%G!<%?Ns$+$iJk%G!<%?Nsplot: 3%?'/%+%i!<NCMO!"z NCMNBeoj$K:G8e$NNs$N:BI8$r;HCFF@il$^$9NG!"?'$Hz :BI8$,FHN)JbNKJj$^$9!#3l$O4 <!85%G!<%?$NIA2h$K;H$&3H$,$G$-$^$9!#

B>$NCm0U:

1. J*M}3X<T$N4V$G$O!"gnuplot $NJ8=q$d%=!<%9$K8=$olk'iso_curve'(8IN)@~) $H$$$&8@MUhj$b!">e$G8@5Z7?'Av::(scan)' $H$$$&8@MUNJ,;Hol$F$$$^$9!#1EY$NAv::$HB>$NAv::$N5-0?$Khj?'CO?^$rI>2A$9$k!"$H$$$&NO$=$&$$&0UL#$G$9!#

2. 'gray' $d'color' $NCM(scale) $O!"3j$i$+$KJQ2=9k%+%i!<%Q%l%C%HXN!"O"B3$JJQ?t$N@~7A<IA|$G$9!#$=$N<IA|$NMM;R$OIA2h%0%i%UNNYKD9J}7A$GI=<($5l^$9!#$3$NJ8=q$GO=lr"%+%i!<%\%C%/%9(colorbox)"$H8F$S!"$=$NJQ?t$r%+%i!<%\%C%/%9<4$NJQ?t$H8F$S$^$9!#0J2<;2>H: **set colorbox (p. 114)**,**set cbrange (p. 184)**!#

Pm3d $N0LCV(position)

?'$N6JLL$CDlLL$+E70f($3$N>l9g$O3%?'/%+%i!<$NJQ?tLICO?^) $+6JLL>e$NE@$Nz :BI8(3%?'/%+%i!<6JLL) KIA/3H$,$G$-$^$9!#$=$NA*Br$O!"%*%W%7%g%s**at** $K!"**b**, **t**, **s** $N6 D^GNAH9g$;$NJ8;zNsrD1F;XDj9k3H$G9T$($^$9!#Nc$($P **at b** $CDlLL$N$_$KIA2h7^$9$7!"**at st** $O:G=i$K6JLL$KIA$$F<!$KE70fLL$K?'CO?^rIA-$^$9$7!"**at bstbst** $O... ??LlL\$JOC!"3sJbNO;H$$^$;$s!#

EIil$?;M3Q7A$O!"<!$+$i<!XHIA2h5l$F9T$-$^$9!#6JLL$rIA2h$9$k>l9g(**at s**)!"8e$N;M3Q7A$,A0$NbN$K=E$J$j(>e=q$-$7) $^$9(gnuplot OEIil?B?3Q7ANLVN=EJj$NAj8_:nMQ$r7W;;9kh&$J2>A[8=<B%D!<%k$GO"j($s)!#:G=i$KAv::5l$k%G!<%?$r:G=iKIA/$+:G8e$KIA$/$+$r@ZBX$($k%9%$%C%A*%W%7%g%s **scansforward** $H **scansbackward** $r;n$7F_$F/$@$5$$!#%G%U%)%k%H$O **scansautomatic** $G!"$3lO gnuplot <+?H$KAv::$N=q$r?dB,$5$;$^$9!#0lJ}$G!"%*%W%7%g%s **depthorder** $O;M3Q7A$N=g=x$r40A4$K:F9=@.7^$9!#EI$jDV7O?<$5=g$KJBSJQ(5l$?8e$G9Tol!"3lKhj+JjJ#;($J6JLL$G$b;k3PE*$JbNK9k3H,G-$^$9!#>\:Y$O!"0J2<;2>H: **pm3d depthorder (p. 150)**!#

Av::$N=gHV(scanorder)

%G%U%)%k%HGO!"pm3d NEIjDY$76JLL$r9=@.9k;M3Q7A$O!"$=li$,6JLL$N3J;RE@$K1h$C$F=P2q$&=gHVKEIjDY5l$^$9!#3N=gHV$O!"%*%W%7%g%s **scansautomatic**|**scansforward**|**scansbackward** $G@)8f$G$-$^$9!#$3li$NAv::(scan) %*%W%7%g%s$O!"0lHLKO1#LL=hM}HCN>N)7^$;$s!#

2 2s$NO"B3$9$kAv::$GE@$N?t$,F1$8$GJ+$C?>l9g!";M3Q7A$NE@$N<h$j;Oar!"N>J}$NAv::$N:G=i$+$i(**flush begin**) K9k+!":G8e$+$i(**flush end**) K9k+!"??Cf$+$i(**flush center**) K9k+$r7hDj$7Jl$P$$$1$^$;$s!#**flush (center|end)** $O **scansautomatic** HCN>N)$;$:!"hC$F **flush center** $^$?$O **flush end** $r;XDj$7$F **scansautomatic** $,@_Dj$5$l?>l9g!"$=lOL58@$G **scansforward** $KJQ9$5l^$9!#

2 2s$NO"B3$9$kAv::$GE@$N?t$,F1$8$GJ+$C?>l9g!"8D!9$NAv::$GE@$,B-jJJ>l9g$K!"Av::$N:G8e$K?';03Q7A$rIA$/$+$I&$+$r%*%W%7%g%s **ftriangles** $O;X<($7$^$9!#3l$O3j$i$+$J?'CO?^$N6-3&$rIA$/$N$K;H$ol^$9!#

gnuplot $O! "6JLL$NEIjDY7K*$$F$O! "K\Ev$N1#LI=hM}$O9T$$^$;$s$,! "$?$$F$$O1s$$J}$+$i6a$$J}$X=g $K;M3Q7AMWAG$rEIjDY9$3$H$G==J,$JG-$"$,jKJj$^$9! #3N%b! <%I$O! "0J2<$N%*%W%7%g%s$r;H$&3H$G A*Br$G$-$^$9:

```
set pm3d depthorder hidden3d
```

%*%W%7%g%s **depthorder** CEIjDY$7;M3Q7A$X$N;X< ($G! "%*%W%7%g%s **hidden3d** $CF1MM$K6-3&@~(b7IA$/$J $i) XN;X< ($G$9! #Bg0hE*$J%*%W%7%g%sG"$k **set hidden3d** $O! "pm3d 6JLL$K$O1F6A$7$J$$3HKCm0U7F $/$@$5$$! #

%/%j%C%T%s%0 **(clipping)**

;M3Q7A$N x,y :BI8$K4X9k%/%j%C%T%s%0$O 2 DNJ}K!$G9T$ol^$9! **#clip1in**: 3F;M3Q7A$NA4$F$N 4 E@$,Dj 5A5l$F$$$J1lPJi:! ">/J/Hb$=$N$&$A$N 1 E@$, x, y $NHO0O$K$*$5$^$C$F$$$J1lPJj^$;$s! # **clip4in**: 3F;M3Q7A$NA4$F$N 4 E@$, x, y $NHO0O$K$*$5$^$C$F$$$J1lPJj^$;$s! #

?'$N3d$jEv$F

3 Ns$N%G! <%? **(x,y,z)** $N>19g:

?'E1$N@_Dj$O%+%i! <%\%C%/%9$NIA2h$HF1MM$K **set palette** $G7hDj$5l^$9! #0l$D$NIA2h$G$O0l$D$N%Q%l%C%H N_$,B8:_$7F@$^$9! #$$/Db$N6JLL$r0[Jk%Q%l%C%H$GIA2h$9kK$O! **'origin** $H **size** $r8GDj$7$F **mutiplot** $r;H$&3H$G9T$ ($^$9! #=PNO%I%i%P$,MxMQ$G$-$k?'$r;H$?T$/$7F7$^$&>19gKO **set palette maxcolors** $r;H$&3H$rK:$l$:$K! #

IA2h5l$k3F pm3d ;M3Q7A$K$O0l$D$N3?'/%+%i! <CM$,BP1~7^$9($=lO?'8{G[GOJ/L5CO$N?'$G$9)! #$=$N CM$O! **'corners2color** <**option**> $K=>$C$F4 DN3Q$Nz :BI8$+$i7W;$5l^$9! **#4** Ns$N%G! <%? **(x,y,z,color)** $N>19g:

4 NsL\$K%G! <%?$rM?$($?>19g! "$=lrDI>oOJLK%Q%l%C%H$K3d$jEvFk3%?'3,D4CMH_J7$^$9! #8D! 9$N;M3Q 7A$N:L?'$O>e$HF1MM$K9T$$$^9,! "?'NCMOz NCMH$O@Z$jN%5l$^$9! #JL$N:L?'%*%W%7%g%s$Khj! "4 NsL\ $N%G! <%?$K RGB ?'$rM?$(k3HbG-$^$9! #0J2<;2>H **rgbcolor variable (p. 38)**! #3N>19g! "IA2h%3%^ %s%I$O0J2<$Nh&K9kI,MW,$"$j$^$9:

```
splot ... using 1:2:3:4 with pm3d lc rgb variable
```

M?$($il?@aE@KBP7$F! "$=$N<~$j$N4 DN@aE@$NJ?6Q2=$5l?(x,y) :BI8$+$i3Q$rF@$F;M3Q7A$r:nCF! "$= $N;M3Q7A$r@aE@$N?'$GEI$k! "$H$$C$?$h$&$JB>$NIA2h%"%k%4%j%:%'\,-Mh<BAu5lk+b7l^;$s! #$3lO! " %$%a! <%8$NIA2h(2<!85$N3J;R)$KBP$7F$O **image** $H **rgbimage** %9%?%$%kKhCF4{$K9T$Jol$F$$^$9! #

z NCMNHO0O$H6JLL$N?'NCMNHO0O$O! "z $H cb $K4X$9$k **set log** F1MM! "**set zrange** $H **set cbrange** KhCF FHN)$KD4@0$7F@k3HKCm0U7F$/$@$5$$! #?'CO?^$O cb <4$N$_$GD4@a5l$^$9! #0J2<;b;2>H **set view map (p. 172)**,**set colorbox (p. 114)**! #

Corners2color

pm3d 6JLL$N3F;M3Q7A$N?'$O! "$=$N4 DND:E@$N?'NCMK4p$E$$$F3djEvFil$^$9! #<option> $O'mean' (%G %U%)%k%H)! "geomean', 'harmean', 'rms', 'median' $G! "6JLL$N%+%i! <$NJ?3j2=$K4vD+$N<dN'$rM?$(! "min','max' O=l>$l:G>.CM! ":GBgCM$rA*Br7^$9! #$3li$O1TIR$J! "$"$k$$$O5^7c$J%T! <%/CM$r;}Dh$&$J%T%/%;%k%$ %a! <%8$d?'CO?^$r:nkH$-$KOI,MW"j^;$s! #$=Nh$&$J>19gKO! "$'\'7$m%*%W%7%g%s 'c1', 'c2', 'c3', 'c4' $r;H$C$F! ";M3Q7A$N?'$N3dEv$K$?$@0lDN3Q$Nz :BI8$r;H$&$h$&$K9l$P$$$$G7g$&! #$I$N3Q$, 'c1' $KBP1~ 9kN+rCNk$?$aKO2?2s$+<B83$7F_kI,MW,$"$kG7g&! #$=$N8~$-$OIA2h$NJ}8~$K0MB8$7$F$$$^$9! # pm3d %"%k%4%j%:%'\$O! "%+%i! <6JLL$rF~NO%G! <%?E@$NHO0O$N30$KOIA+$J$$$N$G! "%*%W%7%g%s 'c<j>' $O! "3J ;R$N2 DNXj$K1h$C$?%T%/%;%k,! "$I$N;M3Q7A$N?'Kb4sM?7J$$! "$H$$&7k2Lrb$?$i7^$9! #Nc$($P! " pm3d %"%k%4%j%:%'\$r 4x4 $N%G! <%?E@$N3J;RKE,MQ9$k%9%/%j%W%H **demo/pm3d.dem** (@'Hs8+F/$@$5$$) GO! "(4-1)x(4-1)=9 ?'7+$J$$D9J}7A$,@8@.$5l^$9! #

Border

%*%W%7%g%s **set pm3d border {line-properties}** $O! "3F;M3Q7A$N6-3&@~$r! ";M3Q7A$,IA2h5lF"kh$& $KIA2h$7$^$9! #DI>o3l$O! "5<;wE*$J1#@~=hM}$r9T$&?aK! "%*%W%7%g%s **depthorder** HHbK;HMQ7^$9! #

pm3d %0%i%UGO!"Bg0hE*$J%*%W%7%g%s **set hidden3d** $O2?$N8z2L$b@8$^$J$$$3HKCm0U7F$/$@$5$$!#%G %U%)%k%H$N@~$NB0@-(?'!"I}) $r!"%-!<%o!<%I border $N8e$m$K%*%W%7%g%s$H7F8emKD1$^$9!#$=$N%G%U%) %k%HCM$O!"$=$N8e$N splot %3%^%s%I$GJQ9$G$-$^$9!#

?d>)9k;HMQNc:

```
set pm3d at s depthorder border lw 0.2 lt black
unset hidden3d
unset surf
splot x*x+y*y linecolor rgb "blue"   # $3$&$7$J$$$H9u
```

Cm Hs?d>)$N%*%W%7%g%s **set pm3d hidden3d N** b^$@;H$(($^$9$,!"$3lO**set pm3d border ls N** $HF1 8G$9!#

Interpolate

%*%W%7%g%s **interpolate m,n** $O!"$h$j:Y$+$JLVL\$r:nk?aK3J;RE@4V$rJd4V$7$^$9!#%G!<%?IA2hKBP7$F $O!"$3lO?'$N6JL$r3ji+$K$7!"$=$N6JL$N@m$j$rJd@5$7$^$9!#4X?tIA2hKBP7FO!"3NJd4VO[Hs$I 0UL#$O$"$j$^$;s+$i!"4X?tIA2h$N>19g$OIaDL**samples** $d **isosamples** $r;H$C$FI8K\?t$rA}2C5;kN$,$$ $$G7g$&!#

@5$Nm, n KBP7FO3F;M3Q7A!"$^$?$O;03Q7A$O!"$=l>lNJ}8~$Km 2s!"n 2sJd4V5l$^$9!#Ii$Nm, n $G $OJd4V$NIQEY$O!">/$J$/$H$b|m|, |n| E@$,IA2h5lkh$&$KA*Br5l$^$9!#3l$OFCJL$J3J;R4X?t$H8+$J$9$3 H,G-$^$9!#

Cm0U: **interpolate 0,0** $O!"<+F0E*$K:GE,$JJd4V6JLIE@?t$rA*Br7^$9!#

Cm0U: corners2color $G4v2?J?6Q(geomean) Nh$&$JHs@~7AI>2A$,@_Dj$5lF$$$?H7Fb!"8=:_$N?'$NJd4V $O>o$K@~7AJd4V$G9T$ol^$9!#

Hs?d>)$J%*%W%7%g%s

3N%3%^%s%IKO%*%W%7%g%s{transparent|solid} $b;H$olF$$$^7?!#8=:_$O!"F1$88z2Lr=l>$l**set grid {front|layerdefault}** KhCFF@k3H,G-$^$9!#

5l<0$N%3%^%s%I**set pm3d map** $O0J2<$N0lO"NbNHF1CM$G$9:**set pm3d at b; set view map scale 1.0; set style data pm3d;set style func pm3d;**

%Q%l%C%H (palette)

%Q%l%C%H$O!"**pm3d** $G!"%+%i!<Ey9b@~$dB?3Q7A!"%+%i!<%R%9%H%0%i%'!"?'8{G[$NGX7J!"$=$NB><BAu$5lF$$$k!" $"$k$$$O<BAu5lkbNNEIjDV7$G;H$olk!"?'$N5-21>l=j$G$9!#$3$3$GO=lO3ji+$G"O"B3E*$J" %+%i!<$d3%?'3,D4$N%Q%l%C%H$r0UL#$7$^$9$,!"$=lrC1$K%Q%l%C%H$H8FV3HK7^$9!#

%+%i!<%Q%l%C%H$O!"B?3Q7A$N?'NEIjDV7H3ji+$J?'$N%Q%l%C%H$r%5%]!<%H$7$?=PNO7A<0$rI,MW$H$7!"$= lO8=:_!"**pm3d** $G0lMwI=<($5lk=PNO7A<0$G;HMQ2DG=$G$9!#?'$NCM$NH<0O$O!"**set cbrange** $H**set log cb** $GFHN)$KD4@02DG=$G$9!#%+%i!<%Q%l%C%HA4BN$O**colorbox** Cf$KI=<(5l$^$9!#

=q<0:

```
set palette
set palette {
            { gray | color }
            { gamma <gamma> }
            {   rgbformulae <r>,<g>,<b>
              | defined { ( <gray1> <color1> {, <grayN> <colorN>}... ) }
              | file '<filename>' {datafile-modifiers}
              | functions <R>,<G>,<B>
            }
            { cubehelix {start <val>} {cycles <val>} {saturation <val>} }
            { model { RGB | HSV | CMY | YIQ | XYZ } }
            { positive | negative }
```

```
            { nops_allcF | ps_allcF }
            { maxcolors <maxcolors> }
          }
    show palette
    show palette palette <n> {{float | int}}
    show palette gradient
    show palette fit2rgbformulae
    show palette rgbformulae
    show colornames
```

set palette $O($9Jo$A%*%W%7%g%s$J7G$O) %G%U%)%k%H$NCM$r@_Dj$7$^$9!#$=$l0J30$N>19g!"%*%W%7%g%s$OG$0U$N=g$KM?$(k3H,G-$^$9!#**show palette** $O!"8=:_$N%Q%l%C%H$NB0@-$rI=<(7^$9!#

show palette gradient $O!"%Q%l%C%H$N8{G[(gradient) $NDj5A$,($=$l$,E,@Z$G$"$l$P) I=<($5l^$9!#**show palette rgbformulae** $O!"Dj5A:Q$GMxMQG-$k!"3%?'CM$+$i%+%i!<$X$NUQ498x<0$,I=<(5l$^$9!#**show colornames** $O!"G'<1$G$-$k?'L>$rI=<($7$^$9!#

show palette palette <n> $O!"<n> 8D$NN%;6E*$J?'$r;}$D%Q%l%C%H$N!"8=:_$N%Q%l%C%H$N@_DjKhCF7W;;5l$k RGB NCMNAH$H%Q%l%C%H$NI=$r!"2hLL!"$^$?$O**set print** $G;XDj$5l?%U%!%$%k$K=q$-=P$7$^$9!#%G%U%)%k%H$N9-$$I=$O!"DI2C$N%*%W%7%g%s float $^$?$O int KhCF!"3Ns$N[0..1] $N<B?tCM$@1K9k$+[0..255] $N@0?tCM$@1K9k$+$r$=$l$>$l;XDjG-$^$9!#3NJ}K!$G gnuplot $N%+%i!<%Q%l%C%H$r!"Octave Nh$&$JB>$N2hA|%"%W%j1!<%7%g%s$KEO$9$3H,G-$^$9!#3NB>Kb!"%3%^%s%I **test palette** $G!"8=:_$N%Q%l%C%H$N R,G,B @.J,$NBP1~>uBV(profile) $rIA2h$7$=$NCM$r%G!<%?%V%m%C%/$PALETTE $K;D$5$;$k3HbG$-$^$9!#

0J2<$N%*%W%7%g%s$O!"?'IU1NB0@-$r7hDj$7$^$9!#

3N%Q%l%C%H$r;HMQ$9$k?^$O!"**gray** $+**color** KJj^$9!#Nc$($P!"**pm3d** %+%i!<6JLlGO!"HO0O[min_z,max_z] $,3%?'$NHO0O[0:1] $KBP1~$7$F$$$F!"Hy>.6JLL;M3Q7A$N4 DN3Q$Nz :BI8$NJ?6QCMr3$NHO0ONCfKBP1~5;$k3H$G3FHy>.ItJ,$N3%?'$NCM(gray) $,F@$il^$9!#$3NCMO!"3%?'3,D4$N?'CO?^$G$N3%?'$NCMH7$ED>@\;H$&3H$,$G$-$^$9$7!"%+%i!<$N?'CO?^$G$O!"$=$N3%?'$NCM$+$i(R,G,B) XNUQ49!"9JoA[0:1] $+$i([0:1],[0:1],[0:1]) XN<IA|$,;H$ol^$9!#

4pK\E*$K!"2<oN‘$N0[Jk<IA|J}<0$,MxMQ2DG=$G$9:1 DO3%?'$+$i%+%i!<XN2r@CE*$J8x<0!"b&01DON%;6E*$JBP1~I=$NJd4V$KhkbN$G$9!#**palette rgbformulae** $H**palette functions** $,2r@CE*$J8x<0MQ$G!"**palette defined** $H**palette file** $,Jd4VI=MQ$G$9!#**palette rgbformulae** $Opostscript =PNO$N%5%$%:$r>.5/9k3H$,$G$-$^$9!#

%3%^%s%I **show palette fit2rgbformulae** $O!"8=:_$N **set palette** $K:G$bNI$/BP1~$9$k **set palette rgbformulae** $r8+$D$1=P$7$^$9!#EvA3!"$=$l$O rgbformulae %Q%l%C%H0J30KBP7Fb0UL#$r;}$A$^$9!#3N%3%^%s%I$O<g$K!"%Q%l%C%H$N rgbformulae Dj5A$,gnuplot $HF1$8J*$r;H$C$F$$$k30It%W%m%0%i‘!"Nc$($P zimg JIKHCEM-MQ$G$9(

http://zimg.sourceforge.net

)!#

set palette gray $O!"3%?'3,D4$N$_$N%Q%l%C%H$K$7!"**set palette rgbformulae**, **set palette defined**, **set palette file**, **set palette functions** $O%+%i!<%Q%l%C%H$K7^$9!#3%?'%Q%l%C%H$+$iD>A0$N%+%i!<%Q%l%C%H$X!"**set palette color** $G4JC1$KI|5"G-$^$9!#

set palette gamma <gamma> Kh$k<+F0E*$J%,%s%^Jd@5$O!"3%?'$N%Q%l%C%H(**set palette gray**) $H!"**cubehelix** %+%i!<%Q%l%C%H7A<0$K9T$ol^$9!#gamma = 1 $N>19g$O!"@~7A$N8wEY8{G[$r@8@.7^$9!#0J2<;2>H**test palette (p. 191)**!#

=PNO7A<0$NB?$/$O!"M-8B8D$N?'?t7+%5%]!<%H7F$$^;$s(Nc$($P gif GO256 8D)!#%G%U%)%k%H$N gnuplot $N@~<o?'$r3djEvF$?8e$N;DjNM-8z$J?'NN0h$O!"%G%U%)%k%HGO pm3d MQ$KJ]B8$5l^$9!#$hCF!"J#?t$N%Q%l%C%H$r;HMQ9kh&$J multiplot $O!":G=i$N%Q%l%C%H$,$9YFNM-8z$J?'$NG[CVH7$F;HMQ$5lFkN$G!"<:GT$7F7$^$&G7g&!#3Nh&$J@)8B$O!"=~J,>.$5$$$CMN $G**set palette maxcolors <N>** $r;H$&3H$G4KOB$G$-$^$9!#$3$N%*%W%7%g%s$O!"N 8D$NN%;6E*$J?'$r!"O"B3E*$J%Q%l%C%H$+$iEy4V3V$J%5%s%W%j%s%0$GA*Br7^$9!#ITEy4V3V$JN 8D$NN%;6?'$r;H$$?$>19g$O!"01DNO"B3E*$J%Q%l%C%H$NBeoj$K**set palette defined** $r;HMQ$7F/$@$5$$!#

RGB ?'6u4V$,:n6H$r9T$&$N$K>o$KbCHbM-MQ$J?'6u4V$G$"$kHO8BiJ$$!"$H$$$&M}M3$G!"?'6u4V$O**model** $r;H$&3H$G!"**RGB**, **HSV**, **CMY**, **YIQ**, **XYZ** $N$$:l+$KJQ99$G$-$^$9!#RGB 0J30$N?'6u4VGO**set palette defined** $NI=$G?'L>$r;H$&$H!"$=lO*$+$7J?'KJj^$9!#A4$F$N@bL@$O RGB ?'6u4VMQ$K=q$$$F

$"$j$^$9$,!"$=l>lN?'6u4V$G!"Nc$($P **R** $O **H**, **C**, **Y**, **X** N3Hr0UL#9k3H$KCm0U$7F/$@$5$$(**G**, **B** $bF1MM)!#

A4FN?'6u4V$G!"A4$FNCMO [0,1] $K@)8B$5lF$$$^$9!#

RGB $O@V!"NP!"@D$r!"CMY $O?e?' (Cyan)!";g (Magenta)!"2+ (Yellow) $r!"HSV $O?'Aj (Hue)!":lEY (Saturation)!"L@EY (Value) r=l>$l0UL#$7$^$9!#YIQ $OA4JF>&6H%+%i!<%F%l%SJ|Aw6 (2q (the U.S. Commercial Color Television Broadcasting) $N;H$C$?%+%i!<%b%G%k$G!"RGB 5-O?J}<0$r85$K7F$$$^9,!"Gr9u%F%l%S$K BP$9$k8eJ}8_49@-$r;}CF$$$^$9!#XYZ $O CIE ('Commission Internationale de l'Eclairage'; 9q:]>HL@0Q0w2q) $,Dj5A$7$??'%b%G%k$N3 DN86;I7cCM$G$9!#?'%b%G%kNh$j>\$7$$>pJsKD$$F$O0J2<$r;2>H7F$/$@$5$$:

http://en.wikipedia.org/wiki/Color_space

Rgbformulae

rgbformulae MQKO 3 DNE,@Z$J3d$jEv$F4X?t$,A*PlkI,MW,$"$j$^$9!#3NA*Br$O **rgbformulae** <r>,<g>,<b> rDL7$F9T$ol^$9!#;H$&3H$,$G$-$k3djEvF4X?t$N0lMw$O **show palette rgbformulae** $G8+$k3H$,$G$-$^$9!#%G%U%)%k%H$O **7,5,15** $G!"B>$NNcH7FO **3,11,6**, **21,23,3**, **3,23,21** JI$,$"j^$9!# **3,-11,-6** Nh$&$JIiNCMO!"5U$N%+%i!<$r0UL#7^$9($9Jo$A!"1-gray r=$N4X?t$KBeF~7^$9)!#

RGB $N?'6u4V$G$O!"$$$/D+$NNI$$3djEvF8x<0$,$"j^$9:

```
7,5,15    ... EAE}E* pm3d (9u-@D-@V-2+)
3,11,6    ... NP-@V-;g
23,28,3   ... 3$ (NP-@D-Gr); B>$NAH$_9g$o$;$b;n$7$F$_$F$/$@$5$$
21,22,23 ... 29EY?' (9u-@V-2+-Gr)
30,31,32 ... Gr9u$N%+%i!<I=<(2= (9u-@D-;g-2+-Gr)
33,13,10 ... Fz (@D-NP-2+-@V)
34,35,36 ... AFM 29EY?' (9u-@V-2+-Gr)
```

HSV ?'6u4VGN%U%k%+%i!<%Q%l%C%H:

```
3,2,2     ... @V-2+-NP-?e?'-@D-;g-@V
```

rgbformulae $H$$$&L>A0$G8F$PlF$$$F$b!"Nc$NDL$j!"$=li$N4X?t$O<B:]KO <H>,<S>,<V> $^$?$O <X>,<Y>,<Z>, ... $H$$$C$??'$N@.J,$r7hDj$9k+b7lJ$$$H$$&3H$KCm0U$7F/$@$5$$!#

?^$N?'$rH?E>5;kK$O **positive** $d **negative** $r;H$CF/$@$5$$!#

B>$N?'BN7O$KBP9k:G$bNI$$rgbformulae $N=89g$O!"0J2<$N%3%^%s%I$G8+Dlk3H,G-k3Hr3P$($F$*$$$F$/$@$5$$!#

```
show palette fit2rgbformulae
```

Defined

3%?'$+$i RGB XNBP1~$O **palette defined** $r;H$&3H$G<jF0$G@_DjG-$^$9:?'8{G[(gradient) $O RGB $N CM$rM?$($k$?$a$KDj5A$5$l;HMQ$5l^$9!#8{G[$O!"[0,1] $N3%?'CM$+$i [0,1]x[0,1]x[0,1] $N RGB 6u4V$X$N!"6h J,E*$K@~7A$J<IA|$G$9!#$=$N@~7AJd4V$K;Hol$k3%?'CM$H RGB CMNAHr;XDj9kI,MW$,$"j^$9:

=q<0:

```
set palette  defined { ( <gray1> <color1> {, <grayN> <colorN>}... ) }
```

<grayX> $O [0,1] $K3d$jEvFilkY-3%?'CM$G!"<colorX> O=lKBP1~9k RGB ?'$G$9!#%+%i!<CM$O3 <dN'$NJ}K!$G;XDj$9k3H,G-$^$9:

```
<color> :=  { <r> <g> <b> | '<color-name>' | '#rrggbb' }
```

@V!"NP!"@D$KBP1~$9$k6uGr$G6h@Zil$?3 DNCM($=l>$l [0,1] Fb)!"0zMQIdG/$/$il??'L>!"$^$?$O0zMQIdG/$/il$?X 7A<0$N;XDjJ}<0!"$N$$:l+$G$9!#8{G[$NDj5A$G$O!"$3li$N3 <o$N7?$r<+M3$KAH$_9g$o$;$k3H$,$G$-$^$9,!"?'6u4V$H7F RGB GJ$$bN,A*Br5l$?>19g?'L>"red" $O>/$70cC?bNKJkG7g$&!#;HMQ$G$-$k?'L>$O **show colornames** G=$N0lMw$r8+k3H,G-$^$9!#

<r> $H=q$$$F$b!"HSV ?'6u4V$GO=lO<H> @.J,$r!"CIE-XYZ 6u4V$G$O<X> $r!"$H$$$C$?$h$&$KA*Br5l$?%+%i!<%b%G%k$K0MB8$7$F0UL#$,0c$&3H$KCm0U$7F/$@$5$$!#

<gray> NCMO<B?t$N>:=g$KJBYkI,MW$,$"j^$9!#$=NNsNCM$O<+F0E*$K[0,1] $KJQ49$5l^$9!#

%+%C%3D-$N8{G[$NDj5AJ7$G**set palette defined** H7$?>19g!"RGB ?'6u4V$K$7!"$"i+8a@_Dj5l$?%U%k%9%Z%/%H%k?'8{G[$r;HMQ7^$9!#8{G[$rI=<(9kKO**show palette gradient** $r;HMQ$7F/$@$5$$!#

Nc:

3%?'$N%Q%l%C%H(Lr$KN)$?$J$$$,6571E*$J) $r@8@.$9kK$O:

```
set palette model RGB
set palette defined ( 0 "black", 1 "white" )
```

@D2+@V$N%Q%l%C%H(A4$F$,Ey2A$N) $r@8@.$9kK$O:

```
set palette defined ( 0 "blue", 1 "yellow", 2 "red" )
set palette defined ( 0 0 0 1, 1 1 1 0, 2 1 0 0 )
set palette defined ( 0 "#0000ff", 1 "#ffff00", 2 "#ff0000" )
```

FzNh$&$J%Q%l%C%H$r@8@.$9kK$O:

```
set palette defined ( 0 "blue", 3 "green", 6 "yellow", 10 "red" )
```

HSV ?'6u4VGN%U%k%+%i!<%9%Z%/%H%k:

```
set palette model HSV
set palette defined ( 0 0 1 1, 1 1 1 1 )
set palette defined ( 0 0 1 0, 1 0 1 1, 6 0.8333 1 1, 7 0.8333 0 1)
```

MATLAB $G;H$olk%G%U%)%k%H%Q%l%C%H$N6a;w:

```
set pal defined (1 '#00008f', 8 '#0000ff', 24 '#00ffff', \
                 40 '#ffff00', 56 '#ff0000', 64 '#800000')
```

Ey4V3V$J>/$7$N?'$@1N%Q%l%C%H$r@8@.$9kK$O:

```
set palette model RGB maxcolors 4
set palette defined ( 0 "yellow", 1 "red" )
```

'8rDL?.9f'(3ji+GOJ/gray = 1/3, 2/3 $GD7$S$r;}$D):

```
set palette model RGB
set palette defined (0 "dark-green", 1 "green", \
                     1 "yellow",     2 "dark-yellow", \
                     2 "red",        3 "dark-red" )
```

Functions

?'$N3d$jEv$F$$NR(gray), G(gray), B(gray) $N3 DN4X?t$rM?$(kK$O**set palette functions <Rexpr>, <Gexpr>, <Bexpr>** $r;H$CF/$@$5$$!#$=$liN3 DN4X?t$NUQ?t$O!"[0,1] NCMr<h$kJQ?t **gray** G"$j!"$=NCMb[0,1] NCfK<hkI,MW,$"j^$9!#<Rexpr> $O!"HSV ?'6u4V$,A*Br5l$F$$$k>19g$O!"H NCMrI=$9<0$GJ1lP$$$1$J$$$3HKCm0U7F$/$@$5$$(B>$N<0!"$^$?$OB>$N?'6u4V$G$bF1MM$G$9)!#

Nc:

%U%k%+%i!<%Q%l%C%H$r@8@.$9kK$O:

```
set palette model HSV functions gray, 1, 1
```

9u$+$i6b?'XNNI$$%Q%l%C%H:

```
set palette model XYZ functions gray**0.35, gray**0.5, gray**0.8
```

%,%s%^Jd@5$NGr9u$N%Q%l%C%H:

```
gamma = 2.2
color(gray) = gray**(1./gamma)
set palette model RGB functions color(gray), color(gray), color(gray)
```

Gray

set palette gray $O!"0.0 = 9u$+$i 1.0 = Gr$X$N3%?'3,D4(%0%l%$%9%1!<%k) %Q%l%C%H$K@Z$jBX$($^$9!#3%?'3,D4%Q%l%C%H$+$i!"D>A0$N%+%i!<%Q%l%C%HK^$?La$9KO!"**set palette color** H9kN$,4JC1$G$9!#

Cubehelix

%*%W%7%g%s "cubehelix" O"$k%Q%l%C%HB2$rDj5A7^9,!"3l$O!"3%?'3,D4CM$,0 $+$i 1 $KA}2C$9kN$KH<$J$$!"@5L#$N8wEY$,C1D4$KA}2C$9kN$HF1;~$K!"?'Aj(hue) $,I8=`?'Aj4D$K=>CFUQ2=7^$9!#

```
D A Green (2011) http://arxiv.org/abs/1108.5083
```

start $O!"?'Aj4D$K1hC?3+;OE@$r%i%8%"%sC10L$G7hDj7^$9!#**cycles** $O!"%Q%l%C%H$NHO0OrEOC$F?'Aj4D$r2?2s2sk+$r7hDj$7$^$9!#**saturation** (:LEY) $,Bg$-$$$H!"hj$"$6d+$J?'$KJj$^$9!#1 hjBg$-$$:LEY $O!"8D!9$N RGB @.J,$r%/%j%C%T%s%0$9k3HKJj!"8wEY$OC1D4$GOJ$/$JCF7^$$^$9!#**set palette gamma** $b%Q%l%C%H$K1F6A$rM?$(B$^$9!#%G%U%)%k%HCM$O0J2<$NDLjG$9!#

```
set palette cubehelix start 0.5 cycles -1.5 saturation 1
set palette gamma 1.5
```

File

set palette file $O4pK\E*$K**set palette defined (<gradient>)** $HF1$8$G!"$3$N<gradient> $,%G!<%?%U%!%$%k$+$iFI$_9~$^l^$9!#4 Ns(gray, R,G,B) $+$^$?$O3 Ns(R,G,B) $N%G!<%?$, **using** %G!<%?%U%!%$%k=$>~;RKhCFA*Br5lkI,MW,$"$j$^$9!#3 Ns$N>19g!"9THV9f$, gray NCMH7F;Hol$^$9$,!"$=$N gray $NHO0O$O<F'OE*$K[0,1] $K%9%1!<%kJQ49$5l^$9!#%U%!%$%k$OD>o$N%G!<%?%U%!%$%k$H7FFI$^$lkN$G!"A4$F$N%G!<%?%U%!%$%k=$>~;R$,;H$($^$9!#Nc$($P HSV ?'6u4V$,A*Br5l$F$$$k>19gKO!"**R** $O<B:]$K$O **H** $r;X$9$H$$$&3H$KCm0U$7F/$@$5$$!#

NcKhCF!"<filename> $,**'-'** $N>19g$O!"%G!<%?$,%$%s%i%$%s7A<0$G0z$-B3$$FM?$($i$l!"0l$D$N**e** N_$N9TG=l,=*N;$9k3Hr0UL#7^$9!#

8{G[(gradient) $rI=<($9kK$O**show palette gradient** $r;HMQ$7F/$@$5$$!#

Nc:

RGB $N%Q%l%C%H$r[0,255] $NHO0O$GFI$_9~$`:

```
set palette file 'some-palette' using ($1/255):($2/255):($3/255)
```

Ey5wN%$NFz?'(@D-NP-2+-@V) %Q%l%C%H:

```
set palette model RGB file "-"
0 0 1
0 1 0
1 1 0
1 0 0
e
```

%P%$%J%j%Q%l%C%H%U%!%$%k$bF1MM$K%5%]!<%H5l$F$$$^$9!#0J2<;2+H:**binary general (p. 81)**!#R,G,B $N double $N%G!<%?$N64 8D$N3 DAHr%U%!%$%kpalette.bin $K=PNO$7!"$=$lrFI_9~$`Nc:

```
set palette file "palette.bin" binary record=64 using 1:2:3
```

%,%s%^Jd@5 **(gamma correction)**

3%?'$NG[?'$KBP9k%,%s%^Jd@5$O**set palette gamma** <**gamma**> $GON KG$-$^$9!#<gamma> $N%G%U%)%k%H$O1.5 $G!"$3lOB?$/$N=PNO7A<0$KE,@Z$JCM$G$9!#

%,%s%^Jd@5$O!"cubehelix %+%i!<%Q%l%C%H7A<0KOE,MQ5l$^$9$,!"B>$N?'7A<0KOE,MQ5l$^$;$s!#$7$+$7!"L@<(E*$J?'4X?t$K%,%s%^Jd@5$r<BAu$9kNOFq7$/$"j^$;$s!#

Nc:

```
set palette model RGB
set palette functions gray**0.64, gray**0.67, gray**0.70
```

```
set palette defined ( 0 0 0 0, 1 1 1 1 )
```

```
set palette defined ( 0 0 0 0, 0.5 .73 .73 .73, 1 1 1 1 )
```

Postscript

postscript **nops_allcF** **ps_allcF** **origin** **size** **multiplot** **pm3dCompress.awk** **pm3dConvertToImage.awk**

```
awk -f pm3dCompress.awk thefile.ps >smallerfile.ps
awk -f pm3dConvertToImage.awk thefile.ps >smallerfile.ps
```

Pointinterval (pointintervalbox)

pointinterval **linespoints** **set pointintervalbox**

(pointsize)

set pointsize

```
set pointsize <multiplier>
show pointsize
```

plot **with** (p. 100)

(polar)

set polar

```
set polar
unset polar
show polar
```

6K:BI8%b!<%IGO!"2>JQ?t(t) $O3QEY$rI=7^$9!#t $N%G%U%)%k%H$NHOOO$O[0:2*pi] G9$,!"C10L$H7FEY$,A*Br$5lF$$$l$P[0:360] HJj^$9(0J2<;2>H **set angles (p. 106)**)!#

%3%^%s%I **unset polar** $OIA2hJ}K!$r%G%U%)%k%H$Nxy D>8r:BI87O$KLa7^$9!#

set polar %3%^%s%I$O **splot** GO%5%]!<%H5l$F$$$^$;$s!#**splot** KBP9$kF1MM$N5!G=$K4X$7FO!"0J2<;2>H **set mapping (p. 137)**!#

6K:BI8%b!<%IGOt $N?t<0$N0UL#$Or=f(t) HJ$j!"t $O2sE>3Q$HJj$^$9!#trange $O4X?t$NDj5A0h(3QEY) $r@)8f$7!"trange, xrange, yrange O=l>$l%0%i%U$Nx,y J}8~$NHOOO$r@)8f9k3HKJj^$9!#$3li$NHOOO$Hrrange $O<+F0E*$K@_Dj5lk+!"$^$?$OL@<(E*$K@_DjG-$^$9!#>\:Y$K4X$7FO!"0J2<;2>H **set rrange (p. 159)**, **set xrange (p. 176)**!#

Nc:

```
set polar
plot t*sin(t)
set trange [-2*pi:2*pi]
set rrange [0:3]
plot t*sin(t)
```

:G=i$N **plot** $O%G%U%)%k%H$N3QEY$NHOOO$N0 $+$i 2*pi $r;H$$$^$9!#F07BJ}8~$H%0%i%U$N%5%$:$O<+F0E*$K?-=L5l$^$9!#2 HVL\$N **plot** $O3QEY$NDj5A0h$r3HD%$7!"%0%i%U$N%5%$:$r86E@$+$i3 $NI}$K@)8B7^$9!#$3lO x,y N=l>lNJ}8~$r[-3:3] $K@)8B$9k3HKJj$^$9!#

set size square H9kH **gnuplot** $O%"%9%Z%/%HHf(=D2#$NHf) $r1 K9kN$G1_$,(BJ1_GJ$/)1_$K8+$($kh&KJj^$9!#0J2<b;2>H

```
6K:BI8$N%G%b (polar.dem)
```

$*$h$S

```
6K:BI8%G!<%?$NIA2h (poldat.dem)!#
```

Print %3%^%s%I$N=PNO@h (print)

%3%^%s%I **set print** $O **print** %3%^%s%I$N=PNO$r%U%!%$%k%K%j%@%$%l%/%H$7$^$9!#

=q<0:

```
set print
set print "-"
set print "<filename>" [append]
set print "|<shell_command>"
set print $datablock [append]
```

%Q%i%a!<%?J7$N **set print** $O!"=PNO$r<STDERR> $KI|5"$5$;$^$9!#"-" $H$$&<filename> $O<STDOUT> $r0UL#$7$^$9!#**append** %U%i0$O%U%!%$%k$rDI2C(append) %b!<%I$G3+$/$3Hr0UL#7^$9!#%Q%$%W$r%5%]!<%H$9$k%W%i%C%H%[!<%'>e$G$O!"<filename> $,"|" $G;O$^CF$$$?$i!"<shell_command> XN%Q%$%W$,3+$+l^$9!#

%3%^%s%I **print** $NBP>]$OL>A0IU$-%G!<%?%V%m%C%/$G$b9=$$$^$;$s!#%G!<%?%V%m%C%/L>O'' $G;O$^j^$9!#0J2<;2>H **inline data (p. 88)**!#

PostScript Dj5A%U%!%$%k%Q%9(psdir)

%3%^%s%I **set psdir** <**directory**> $O!"postscript =PNO7A<0$,prologue.ps $dJ8;z%(%s%3!<%IMQ$N%U%!%$%k$rC5$9$N$K;HMQ$9$k8!:w%Q%9$r@)8f7^$9!#$3$N;EAH$_$O!"UL$K%m!<%+%k%K%9%?%^%$:$7$?prolog %U%!%$%k72$H@Z$jBX$($kNK;H$($^$9!#8!:w$N=gHV$O0J2<$Nh&KJCF$$$^$9!#

1) ‘set psdir‘ $r;XDj$7$?>l9g$O$=$N%G%#%l%/%H%j

2) 4D6-JQ?t GNUPLOT_PS_DIR $G;XDj$7$?%G%#%l%/%H%j
3) AH$_9~$^l?%X%C%@!<!"$^$?$O%G%U%)%k%H$N%7%9%F%`%G%#%l%/%H%j
4) ‘set loadpath‘ $G;XDj$7$?%G%#%l%/%H%j

6K:BI8$NF07B<4 (raxis)

%3%^%s%I **set raxis** $H **unset raxis** $O!"F07B<4$r3J;R@~$Hx<4$+$iJ,N%$7$FIA2h$9k+I&$+$r@ZjBX($^$9!#8=:_$Nrrange $N:G>.CM$,0 GJ$$($=$7$F<+F0=L<\$G$J$$)>19g!"%0%i%U$H<4$,86E@$KC#$7$J$$3Hr<($9Gr4]$,6K:BI8%0%i%U$NCf?4$KIA$+$l$^$9!#<4$N@~$O!"%0%i%U$N6-3&$HF1$8@~<o$GIA2h5l$^$9!#0J2<;2>H: **polar (p. 157)**, **rrange (p. 159)**, **rtics (p. 159)**, **set grid (p. 127)**!#

Rmargin

%3%^%s%I **set rmargin** $O1&$NM>Gr$N%5%$%:$r%;%C%H$7$^$9!#>\:Y$O!"0J2<;2>H: **set margin (p. 138)**!#

Rrange

%3%^%s%I **set rrange** $O6K:BI8%b!<%I$N%0%i%U$NF07BJ}8~$NHCO0C$r@_Dj$7$^$9!#3l$O xrange $H yrange $NN>J}$b@_Dj7F7^$$$^$9!#N><T$O!"[-(rmax-rmin) : +(rmax-rmin)] KJj^$9!#$7$+$7!"3l$N8e$G xrange $d yrange $rJQ99$7Fb(Nc$($P3HBg9k$?$a$K)!"$=lO rrange $rJQ99$7$J$$$N$G!"%G!<%?$E@$O rrange $K4X$7$F%/%j%C%T%s%0$5l?$^$^HJj^$9!#rmin $K4X$9$k<+F0=L<\$O>o$K rmin = 0 HJj^$9!#Cm0U: rmin rIiNCM$r@_Dj$9kH!"M=4|$;$L7k2L$r@8$'2DG=@-$,$"j^$9!#

Rtics

%3%^%s%I **set rtics** $O!"F07B<4$K1hCFL\@9jrG[CV7^$9!#$3lO!"6K:BI8%b!<%IGN$_I=<($5l^$9!#L\@9$jH=$N8+=P$7$O86E@$N1&B&KIA+l^$9!#%-!<%o!<%I **mirror** $O!"$=li$r86E@$N:8B&KbIA$-$^$9!#$=$NB>$N%-!<%o!<%I$K4X$9kOCK$D$$F$O0J2<;2>H: **polar (p. 157)**, **set xtics (p. 177)**,**set mxtics (p. 143)**!#

%5%s%W%k?t (samples)

4X?t!"$^$?$O%G!<%?$NJd4V$K4X$9$k%G%U%)%k%H$N%5%s%W%j%s%0?t$O!"%3%^%s%I **set samples** $GJQ99$G$-$^$9!#8D!9$N%0%i%U$NIA2hHCO0(sampling range) $NJQ99$O!"0J2<;2>H: **plot sampling (p. 98)**!#

=q<0:

```
set samples <samples_1> {,<samples_2>}
show samples
```

%G%U%)%k%HGO%5%s%W%k?t$O100 E@$H@_Dj5l$F$$$^$9!#$3NCMrA}d9Hh$j@53N$JIA2h$,=EMh$^9,CY$/$Jj^$9!#$3$N%Q%i%a!<%?$G!<%?%U!"%$%k%F6A$bM?$($^$;$s$,!"Jd4V/6a;w$N%*%W%7%g%s$,;H$olF$$$k>19gO=$N8B$jGO"j^$;$s!#2<!85IA2hKD$$F$O **plot smooth** $r!"3<!85IA2h$K4X7F$O!"0J2<;2>H: **set dgrid3d (p. 120)**!#

2<!85$N%0%i%UIA2h$,9TJolkH-$O<samples_1> NCMN$_$,4X78$7$^$9!#

1#@~=hM}J7$G6JLLIA2h$,9TJolkH-$O!"samples NCMO8IN)@~Kh$KI>2A$5lk%5%s%W%k?t$N;XDjKJj^$9!#3F v-8IN)@~$O<samples_1> 8D$N%5%s%W%kE@$r;}$A!"u-8IN)@~$O<samples_2> 8D$N%5%s%W%k?t$r;}A^$9!#<samples_1> N_;XDj9k$H!"<samples_2> NCMO<samples_1> $HF1$8CM$K@_Dj$5l^$9!#0J2<;2>H: **set isosamples (p. 129)**!#

%0%i%UNN0h%5%$%:(size)

=q<0:

```
set size {{no}square | ratio <r> | noratio} {<xscale>,<yscale>}
show size
```

<xscale> $H <yscale> $OIA2hA4BN$N3HBg$NG\N($G!"IA2hA4BNHO%0%i%U$H%i%Y%k$HM>Gr$NItJ,$r4^$_$^$9!#

=EMW$JCm0U:

```
gnuplot $N0JA0$NHG$G$O!"‘set size‘ $NCM$r!"=PNO$9$kIA2hNN0h
(%-%c%s%P%9) $N%5%$%:$r@)8f$9$k$N$K$b;H$C$F$$$?=PNO7A<0$b$"$j$^
$7$?$,!"$9$Y$F$N=PNO7A<0$,$=$&$@$C$?$o$1$G$O$"$j$^$;$s$G$7$?!#
8=:_$O!"$[$H$s$I$N=PNO7A<0$,0J2<$N%k!<%k$K=>$$$^$9:
```

set term <terminal_type> size <XX>, <YY> $O!"=PNO%U%!%$%k$N%5%$%:!"$^$?$O"%-%c%s%P%9" $N%5%$%:$r@)8f$7$^$9!#%5%$%:%Q%i%a!<%?$NM-8zJCMK$D$$$F$O!"8D!9$N=PNO7A<0$N%X%k%W$r;2>H7F$/$@$5$$!#%G%U%)%k%HGO!"%0%i%U%O%-%c%s%P%9A4BN$KIA2h$5$1$^$9!#

set size <XX>, <YY> $O!"IA2h<+BN$r%-%c%s%P%9$N%5%$%:KBP7$FAjBPE*$K?-=L5;$^$9!#1 hj>.$5$$?-=LCM$r;XDj$9kH!"%0%i%U%O%-%c%s%P%9A4BNrKda$:!"1 hjBg$-$$?-=LCM$r;XDj$9kH!"%0%i%U%N0lItJ,N_$,%-%c%s%P%9A4BN$K9g$&$h$&$KIA2h$5$1$^$9!#1 hjBg$-$$?-=LCM$r;XDj$9kH!"$"$k=PNO7A<0GOLdBj$,5/$3k+b7$1$J$$$3HKCm0U7F$/$@$5$$!#

ratio $O!";XDj$7$?<xscale>, <yscale> $NIA2hHO0CFb$G!"%0%i%U%N%"%9%Z%/%HHf(=D2#Hf) $r<r> K7$^$9(<r> $Ox J}8~$ND9$5$KBP9ky J}8~$ND9$5$NHf)!#

<r> NCMrIiK9kH$=$N0UL#$C0c$CFMh^$9!#<r>=-1 NH$-!"x <4!"y <4$NAPJ}$NC10L(D^$j1) $NL\@9$j$ND9$5$,F101$KJkh&@_Dj$5$1$^$9!#3$1$O**set view equal xy** $HF1$8$G$9!#0J2<;2>H: **set view equal (p. 173)**!#<r>=-2 NH$-!"y <4$NC10LL\@9jND9$5$Ox <4$NC10LL\@9$j$ND9$5$N2 G\$K@_Dj$5$1$^$9!#<r>$,Ii$NCM$K4X$7$F0J2<F1MM$G$9!#

gnuplot $,;XDj$5$1$?"%9%Z%/%HHf$N%0%i%U$rAcsH=q1k$+$OA*Br$5$1$k=PNO7A<0$K0MB8$7$^$9!#%0%i%U$NNN0h$O=PNO$N;XDj$5$1$?ItJ,$KAcsH<}$^$j!"%"%9%Z%/%HHf$,<r> G"kh$&$J:GBg$ND9J}7AHJj^$9(bAmsE,Ev$JM>Gr$b;D7^9,)!#

set size square $O**set size ratio 1** $HF1$80UL#$G$9!#

noratio $H**nosquare** $O$$:1b%0%i%Ur=$N=PNO7A<0(terminal) GN%G%U%)%k%H$N%"%9%Z%/%HHf$KLa7^9,!"<xscale> $H<yscale> O=$N%G%U%)%k%H$NCM(1.0) KOLa7^$;$s!#

ratio $H**square** $O3<!85IA2h$G$O0UL#$r;}A^$;$s$,!"**set view map** $r;HMQ$7$?3<!85IA2h$N2<!85<M1FKO1F6A$rM?$($^$9!#0J2<$b;2>H:**set view equal (p. 173)**!#$3$1$O!"3<!85$Nx <4$Hy <4$r6/@)E*$KF1$8%9%1!<%kK7$^$9!#

Nc:

%0%i%U$,8=:_$N%-%c%s%P%9rKdakh$&$JBg$-$5$K@_Dj$7$^$9:

```
set size 1,1
```

%0%i%U$rDL>c$NH>J,NBg-5G@5J}7AK7$^$9:

```
set size square 0.5,0.5
```

%0%i%U$N9b$5$r2#I}$N2G\$K7^$9:

```
set size ratio 2
```

IA2h%9%?%$%k@_Dj (style)

%G%U%)%k%H$NIA2h%9%?%$%k$O!"**set style data** $H**set style function** $G@_Dj$G$-$^$9!#1X?t$d%G!<%?%N%G%U%)%k%H$NIA2h%9%?%$%k$r8D!9$KJQ9X9$kJ}K!$K$D$$F$O!"0J2<;2>H: **plot with (p. 100)**!#%9%?%$%k$N0lMwA4BN$O!"0J2<;2>H: **plotting styles (p. 47)**!#

=q<0:

```
set style function <style>
set style data <style>
show style function
show style data
```

;XDjG-$kIA2hMWAG$N%G%U%)%k%H%9%?%$%k$b@_DjG-$^$9!#

=q<0:

```
set style arrow <n> <arrowstyle>
set style boxplot <boxplot style options>
set style circle radius <size> {clip|noclip}
set style ellipse size <size> units {xy|xx|yy} {clip|noclip}
set style fill <fillstyle>
set style histogram <histogram style options>
set style line <n> <linestyle>
set style rectangle <object options> <linestyle> <fillstyle>
set style textbox {opaque|transparent} {{no}border}
```

Lp0u%9%?%$%k@_Dj **(set style arrow)**

3F=PNO7A<0OLpdE@$N7A$N%G%U%)%k%H$N=89g$r; }CF$$F!"$=$1$O%3%^%s%I **test** $G;2>H$G$-$^$9!#**set style arrow** OLpN7A!"I}!"E@$N7A!"%5%$%:$rDj5A$7!"$=$1ir8e$G;H$&H-$K$$A$$AF1$8>pJs$r7+jJV7$F;XDj$7J/Fb%s%G%C%/%9$G;2>H$G$-$kh&K7$^$9!#

=q<0:

```
set style arrow <index> default
set style arrow <index> {nohead | head | heads}
                        {size <length>,<angle>{,<backangle>} {fixed}}
                        {filled | empty | nofilled | noborder}
                        {front | back}
                        { {linestyle | ls <line_style>}
                          | {linetype | lt <line_type>}
                            {linewidth | lw <line_width}
                            {linecolor | lc <colorspec>}
                            {dashtype | dt <dashtype>} }
set style arrow
show style arrow
```

<index> $O@0?t$G!"$=$1GLpN%9%?%$%k(arrowstyle) $rFCDj$7$^$9!#

default $r;XDj$9kH!"A4FNarrow %9%?%$%k%Q%i%a!<%?$O$=$N%G%U%)%k%HNCMKJj$^$9!#

<index> $Narrowstyle $,4{$KB8:_9k>19g!"B>$NA4$F$OJ]B8$5$1$?$^$^!"M?$($i1?%Q%i%a!<%?N_$,JQ99$5$1$^$9!#<index> $,B8:_$7J1lP!";XDj$5$1J+C?CM$O%G%U%)%k%H$NCMKJj^$9!#

nohead $r;XDj$9k3HG!"Lp@hNJ$$Lp!"9JoA@~J,$r=q$/3HbG$-$^$9!#$3$1$OIA2h$N>e$K@~J,rIA/JI$JJ}K!$rM?$($^$9!#%G%U%)%k%H$G$O1$D$NLp@h$,$D$$F$$^$9!#**heads** $N;XDj$G@~J,$NN>C<$KLp@h$,IA$+1^$9!#

Lp@hNBg-5O**size** <**length**>,<**angle**> $^$?$O**size** <**length**>,<**angle**>,<**backangle**> $G@)8f$G$-$^$9!#<**length**> $OLp@h$N3F;^$ND9$5$G!"<**angle**> $OLp@h$N;^$HLp<4$,J93QEY(C10L$OEY) $G$9!#<**length**> $NC10L$Ox<4$HF1$8G9$,!"$=1O<**length**> $NA0$K**first**, **second**, **graph**, **screen**, **character** rD1k3H$GJQ99$G$-$^$9!#\: Y$O!"0J2<;2>H: **coordinates (p. 24)**!#

%G%U%)%k%HGO!"HF$bC;$$Lp$NLp@h$O.5/7^9,!"$3$1$O!"**size** %3%^%s%I$N8emK**fixed** $r;H$&3H$GL58z$KG-$^$9!#

<**backangle**> $O!"Lp@h$N8emNItJ,$NLp<4$H$N@Z$j3Q(<**angle**> $HF1$8J}8~!"C10L$OEY) KJj^9,!"%9%?%$%k$, **nofilled** $N>19g$O$3$1$rL5;k$7$^$9!#

filled $r;XDj$9kH!"Lp@h$N2s$j$N@~(6-3&@~) rIA-!"Lp@hrEIjDV7^$9!#**noborder** $r;XDj$9kH!"Lp@hOEIjDV7^9,!"6-3&@~OIA-$^$;$s!#$3$N>19g!"Lp@h$N@hC<$,%Y%/%H%k$N=*E@%T%C%?jN>l=jKCV+$1!"$=$NLp@h$OA4BNH7$F>/$7>.5/Jj$^$9!#E@@~GLprIA$/>19g$O!"E@@~$N6-3&@~$O1x$$$N$G!">o$K**noborder** $r;H$&Y-$G$9!#Lp@hNEIjDV7O!"9YFN=PNO7A<0$,%5%]!<%H$7$F$$kHO8Bj^$;$s!#

@~<o$O%f!<%6$ND j5A7?i%$%s%9%?%$%k$N%j%9H$+$iA*$V3HbG$-$^$9$7(0J2<;2>H: **set style line (p. 164)**)!"MQ0U$5$1$F$$$k <**line_type**> $NCM(%G%U%)%k%H$N%i%$%s%9%?%$%k$N%j%9H$NHV9f) $=$7$F<**linewidth**>(%G%U%)%k%H$NI}$NG\?t) $r;H$CF3$3$GDj5A9k3HbG$-$^$9!#

7+$7!"%f!<%6!<D j5A:Q$N%i%$%s%9%?%$%k,A*Br$5$1$?>19g!"$=$NB0@-(@~<o!"I}) $O!"C1$KB>$N**set style arrow** %3%^%s%IGE,EvJHV9f$d**lt**, **lw** JI$r;XDj$7Fb!"JQ99OG$-$J$$$3HKCm0U7F2<$5$$!#

front $r;XDj$9kH!"Lp$O%0%i%U$N%G!<%?$N>e$KIA$+$l$^$9!#**back** $,;XDj$5l?>l9g(%G%U%)%k%H) OLpO%0%i%U$N%G!<%?$N2<KIA+l^$9!#**front** $r;H$($P!"L)=8$7$?%G!<%?$GLp$,8+$(J/Jk3HrKI0$3$H$,$G$-$^$9!#

Nc:

```
Lp@h$,$J$/!"G\$NI}$,Lp$rIA$/$K$O:
     set style arrow 1 nohead lw 2
     set arrow arrowstyle 1
```

$=$NB>NNcK$D$$$F$O!"0J2<;2>H: **set arrow (p. 106)**!#

Boxplot %9%?%$%k;XDj (boxplot)

%3%^%s%I **set style boxplot** Kh$j!"IA2h%9%?%$%k **boxplot** $G@8@.$9$kIA2h$N%l%$%"%&%H$rJQ99G-$^$9!#

=q<O:

```
     set style boxplot {range <r> | fraction <f>}
                       {{no}outliers} {pointtype <p>}
                       {candlesticks | financebars}
                       {separation <x>}
                       {labels off | auto | x | x2}
                       {sorted | unsorted}
```

boxplot $NH"$O!"><o$K%G!<%?2E@$NBh0l;MJ,0L$+$iBh;0;MJ,0LNCMNHO0OK+$+$C$F$$$^$9!#H"$+$i1dD9$5lkH"R2$N8B3&$O!"2 DN0[JkJ}K!$G@)8f$G$-$^$9!#%G%U%)%k%H$G$O!"H"$R2O!"$=$NH"N=l>lNC<$+$i!";MJ,0LHO0O$N1.5 G\($9Jo$A!"$=$NH"$N87L)$J?hD>J}8~$N9b$5) KEy7$$$HO0OK^$G1dD9$5l^$9!#H"$R2=l>lO!"%G!<%?2=89gN"$kE@$KB0$9$ky NCMG=*N;9kh&$K!"%a%"%s%K8~$+CF@Z$j<N$Fil$^$9!#;MJ,0LHO0O$NCzEY1.5 G\$NCM$NE@$,$J$$$>l9gb"j^9+$i!"H"$R2O=$NL>L\>e$NHO0Ohj$bC;$/Jk>l9gb"j^$9!#$3$N%G%U%)%k%H$O0J2<$KBP1~$7$^$9!#

```
     set style boxplot range 1.5
```

b&0lDNJ}K!H7$F!"H"$R2,$+$+$kE@$NAm?t$N3d9g(fraction) $r;XDj$9k3H,G-$^$9!#3N>l9g!"$=$NHO0O$O%a%"%sCM$+$i!"%G!<%?2=89g$N;XDj7?J,$r0O$9~$'$^$G!"BP>N$K1dD9$5$l$^$9!#3NH-$b!"8D!9$NH"R2$O%G!<%?2=89gFb$NE@$NC<$^GK@)8B5l$^$9!#%G!<%?2=89gN95% $NE@$rOkKO0J2<Nh$&$K7^$9!#

```
     set style boxplot fraction 0.95
```

H"R2$NHO0O$N30K"kG0U$NE@$O!"outliers $H8+$J5l$^$9!#%G%U%)%k%HGO=liORHDRH$D1_(point-type 7) GIA+l^9,!"%*%W%7%g%s **nooutliers** O3lrL58zK7$^$9!#

%G%U%)%k%HGO boxplot $O candlesticks $H;w$?%9%?%$%k$GIA2h7^9,!"financebars $H;w$?%9%?%$%k$GIA2h9k$?a$N%*%W%7%g%s**b**$"$j$^$9!#

boxplot $N using ;XDj$,4NsL\$r;}$D>l9g!"$=NNsNCMO"$k0x;RJQ?t$NN%;6E*$J%l%Y%kCM$G$"$k$H8+$J7^$9!#$3$N>l9g!"$=$N0x;RJQ?t$N%l%Y%k$N?t$HF1$8$@1NJ#?t$Nboxplotboxplotboxplotboxplotboxplotboxplot $,IA$+l^$9!#$=li$N $j9g$&bNF1;N$N5wN%$O%G%U%)%k%HGO1.0 (x <4$NC10L$G) G9$,!"$3$N4V3V$O%*%W%7%g%s **separation** $GJQ9$G$-$^$9!#

%*%W%7%g%s **labels** $O!"$3li$N boxplot ($=l>$l%G!<%?2=89g$N"$kItJ,$KBP1~9k) NI3K!"INh&$K%i%Y%k$rD1k+$r7hDj$7$^$9!#%G%U%)%k%HGO0x;RNCMr?eJ?<4(x $+x2 $N$$:l+plot $G;H$olF$$$kJ}) $NL\@9%i%Y%k$K=PNO7^$9!#$3lO%*%W%7%g%s$N **labels auto** $KBP1~$7$^$9!#%*%W%7%g%s **labels x**, **labels x2** KhCF!"6/@)E*$K x <4!"x2 <4$K$=$l$>$l=PNO$5;$k3HbG$-$^$9$7!"**labels off** $G%*%U$K9k3HbG-$^$9!#

%G%U%)%k%H$O!"0x;RJQ?t$N0[Jk%l%Y%k$KBP1~$9$k boxplot $O@0Ns=$O;$:!"%G!<%?%!$%k$K=$N%l%Y%k$,8=$l$k=gHV$KIA2h7^$9!#$3$N5sF0$O%*%W%7%g%s$N **unsorted** $KBP1~$7$^$9$,!"%*%W%7%g%s **sorted** $r;HMQ$9kH!"$^:%l%Y%k$r<-=q=g$K%=!<%N=g$K boxplot $rIA2h$7$^$9!#

%*%W%7%g%s **separation**, **labels**, **sorted**, **unsorted** $O!"plot $K4NsL\$N;XDj$rM?$($?>l9g$N$_8zNO$r;}A^$9!#

0J2<;2>H: **boxplot (p. 48)**, **candlesticks (p. 49)**, **financebars (p. 53)**!#

%G!<%?IA2h%9%?%$%k;XDj **(set style data)**

%3%^%s%I **set style data** $O%G!<%?IA2h$KBP9k%G%U%)%k%H$NIA2h%9%?%$%k$rJQ99$7$^$9!#

=q<0:

```
set style data <plotting-style>
show style data
```

A*Br9'L\$K$D$$$F$O!"0J2<;2>H **plotting styles (p. 47)**!#**show style data** $O8=:_$N%G%U%)%k%H$N%G!<%?IA2h%9%?%$%k$rI=<($7$^$9!#

EIjDY7%9%?%$%k;XDj **(set style fill)**

%3%^%s%I **set style fill** $O!"boxes, histograms, candlesticks, filledcurves GNIA2hK*1kIA2hMWAG$N%G%U%)%k%H$N%9%?%$%k$N@_Dj$K;H$ol^$9!#$3$N%G%U%)%k%H$O!"8D!9$NIA2h$KEIjDY7%9%?%$%k (fillstyle) $r;XDj$9k3HG>e=q$-$G$-$^$9!#0J2<;2>H **set style rectangle (p. 166)**!#

=q<0:

```
set style fill {empty
                | {transparent} solid {<density>}
                | {transparent} pattern {<n>}}
               {border {lt} {lc <colorspec>} | noborder}
```

%G%U%)%k%HNEIjDV$7%9%?%$%k (fillstyle) $O **empty** $G$9!#

%*%W%7%g%s **solid** $O!"=PNO7A<0$,%5%]!<%H7F$$$k>19g!"$=$N?'GN%Y%2EIjr9T$$$^$9!#%Q%i%a!<%?<density> $ŒEI$jDV$7?'$N6/5rI=7F$$$F<density> $,0.0 JiH"$O6u!"<density> $,1.0 JiH"O=$NFbIt$O8=:_$N@~<o$H40A4$KF1$8?'GEIi1^$9!#=PNO7A<0$KhCFO!"3N6/5rO"B3E*$KJQ2=5;$i1kbNb"j^9,!"$=$NB>NbNO!"ItJ,E*JEIjDV7N4vD+$N%l%Y%k$r<BAu7F$$$k$K2a$.$^$;$s!#%Q%i%a!<%?<density> $,M?$(i1J+C?>19g$O%G%U%)%k%H$N1 KJj^$9!#

%*%W%7%g%s **pattern** $O!"=PNO%I%i%$%PKhCFM?$($i1k%Q%?!<%sGNEIjDV7$r9T$$$^$9!#MxMQ$G$-$kEIjD$V$7%Q%?!<%s$N<oN'$H?t$O=PNO%I%i%$%P$K0MB8$7$^$9!#EIjDV7$N boxes %9%?%$%k$GJ#?t$N%G!<%?=89g$rIA2h$9$k>19g$=$N%Q%?!<%s$O!"U#?t$N6J@~$NIA2hK*1k@~<o$N<~4|$HF1MM!"M-8z$J%Q%?!<%s$r!"%Q%?!<%s<n> $+$i;OaF<~4|E*$KMxMQ$7$^$9!#

%*%W%7%g%s **empty** $O!"H"$rEIjDV7$^;$s$,!"$3$1$,%G%U%)%k%H$G$9!#

%G%U%)%k%HGO!"EIjDY5$1$?%*%V%8%'%/%H$O8=:_$N@~$N<oN'$N<B@~$G6-3&@~$,IA$+$1$^$9$,!"**border <colorspec>** G=$N6-3&$N?'$rJQ99$9k3H,G-$^$9!#**noborder** $O!"$3$N fillstyle KBP7$F6-3&@~$,IA$+1J$$$h$&$K7^$9!#

EIjDY7?' (**fillcolor** <**colorspec**>) $O!"EI$jDY$7%9%?%$%k (fill style) $+$iJ,N%$5$1$F$$$^$9!#$9Jo$A!" fillstyle $OIA2hMWAG$d%*%V%8%'%/%H$GJL!9$N?'$r;}$C$?$^$6&M-$9k3H,G-$^$9!#fillstyle $r<u$1D1$kBgDq$N>l=j$G fillcolor $r;XDj$G$-$^$9!#fillcolor $O **fc** $N>JN,7A$b;H$($^$9!#;XDj$7$J$$>19g$O!"EI$jDY$7?'$O8=:_$N@~<o (linetype) $+$i<hj^$9!#Nc:

```
plot FOO with boxes fillstyle solid 1.0 fillcolor "cyan"
```

F)L@2= **(set style fill transparent)** $$$/D+$N=PNO7A<0$O!"EIjDV7NN0h$N **transparent** (F)L@2=) B0@-$r%5%]!<%H$7$F$$$^$9!#transparent solid $NNN0hEI$jDV7G$O!"**density** (L)EY) %Q%i%a!<%?<density>$O%"%k%!CM$H7F;HMQ$5$1$^$9!#D^$j!"L)EY0 $O40A4$JF)L@$r!"L)EY1 $O40A4$JIF)L@$r0UL#$7$^$9!#transparent pattern NEIjDV7G$O!"%Q%?!<%s$NGX7J$,40A4$JF)L@$+40A4$JIF)L@$N$$:1+$G$9!#

=PNO7A<0	solid	pattern	pm3d
gif	no	yes	no
jpeg	yes	no	yes
pdf	yes	yes	yes
png	TrueColor	index	yes
post	no	yes	no
svg	yes	no	yes
win	yes	yes	yes
wxt	yes	yes	yes
x11	no	yes	no

F)L@JEIjDV$7NN0h$r4^$ '%0%i%U$r8+$?$j:n$C$?$j9kNK$O!"UL$J@)8B$,$"j&k3HKCm0U7F$/$@$5$$!#Nc$($P!"png =PNO7A<0GO!""truecolor" %*%W%7%g%s$,;XDj$5lF$$$k>l9gKN$_F)L@2=$NEIjDY7$,MxMQ$G$-$^$9!#PDF %U%!%$%kKOF)L@2=NN0h$,@5$7$/5-=R$5lF$$$F$b!"PDF $NI=<(%=%U%H$KhCFO$=$l$r@5$7$/I=<($G$-$J$$$3Hb$"$j$($^$9!#<B:]$K PostScript %W%j%s%?GOLdBjOJ$$$N$K!"Ghostscript/gv GO%Q%?!<%sEIjDV7NN0h$r@5$7$/I=<($G$-$^$;$s!#

4X?tIA2h%9%?%$%k;XDj (set style function)

%3%^%s%I **set style function** $O4X?tIA2h$KBP9k%G%U%)%k%H$NIA2h%9%?%$%k (lines, points, filledcurves JI) $rJQ99$7$^$9!#0J2<;2>H:**plotting styles (p. 47)**!#

=q<O:

```
set style function <plotting-style>
show style function
```

Set style increment

Cm0U: 3N%3%^%s%I$OHs?d>)$G$9!#Be$ojK?7$7$$%3%^%s%I **set linetype** $r;HMQ$7F/$@$5$$!#3l$O!"BeMQ$N$?$a$N0l;~E*$JE,Ev$J@~<o$r8!:w9kNGOJ$/!"@~<o<+BN$r:FDj5A7^$9!#0J2<;2>H: **set linetype (p. 135)**!#

=q<O:

```
set style increment {default|userstyles}
show style increment
```

%G%U%)%k%HGO!"F1$8%0%i%U>e$N<!$NIA2h$O!"8=:_$N=PNO7A<0$G%G%U%)%k%H$GDj5A$5lF$$$k@~<o$N<!$NbN$G9T$ol^$9!#$7$+$7!"**set style increment user** $rA*Br$9kH!"%G%U%)%k%H$N@~<o$GOJ$/!"%f!<%6Dj5A%i%$%s%9%?%$%kHV9f$NbN$r;HMQ$5$;$k3H$,$G$-$^$9!#

Nc:

```
set style line 1 lw 2 lc rgb "gold"
set style line 2 lw 2 lc rgb "purple"
set style line 4 lw 1 lc rgb "sea-green"
set style increment user

plot f1(x), f2(x), f3(x), f4(x)
```

3l$O!"4X?t f1, f2, f4 $O?7$?$K%f!<%6Dj5A$5l?%i%$%s%9%?%$%k$GIA2h$5l^$9!#%f!<%6Dj5A%i%$%s%9%?%$%k,8+$D$+$i$J$$>l9g$O!"Be$ojK$=$l$KBP1~$9$k%G%U%)%k%H$N@~<o,MxMQ5l$^$9!#Nc$($P!">eNNcG$O!"f3(x) $O%G%U%)%k%H$N@~<o3 $GIA2h$5l^$9!#

@~%9%?%$%k;XDj (set style line)

=PNOAuCVKO$*$N$*$N%G%U%)%k%H$N@~<o$HE@<o$N=89g$,$"$j!"$=$liO%3%^%s%I **test** $G8+$k3H$,$G$-$^$9!#**set style line** $O@~<o$H@~I}!"E@<o$HE@$NBg$-$5$r!"8D!"9$N8F$S=P$7$G!"$=li$N>pJs$rA4It;XDj9kBeoj$K!"C1$J$kHV9f$G;2>HG-kh$&$K"i+8aDj5A9kbN$G$9!#

=q<O:

```
set style line <index> default
set style line <index> {{linetype  | lt} <line_type> | <colorspec>}
                       {{linecolor | lc} <colorspec>}
                       {{linewidth | lw} <line_width>}
                       {{pointtype | pt} <point_type>}
                       {{pointsize | ps} <point_size>}
                       {{pointinterval | pi} <interval>}
                       {{dashtype | dt} <dashtype>}
                       {palette}
unset style line
show style line
```

default $O!"A4$F$N%i%$%s%9%?%$%k%Q%i%a!<%?$r$=$l$HF1$8index $r;}$D@~<o(linetype) $K@_Dj$7$^$9!#

<index> $Nlinestyle $,4{$KB8:_9k>19g!"B>$NA4$F$OJ]B8$5l?$^$^!"M?$($il?%Q%i%a!<%?N_$,JQ99$5l^$9!#<index> $,B8:_$7J1lP!";XDj5lJ+C?CM$O%G%U%)%k%H$NCMKJj^$9!#

3Nh&KD$/$ilk%i%$%s%9%?%$%k$O!"%G%U%)%k%H$N7?(@~<o, E@<o) rJLJbNKCV-49$($k3HO7$J$$$N$G!"%i%$%s%9%?%$%k!"%G%U%)%k%H$N7?!"IAib;H$($^$9!#%i%$%s%9%?%$%k$O01;~E*JbNG!"%3%^%s%I **reset** $r<B9T$9lP$$DGb$=$liO>C$(5n$j$^$9!#@~<o<+BN$r:ED j5A$7$?$>19g$O!"0J2<;2>H: **set linetype (p. 135)**!#

@~<o$HE@<o$O!"$=$Nindex CM$r%G%U%)%k%H$H7^$9!#$=$Nindex CM$KBP9k<B:]$N5-9f$N7A$O!"=PNO7A<0$KhC$F0[$J$jF@$^$9!#

@~I}$HE@$NBg$-$5$O!"8=:_$N=PNO7A<0$N%G%U%)%k%H$NI}!"Bg$-$5KBP9$k>h?t$G$9($7$+$7!"$3$3GN<point_size> $O!"%3%^%s%I **set pointsize** $GM?$(il$k>h?t$K$O1F6A$r<ulJ$$$3HKCm0U7F$/$@$5$$)!#

pointinterval $O!"%9%?%$%k **linespoints** $G%0%i%UCf$KIA$+$l$kE@$N4V3V$r@)8f$7$^$9!#%G%U%)%k%H$O0 $G$9(9YFNE@$,IA2h$5lk)!#NC$($P!"**set style line N pi 3** $O!"E@<o$,N!"E@NBg-5H@~I}$O8=:_$N=PNO7A<0$N%G%U%)%k%H$G!"**with linespoints** GNIA2hGOE@$O3HVL\Kh$KIA2h5lkh$&$J%i%$%s%9%?%$%k$rDj5A$7$^$9!#$=$N4V3VrIiNCMK9kH!"$=$l$O4V3V$O@5NCMN>19g$HF1$8G9$,!"E@$N5-9f$N2<$KJk@~$r=q$+$J$$$h$&$K7^$9(=PNO7A<0$KhCFO)!#

A4FN=PNOAuCV$, **linewidth** $d **pointsize** $r%5%]!<%H$7$F$$$ko1GO$"$j$^$;$s!#$b$7%5%]!<%H$5lF$$$J$$$>19g$O=$liN%*%W%7%g%s$OL5;k$5l^$9!#

=PNO7A<0$K0MB8$7J?'$r **linecolor** <**colorspec**> $+ **linetype** <**colorspec**> (>JN,7A$O **lc**, **lt**) $N$$:l+$r;H$C$F3d$jEvFk3H$,$G$-$^$9!#$3$N>19g!"?'$O RGB $N3 DAHGM?$(k+!"gnuplot $N;}$D%Q%l%C%H$N?'L>!"8=:_$N%Q%l%C%HKBP9$k>.?t;XDj!"$^$?$O cbrange XN8=:_$N%Q%l%C%H$NBP1~KBP9$kDj?tCM!"$N$$:l+$GM?$($^$9!#0J2<;2>H: **colors (p. 36)**, **colorspec (p. 37)**,**set palette (p. 152)**, **colornames (p. 115)**, **cbrange (p. 184)**!#

set style line <**n**> **linetype** <**lt**> $O!"=PNO7A<0$K0MB8$7$?E@@~/GK@~$N%Q%?!<%s$H?'$NN>J}$r%;%C%H7^$9!#**set style line** <**n**> **linecolor** <**colorspec**> $d **set style line** <**n**> **linetype** <**colorspec**> $O!"8=:_$NE@@~/GK@~$N%Q%?!<%s$rJQ99$;$:$K?7$7$$$@~?'$r@_Dj$7$^$9!#

3<!85%b!<%I(**splot** %3%^%s%I) GO!""linetype palette z" $N>JN,7A$H7FFCJL$K%-!<%o!<%I **palette** $r;H$&3H$b5v$5lF$$$^$9!#$=$N?'$NCM$O!"splot $Nz:BI8(9b$5) $KBP1~$7!"6J@~!"$"$k$$O6JLL$K1h$C$F3j$i$+$KJQ2=7^$9!#

Nc:0J2<GO!"HV9f1, 2, 3 KBP9$k%G%U%)%k%H$N@~<or=l>$l@V!"NP!"@D$H$7!"%G%U%)%k%H$NE@$N7A$r$=$l$>$l@5J}7A!"==;z!";03Q7AG"kH7^$9!#$3NH$-0J2<$N%3%^%s%I

```
set style line 1 lt 2 lw 2 pt 3 ps 0.5
```

$O!"?7$7$$%i%$%s%9%?%$%kH7$F!"NP$G%G%U%)%k%H$N2G\$NI}$N@~!"$*hS;03Q7A$GH>J,$NI}$NE@$rDj5A7^$9!#$^$?!"0J2<$N%3%^%s%I

```
set style function lines
plot f(x) lt 3, g(x) ls 1
```

$O!"f(x) $O%G%U%)%k%H$N@D@~$G!"g(x) $O%f!<%6$ND j5A7?NP$N@~$GIA2h7^$9!#F1MM$K!"%3%^%s%I

```
set style function linespoints
plot p(x) lt 1 pt 3, q(x) ls 1
```

$O! "p(x) $r@V$$@~$G7k$Pl?%G%U%)%k%H$N;03Q7A$G! "q(x) QNPN@~$G7k$Pl?>.$5$$;03Q7A$GIA2h$7$^$9!#

```
splot sin(sqrt(x*x+y*y))/sqrt(x*x+y*y) w l pal
```

$O! "**palette** $K=>$C$F3j$i$+$J?'$r;H$C$F6JLL$rIA2h7^$9!#$3lO$=$l$r%5%]!<%H$7$?=PNO7A<0$G7+AcsH$OF0:n$7$J$$$3HKCm0U7F$/$@$5$$!#0J2<$b;2>H: **set palette (p. 152)**, **set pm3d (p. 149)**!#

```
set style line 10 linetype 1 linecolor rgb "cyan"
```

$O! "RGB %+%i!<$r%5%]!<%H9k9YFN=PNO7A<0$G! "%i%$%s%9%?%$%k 10 $K<B@~$N?e?'$r3d$jEvF^$9!#

1_%9%?%$%k;XDj (set style circle)

=q<0:

```
set style circle {radius {graph|screen} <R>}
                 {{no}wedge}
                 {clip|noclip}
```

3N%3%^%s%I$O! "IA2h%9%?%$%k "with circles" $G;H$olk%G%U%)%k%H$NH>7B$r@_Dj7^$9!#$3lO! "%G!<%?IA2h$G2Ns$N%G!<%?(x,y)7+M?$($J$+$C$?>19g! "$"$k$$$O4X?tIA2h$N%H$-KE,MQ5l^$9!#%G%U%)%k%H$O! "0J2<Nh$&$KJC$F$$$^$9: "set style circle radius graph 0.02"!#**nowedge** $O! "@p7A$Nl_8LItJ,$+$iCf?4$K8~$+$&2K\$NH>7BrIA+$J$$h$&$K7^9,! "%G%U%)%k%H$O **wedge** $G$9!#3N%Q%i%a!<%?$O4OA4$Jl_KBP7FO2?b7$^$;$s!#**clip** $Ol_$rIA2h6-3&$G%/%j%C%T%s%0$7$^$9$,! "**noclip** O3lrL58zK7$^$9!#%G%U%)%k%H$O **clip** $G$9!#

D9J}7A%9%?%$%k;XDj (set style rectangle)

%3%^%s%I **set object** $GDj5A$5l?D9J}7AKOJL!9$N%9%?%$%k$r@_Dj$G$-$^$9!#$7$+$7! "8DJL$N%9%?%$%k;XDjr7J1lP! "$=$N%*%V%8%'%/%H$O%3%^%s%I **set style rectangle** Kh$k%G%U%)%k%H$r<u$17Q$.$^$9!#

=q<0:

```
set style rectangle {front|back} {lw|linewidth <lw>}
                    {fillcolor <colorspec>} {fs <fillstyle>}
```

0J2<;2>H: **colorspec (p. 37)**, **fillstyle (p. 163)**!#**fillcolor** $O **fc** $H>JN,$G$-$^$9!#

Nc:

```
set style rectangle back fc rgb "white" fs solid 1.0 border lt -1
set style rectangle fc linsestyle 3 fs pattern 2 noborder
```

%G%U%)%k%H$N@_Dj$O! "GX7J?'GNEIjDY7$G! "6-3&$O9uKJCF$$$^$9!#

BJl_%9%?%$%k;XDj (set style ellipse)

=q<0:

```
set style ellipse {units xx|xy|yy}
                  {size {graph|screen} <a>, {{graph|screen} <b>}}
                  {angle <angle>}
                  {clip|noclip}
```

3N%3%^%s%I$O! "BJl_$ND>7B$rF1$8C10L$G7W;;$9k+I&$+$r@)8f7^$9!#%G%U%)%k%H$O **xy** $G! "$3lOBJl_$N<g<4(Bh1<4)$ND>7B$Ox($^$?$Ox2)<4$HF1$8C10L$G7W;;$7! "I{<4(Bh2<4)$ND>7B$Oy($^$?$Oy2)<4$NC10L$G7W;;$7$^$9!#3N%b!<%IGO! "BJl_$NN><4$NHf$O! "IA2h<4$N%"%9%Z%/%HHf$KOMB8$7$^$9!#**xx** $+**yy** $K@_Dj$9lP! "9YFNBJl_$NN><4$OF1$8C10L$G7W;;5l$^$9!#3l$O! "IA2h$5lkBJl_$NN><4$NHf$O! "2sE>$7Fb@5$7$$$^$^$G9,! "?eJ?J}8~$+?bD>J}8~$N0lJ}$N=L<\$NJQ99Kh$j@5$7$/$J$/$Jk3Hr0UL#7^$9!#

3l$O! "object H7$FDj5A$5l?BJl_! "%3%^%s%I **plot** KhCFIA2h5l$kBJl_$NN>J}$K1F6A$rM?$($kA4BNE*$J@_Dj$G9,! "**units** NCMO! "IA2hKh! "%*%V%8%'%/%HKh$K@_Dj$r:FDj5AG-$^$9!#

BJ1_$N%G%U%)%k%H$N%5%$%:$b! "%-! <%o! <%I **size** $G@_Dj$G$-$^$9! #%G%U%)%k%H$N%5%$%:$O! "2 NsN_$N%G! <%?! "$^$?$O4X?t$N plot L?Na$GE,MQ5l$^$9! #2 DNCM$O! "BJ1_$N(2 DN<g<4! "2 DNI{<4$K8~$+$$9g$&) <g<4D>7B$HI{<4D>7BH7$F;HMQ$5l^$9! #

%G%U%)%k%H$O! ""set style ellipse size graph 0.05,0.03" $G$9! #

:G8eKJj^9,! "%G%U%)%k%H$N8~$-$r%-! <%o! <%I **angle** $G@_Dj$bG-$^$9! #8~$-$O! "BJ1_$N<g<4$H%0%i%U$Nx <4$NJ}8~HJ$93Q$G! "C10LCEYGM?$($kI,MW$,$"j^$9! #

clip $OBJ1_$rIA2h6-3&$G%/%j%C%T%s%0$7$^$9$,! "**noclip** O3lrL58zK7$^$9! #%G%U%)%k%H$O **clip** $G$9! #

BJ1_$N object $NDj5A$K4X7F$O0J2<;2>H: **set object ellipse (p. 146)**! #2 <!85$NIA2h%9%?%$%k$K4X$7FO0J2<;2>H: **ellipses (p. 51)**! #

J8;zNs%\%C%/%9%9%?%$%k;XDj **(set style textbox)**

=q<0: set style textbox {opaque|transparent}{{no}border}

3N%3%^%s%I$O! "B0@-**boxed** Kh$k label $NI=<($r@)8f7^$9! #H"IU$-J8;zNs$r%5%]! <%H$7$J$$=PNO7A<0O3$N%9%?%$%k$rL5;k$7$^$9! #

6JLLIA2h **(surface)**

%3%^%s%I **set surface** $O3 <!85IA2h**(splot)** KN$_4X78$7$^$9! #

=q<0:

```
set surface {implicit|explicit}
unset surface
show surface
```

unset surface Kh$j **splot** $O! "4X?t$d%G! <%?%U%!%$%k$NE@KBP9kIsJE@$d@~$bIA$+$J$/$Jj^$9! #$3lO<g$K! "Ey9b@~$r:n$k6JLL$rIA$/Be$ojKEy9b@~N_rIA/>19g$KM-MQ$G$9! #$=$N>19g$G$b **set contour** $N@_Dj$Khj$^$9$,! "6JLL>e$KEy9b@~$,IA$+l^$9! #B>$NbN$CDL>o$N$^$^$G! "$"$k0l$D$N4X?t$d%G! <%?%U%!%$%k$N6JLLN_$r%*%U$K9kKO! "**splot** %3%^%s%I>e$G%-! <%o! <%I **nosurface** $r;XDj$7F/$@$5$$! #Ey9b@~$r3J;R$NEZBf$KI=<($7$?$$>19g$O **unset surface; set contour base** $H$$$&AH$,JXMx$G7g$&! #0J2<;2>H: **set contour (p. 115)**! #

3 <!85%G! <%?NAH,LVL\(3J;R@~) $HG'<1$5lk$H! "gnuplot $O%G%U%)%k%H$G$O3J;R6JLL$rMW5a7F$$$kbNH7$F! "0EL[$K **with lines** $NIA2h%9%?%$%k$rMQ$$$^$9! #0J2<;2>H: **grid_data (p. 188)**! #%3%^%s%I **set surface explicit** O3$N5!G=$rM^@)$7! "F~NO%U%!%$%kNJ,N5l?%G! <%?%V%m%C%/$G5-=R$5lk8IN)@~N_$rIA2h$7$^$9! #3N>19gGb! "splot $GL@<(E*$K **with surface** H9lP3J;R6JLL$,IA2h$5l^$9! #

%F! <%V%k%G! <%?=PNO **(table)**

table %b! <%I$,M-8z$J>19g! "**plot** $H **splot** %3%^%s%I$O! "8=:_$N=PNO7A<0$KBP9k<B:]$NIA2h$r@8@.9kBeoj$K

```
X Y {Z} <flag>
```

NCMNJ#?tNs$+$iJkI=7A<0$N%F%-%9%H=PNO$r9T$J$$$^$9! #%U%i%0J8;z<frag> $O! "$=$NE@$,M-8z$JHO0CFb$K$"$k>19g$O"i"! "HO0C30$N>19g$O"o"! "L$Dj5ACM(undefined) $N>19g$O"u" $G$9! #%G! <%?$N=q<0$O! "<4$N9o$_$N=q<0(0J2<;2>H: **set format (p. 124)**) KhCF7h$^$j! "Ns$O01$D$N6uGr$G6h@Zil$^$9! #3l$O! "Ey9b@~$r@8@.$7! "$=lr:EMxMQ$N%?$a$KJ]B8$7$?%$$H$-$KJXMx$G$9! #3NJ}K!$O! "Jd4V$5l?%G! <%?$rJ]B8$9kNKb;H$&$3H,G-$^$9(0J2<;2>H**set samples (p. 159)**, **set dgrid3d (p. 120)**)! #

=q<0:

```
set table {"outfile" | $datablock}
plot <whatever>
unset table
```

I=7A<0$N=PNO$O! ";XDj7?%U%!%$%k$K=q$-=P$7$^$9$,! ";XDj$,$J$$>19g$O8=:_$N **set output** $,;XDj$9kbNK=PNO7^$9! #B>$K! "I=7A<0=PNO$rL>A0IU$-%G! <%?%V%m%C%/$K%j%@%$%l%/%H9k3HbG$-$^$9! #%G! <%?%V

%m%C%/L>O'' $G;O$^j^$9!#0J2<$b;2>H: **inline data (p. 88)**!#8=:_$N=PNO7A<0$NI8=`E*$JIA2h$KLa9K$O!"
unset table $rL@<(E*$K9TJ&I,MW$,$"j^$9!#

0J2<$b;2>H: **plot with table (p. 168)**!#

Plot with table

I=%G!<%?$KJQ49$5lkF~NO%G!<%?KBP9$kIA2h%9%?%$%k$K0MB8$9$k=hM}(J?3j2=!"8m:9@~$NldD9!"2<4HO0O$N%A%*%C%/Ey) rHr1k?$a!"$"$k$$$OI=%G!<%?$KJQ49$G$-$kNs$N?t$rA}d9KO!"DL>o$NIA2h%9%?%$%kNBeojK"table" %-!<%o!<%I$r;H$CF/$@$5$$!#3N>19g!"HO0OFb/HO0O30/L$Dj5A$r0UL#9ki, o, u $,CV$+1k:G8e$NDI2CNs$O!"=PNOKOD-$^;$s!#$=$N=PNO@h$O!":G=i$K**set table** <**where**> $G;XDj$9kI,MW,$"$j$^$9!#Nc:

```
set table
plot <file> using 1:2:3:4:5:6:7:8:9:10 with table
```

3N>19g!"<B:]$NIA2h%9%?%$%k$,$J$$>uBVJN$G!"3FNs$K$OFCDj$N<4$OBP1~$7$J$$$3HKJj!"hC$F xrange, yrange Ey$N@_Dj$OL5;k$5l^$9!#

=PNO7A<0 (terminal)

gnuplot $O?tB?$/$N%0%i%U%#%C%/7A<0$r%5%]!<%H7F$$$^$9!#%3%^%s%I**set terminal** $r;H$C$F **gnuplot** $N=PNO$NBP>]HJ$k7A<0$N<oN`$rA*s$G$/$@$5$$!#=PNO@h$r%U%!%$%k!"$^$?$O=PNOAuCV$K%j%@%$%l%/%H$9kK$O **set output** $r;H$CF/$@$5$$!#

=q<0:

```
set terminal {<terminal-type> | push | pop}
show terminal
```

<terminal-type> $,>JN,$5lk$H **gnuplot** $OMxMQ2DG=$J=PNO7A<0$N0lMw$rI=<(7^$9!#<terminal-type> $N;XDj$K$OC;=L7A$,;H$($^$9!#

set terminal $H**set output** $NN>J}$r;H$&>19g!"**set terminal** $r:G=i$K9kJ}$,0BA4$G$9!#$=lO!"OS KhCF$O!"$=l,I,MWH9$k%U%i%0$r%;%C%H9k=PNO7A<0$,$"k+iG$9!#

$$/D+$N=PNO7A<0$O$?$/5s$NDI2C%*%W%7%g%s$r;}A^$9!#3F<**term**> $KBP$7!"D>A0$N**set term** <**term**> <**options**> $G;HMQ$5l?%*%W%7%g%s$O5-21$5$l!"$=$N8e$N**set term** <**term**> $,$=lr%j;%C%H9k3HO"j^$;$s!#3lONc($P0u:~;~$KM-MQ$G$9!#4vD+$N0[$J$k=PNO7A<0$r@ZBX$($k>19g!"A0$N%*%W%7%g%s$r7+jUV7>'$($kI,MWO"j^$;$s!#

%3%^%s%I**set term push** $O!"8=:_$N=PNO7A<0H=$N@_Dj$r**set term pop** KhCFI|5"9k$^$G5-21$7$F$$$^$9!#$3lO**save term**, **load term** H[$\F1Ey$G9,!"%U%!%$%k%7%9%F%`$X$N%"%/%;%9$O9T$o$:!"$h$C$FNc$($P$3$l$O!"0u:~8e$K%W%i%C%H[!<%`$K0MB8$7$J$$7A$G=PNO7A<0$rI|5"9kL\E*$K;H$($^$9!#gnuplot $N5/F08e!"%G%U%)%k%H!"$^$?$O**startup** %U%!%$%k$K=q$+$l$?=PNO7A<0$,<+F0E*$K5-21(push) 5l$^$9!#hC$F!"L@<(E*$K=PNO7A<0$r5-21$5$;$k3HJ/!"G$0U$N%W%i%C%H[!<%`>e$G%G%U%)%k%H$N=PNO7A<0$r**set term pop** KhCFI|5"5;$k!"$H$$&F0:n$r4|BT$7$?%/%j%W%H$r2DHB@-$r<:$o$:$K=q$/$3H,=PMh$^$9!#

>\:Y$O!"0J2<;2>H: **complete list of terminals (p. 194)**!#

=PNO7A<0XN%*%W%7%g%s (termoption)

%3%^%s%I**set termoption** $O!"8=:_;HMQ$7$F$$$k=PNO7A<0$N?6Iq$$r!"?7$?$J**set terminal** %3%^%s%I$NH/9T$J7KJQ99$9$k3H$r2DG=$K7^$9!#$3$N%3%^%s%I0l$DKBP7$F0l$D$N%*%W%7%g%s$N$_,JQ99$G$-$^$9!#$=7F3NJ}K!$GJQ99$G$-$k%*%W%7%g%sO=$&B?$/$O"$j$^$;$s!#8=:_;HMQ2DG=$J%*%W%7%g%s$O0J2<$NbNN_$G$9!#

```
set termoption {no}enhanced
set termoption font "<fontname>{,<fontsize>}"
set termoption fontscale <scale>
set termoption {linewidth <lw>}{lw <lw>}
```

A4<4L\@9$j@)8f (tics)

%3%^%s%I **set tics** $O!"A4$F$N<4$NL\@9jN9o$_$H%i%Y%k$r0lEY$K@)8f7^$9!#

L\@9jO **unset tics** $G>C$(!"**set tics** $GL\@9$j$,$D$-$^$9(%G%U%)%k%H)!#8D!9$N<4$NL\@9$j$O!"$3lHOJLN%3%^%s%I **set xtics**, **set ztics** JI$r;H$C$F@)8f$G$-$^$9!#

=q<0:

```
set tics {axis | border} {{no}mirror}
         {in | out} {front | back}
         {{no}rotate {by <ang>}} {offset <offset> | nooffset}
         {left | right | center | autojustify}
         {format "formatstring"} {font "name{,<size>}"} {{no}enhanced}
         { textcolor <colorspec> }
set tics scale {default | <major> {,<minor>}}
unset tics
show tics
```

%*%W%7%g%s$O!"8D!9$N<4(x, y, z, x2, y2, cb) KbE,MQG-$^$9!#Nc:

```
set xtics rotate by -90
unset cbtics
```

<4$N9o$_$N@~B0@-$O!"9Y$F%0%i%U$N6-3&(0J2<;2>H: **set border (p. 110)**) $HF1$8bN$r;H$CFIA+l^$9!#

tics $N**front** $^$?$O **back** $N@_Dj$O!"2D IA2h(splot $OIT2D) KN$_$9YF$N<4$K1EYE,MQ5l$^$9!#3l$O!"L\@9jHIA2hMWAG$,=EJC$?>19g$KL\@9jrIA2hMWAG$NA0LI$K=P9+!"1|KCV/$+$r@)8f7^$9!#

axis $H **border** $O **gnuplot** $KL\@9$j(L\@9jN9o$_<+?H$H$=$N8+=P$7)$r!"$=$l$>$l<4KD1kN+!"6-3&KD1kN+$r;X<($7$^$9!#<4$,6-3&$KHF$b6a$$>19g!"**axis** $r;HMQ$9kH6-3&$,I=<($5lF$$$l$P(0J2<;2>H:**set border (p. 110)**) L\@9jN8+=P$7J8;z$r6-3&$N30$K=P7F7^$&$G7g$&!#$3$N>19g<+F0E*$J%l%$%"%&%H%"%k%4%j%:%'$KhkM>Gr@_Dj$OBgDq$h$/$J$$$bNHJCF7$^$$$^$9!#

mirror $O **gnuplot** $KH?BPB&$N6-3&$NF1$80LCV$K!"8+=P$7NJ$$L\@9jr=PNO9kh&;X<(7^$9!#**nomirror** $O!"$"J?,A[A|7F$$$kDLjN3H$r9T$J$$$^$9!#

in $H **out** $OL\@9$j$N9o$_$rFbB&$KIA$/$+30B&KIA/$+$r@ZjUQ(($^$9!#

set tics scale $O!"L\@9$j$N9o$_NBg-5r@)8f7^$9!#:G=i$N<major> NCMK$O!"<+F0E*$K@8@.5l!"$^$?f!<%6$b;XDj$G$-$kBgL\@9$j(%l%Y%k0) $r;XDj$7!"2 $DL\$N<minor> NCMK$O!"<+F0E*$K@8@.5l!"$^$?f!<%6$b;XDj$G$-$k>.L\@9$j(%l%Y%k1) $r;XDj$7$^$9!#<major> $N%G%U%)%k%H$O1.0 $G!"<minor> $N%G%U%)%k%H$O<major>/2 $G$9!#5iKCMrDI2C9l$P!"%l%Y%k2, 3, ... $NL\@9$jNBg-5KJj$^$9!#**set tics scale default** $G%G%U%)%k%H$NL\@9jNBg$-$5$KI|5"$7$^$9!#

rotate $O!"J8;zNs$r90EY2sE>5;$F=PNO$5$;$h$&$H7^$9!#$3lO!"J8;zNs$N2sE>$r%5%]!<%H7F$$$k=PNO%I%i%$%P(terminal) GO<B9T5l$^$9!#**norotate** O3lr%-%c%s%;%k7^$9!#**rotate by** <ang> $O3QEY<ang> $N2sE>$r9T$J$$$^$9,!"$3lO$$/D+$N=PNO7A<0(terminal) $G%5%]!<%H$5lF$$$^$9!#

x $Hy <4$NBgL\@9jN%G%U%)%k%H$O**border mirror norotate** $G!"x2, y2 <4$O**border nomirror norotate** $,%G%U%)%k%H$G9!#z <4$N%G%U%)%k%H$O**nomirror** $G9!#

<offset> $O x,y $+$^$?$O x,y,z $N7A<0$G$9,!"$=lK:BI87O$rA*Br$7$F!"$=$NA0$K **first**, **second**, **graph**, **screen**, **character** $N$$:l+rD1k3HbG$-$^$9!#<offset> $O!"L\@9$j$N8+=P$7J8;zNs$N%G%U%)%k%H$NOLCV$+$i$N:$i$70LCV$G!"$=$N%G%U%)%k%H$NC10L7O$O**character** $G$9!#>\:Y$O!"0J2<;2>H: **coordinates (p. 24)**!#**nooffset** $O offset $r OFF K7$^$9!#

%G%U%)%k%HGO8+=P$7%i%Y%k$O!"H~$7$$7k2L$r@8$\$h$&$K!"<4$H2sE>3Q$K0MB8$7$?0LCV$K<+F0E*$K0LCV9go;5l$^$9!#$=$l$,5$$K$$iJ1lP!"L@<(E*$K**left**, **right**, **center** $N%-!<%o!<%I$Khj0LCV9go;$rJQ9$G$-$^$9!#**autojustify** $G%G%U%)%k%H$N5sF0$KI|5"$7$^$9!#

%*%W%7%g%sJ7$N **set tics** $O!"L\@9$j$N9o$_$rFbB&$K7^9,!"$=$NB>$NA4$F$N%*%W%7%g%s$CD>A0NCMrJ];}7^$9!#

BgL\@9$j(%i%Y%k$ND/)$NB>$N@)8f$K4X$7FO!"0J2<;2>H: **set xtics (p. 177)**!#>.L\@9jN@)8f$K4X$7FO!"0J2<;2>H: **set mxtics (p. 143)**!#3liN%3%^%s%I$O!"3F<4$NFHN)$J@)8f$rDs6!7^$9!#

Ticslevel

8=:_$O?d>)$5lF$$^$;$s!#0J2<;2>H: **set xyplane (p. 181)**!#

Ticscale

%3%^%s%I **set ticscale** $O8=:_$O?d>)5l$F$$^$;$s!#Beoj$K **set tics scale** $r;H$CF/$@$5$$!#

%?%$% '%9%?%s%W (timestamp)

%3%^%s%I **set timestamp** $OIA2h$NF|IU$H;~9o$r:8$NM>Gr$KI=<(7^$9!#

=q<0:

```
set timestamp {"<format>"} {top|bottom} {{no}rotate}
              {offset <xoff>{,<yoff>}} {font "<fontspec>"}
              {textcolor <colorspec>}
set timestamp
show timestamp
```

=q<0J8;zNs (format) $r;H$C$F!"=q$+lkF|IU$H;~9o$N=q<0$rA*Br$9k3H,G-$^$9!#%G%U%)%k%H$O asctime() $,;HMQ$9$k"%a %b %d %H:%M:%S %Y" $G$9(MKF|!";~!"J,!"IC!"4 7e$N@>Nq)!#**top** $H **bottom** $r;H$C$FF|IU$r:8$NM>Gr$N>e$KG[CV$9k+!"2<$KG[CV$9k+$rA*Br$G$-$^$9(%G%U%)%k%H$O2<)!#**rotate** $O!"$b$7=PNO7A<0$,%5%]!<%H7F$$$lPG9,!"F|IU$r?bD>J}8~$NJ8;zNsK7$^$9!#Dj?t <xoff>!"<yoff> O:$l (offset) $r0ULH$7!"3lKhCFhjE,@Z$J0LCV9g$o$;$,9T$($^$9!#<font> $OF|IU$,=q$+$l$k%U%)%s%H$r;XDj7^$9!#

timestamp NBeojK>JN,L> **time** $r;H$CFb9=$$$^$;$s!#

Nc:

```
set timestamp "%d/%m/%y %H:%M" offset 80,-2 font "Helvetica"
```

F|IU$N=q<0J8;zNs$K4X9k>\$7$$>pJsKD$$$F$O!"0J2<;2>H: **set timefmt (p. 170)**!#

F|;~%G!<%?F~NO=q<0 (timefmt)

3N%3%^%s%I$O!"%G!<%?,F|;~$N7A<0KJCF$$$k>l9g$K!"$=$N;~7CNs%G!<%?$KE,MQ5l$^$9!#3l$O%3%^%s%I **set *data time** $bM?$(il$F$$$J$$H0ULH$,$"j^$;$s!#

=q<0:

```
set timefmt "<format string>"
show timefmt
```

J8;zNs0z?t (<format string>) $O **gnuplot** $KF|;~%G!<%?$r%G!<%?U%!%$%k$+iINh$&$KFI$`$+$r;X<($7$^$9!#M-8z$J=q<0$C0J2<NDLj$G$9:

;~7CNs%G!<%?=q<0;XDj;R

=q<0	@bL@
%d	2?F|, 1–31
%m	2?7n, 1–12
%y	2?G/, 0–99
%Y	2?G/, 4 7e
%j	1 G/$N2?F|L\, 1–365
%H	2?;~, 0–24
%M	2?J,, 0–60
%s	Unix epoch (1970-01-01, 00:00 UTC) $+$i$NIC?t
%S	2?IC(=PNOGO0–60 $N@0?t!"F~NO$G$O<B?t)
%b	7nL>(1Q8l) $N3 J8;z>JN,7A
%B	7nL>(1Q8l)

G$0U$NJ8; z$rJ8; zNsCf$G; HMQG-$^$9$,! "5,B'$K=>CF$$kI,MW$,$"j^$9! #\t (%?%V) $OG'<1$5l^$9! #%P%C %/%9%i%C%7%e+8 ?J?tNs (\nnn) O=l,< ($9J8; z$KJQ49$5$l$^$9! #F|; ~MWAGNCfKJ,N%J8; z$,$J$>19g! "%d, %m, %y, %H, %M, %S O=l>$l2 7e$N?t; zrFI_9~$_$^$9! #%S GNFI$_9~$_$G>.?tE@$,$=$N%U%#! <%k%I KD$$$F$$k>19g$O! "$=$N>.?tE@$D$-$N?t$r>.?t$NIC; XDj$@$H2r<a7^$9! #%Y $O4 7e! "%j $O3 7e$N?t; z$r FI$_9~$_$^$9! #%b $O3 J8; z$r! "%B OI,MWJJ,$@$1$NJ8; z$rMW5a7^$9! #

6uGr (%9%Z! <%9) $N07$$Odd0c$$^$9! #=q<0J8; zNsCf$N1 DN6uGr$O! "%U%!%$%kCf$N0 8D! "$"$k$$O1 $D0J >e$N6uGrJ8; zNs$rI=$7$^$9! #9JoA! ""%H %M" $O"1220" $d"12 20" $r"12 20" $HF1$8h&KFI_$^$9! #

%G! <%?Cf$NHs6uGrJ8; z$N=8$^$j$=$l$>$l$O! **"using n:n ;** XDj$N0l$D0l$DNNsH%+%&%s%H5l$^$9! #hC$F **11:11 25/12/76 21.0** $O3 Ns$N%G! <%?$HG'<1$5l^$9! #: .Mp$rHr1k$?$a$K! "F|; ~%G! <%?$,4^$^$l$k>19g **gnuplot** $O! "$"J?$N **using ;** XDj$,40`zJbNG$"$k$H2>Dj$7$^$9! #

F|IU%G! <%?$,MKF|! "7n$NL>A0$r4^$s$G$$k>19g! "=q<0J8; zNsG=lrGS=|7J1l$P$$1$^$;s,! ""%a", "%A", "%b", "%B" G=li$rI=< ($9k3HOG-$^$9! #**gnuplot** $O?tCM$+$i7n$dMKF|$r@5$7$/5a$a$^$9! # 3l$i! "5Z$SF|; ~%G! <%?$N=PNO$NB>$N%*%W%7%g%s$N>\: Y$K4X$7FO! "0J2<; 2>H: **set format (p. 124)**! #

2 7e$N@>Nq$r %y GFI'>19g! "69-99 $O2000 G/L$K~! "00-68 $O2000 G/0J8e$H8+J7$^$9! #Cm0U: 3l$O! " UNIX98 $N; EMM$K9go;$?$bNG9,! "3N47NcO"A3AG0c$$,$"$kNG! "2 7e$N@>NqCM$OK\<AE*K"$$ $^$$$G$9! #

B>$N>pJs$K$D$$F$O! "0J2<$b; 2>H: **set xdata (p. 174)**, **time/date (p. 46)**! #

Nc:

```
set timefmt "%d/%m/%Y\t%H:%M"
```

$O! "**gnuplot** $KF|IU$H; ~4V$,%?%V$GJ,N%7F$$$k3H$r65$ ($^$9($?$@$7! "$"J?$N%G! <%?$r$h! <$/8+F/$@ $5$$! #%?%V$@$C$?$bN,I3$+$GJ#?t$N%9%Z! <%9$KJQ49$5$l$F$$^$;$s$+? =q<0J8; zNs$O%U%!%$%kCf$K<B:]$K $"$kJ*$H0lCW$7$F$$$J1lPJj^$;$s)! #0J2<$b; 2>H

```
;~7CNs%G! <%? (time data) %G%b! #
```

%0%i%U%?%$%H%k (title)

%3%^%s%I **set title** $O! "IA2h$N>e$N?C?Cf$K=q$+$l$kIA2h%?%$%H%k$r@8@.$7$^$9! #**set title** $O **set label** $NFC<1 Jb$N! "H_J;$^$9! #

=q<0:

```
set title {"<title-text>"} {offset <offset>} {font "<font>{,<size>}"}
          {{textcolor | tc} {<colorspec> | default}} {{no}enhanced}
show title
```

<offset> $rx,y $+$^$?$Ox,y,z $N7A<0$G; XDj7?>19g$O! "%?%$%H%k$QM?$ (il$?CM$@$10\F0$5l^$9! #$=lK :BI87O$rA*Br$7$F! "$=$NA0$K **first**, **second**, **graph**, **screen**, **character** $N$$:l+rD1k3HbG$-$^$9! # >\: Y$O! "0J2<; 2>H: **coordinates (p. 24)**! #%G%U%)%k%HGO **character** :BI87O$,; H$ol^$9! #Nc$ ($P! ""**set title offset 0,-1**" $O%?%$%H%k$Ny J}8~$N0LCVN_JQ99$7! "Bg$6CQ$K8@$C$F1 J8; zJ,$N9b5@$1%?%$%H%k$r 2<$K2<2^$9! #l J8; z$NBg$-$5$O! "%U%)%s%H$H=PNO7A<0$NN>J}$K0MB8$7$^$9! #

<font> $O%?%$%H%k$,=q$+lk%U%)%s%H$r; XDj$9kNK; Hol$^$9! #<size> $NC10L$O! "IN=PNO7A<0 (terminal) $r; H$C$F$$$k$+$KhCFJQoj^$9! #

textcolor <**colorspec**> $O! "J8; z$N?'$rJQ99$7$^$9! #<colorspec> $O! "@~<o! "rgb ?'! "$^$?$O%Q%l%C%HXN 3dEv$N$$:l+$,; XDj$G$-$^$9! #0J2<; 2>H: **colorspec (p. 37)**, **palette (p. 152)**! #

noenhanced $O! "3HD%J8; zNs=hM} (enhanced text) %b! <%I$,M-8z$KJC$F$$$k>19gGb! "%?%$%H%k$r3HD%J8; z Ns=hM}5;$J$$$h$&$K7^$9! #

set title $r%Q%i%a! <%?$J7G; H$&$H%?%$%H%k$r>C5n7^$9! #

%P%C%/%9%i%C%7%eJ8; zNs$N:nMQ! "5Z$SJ8; zNs$r0C$'C10l0zMQId$HFs=E0zMQId$N0c$$K$D$$F$O! "0J2<; 2>H: **syntax (p. 45)**! #

Tmargin

%3%^%s%I **set tmargin** $O>e$NM>Gr$N%5%$%:$r%;%C%H$7$^$9! #>\: Y$O! "0J2<; 2>H: **set margin (p. 138)**! #

Trange

%3%^%s%I **set trange** $O!"G^2pJQ?t%b!<%I!"$"$k$$O6K:BI8%b!<%IGNx,y NCMr7W;;9kNK;Hol$kG^2pJQ?t$NHOOO$r@_Dj$7$^$9!#>\:Y$O!"0J2<;2>H:**set xrange (p. 176)**!#

Urange

set urange $H **set vrange** $O!"**splot** $NG^2pJQ?t%b!<%IGx,y,z NCMr7W;;9kNK;Hol$kG^2pJQ?t$NHOOO$r@_Dj$7$^$9!#>\:Y$O!"0J2<;2>H:**set xrange (p. 176)**!#

Variables

show variables %3%^%s%I$O%f!<%6Dj5AJQ?t$HFbItJQ?t$N8=:_$NCM$N0lMw$rI=<(7^$9!#gnuplot $O!"GPVAL_, MOUSE_, FIT_, TERM_ $G;O$^$kL>A0$r;}$DJQ?t$rFbIt$GDj5A$7$F$$^$9!#

=q<0:

```
show variables      # GPVAL_ $G;O$^$k$b$N0J30$NJQ?t$rI=<(
show variables all  # GPVAL_ $G;O$^$k$b$N$b4^$aA4$F$NJQ?t$rI=<(
show variables NAME # NAME $G;O$^$kJQ?t$N$_$rI=<(
```

Version

%3%^%s%I **show version** $O8=:_5/F0$7$F$$k gnuplot $N%P!<%8%g%s!":G=*=$@5F|!"Cx:n8"<T$H!"FAQ $dinfo-gnuplot %a!<%j%s%0%j%9%H!"%P%0%l%]!<%H@h$N%a!<%k%"%I%l%9$rI=<(7^$9!#BPOCE*$K%W%m%0%i%`$,8F$PlF$$$kH-$O%9/%j!<%s>e$K$=$N>pJs$rI=<($7$^$9!#

=q<0:

```
show version {long}
```

long %*%W%7%g%s$rM?$(kH!"5i$K%*%Z%l!<%F%#%s%0%7%9%F%`!"**gnuplot** %$%s%9%H!<%k;~$N%3%s%Q%$%k%*%W%7%g%s!"%X%k%W%U%!%$%k$NCV$->l=j!"$=7F(:F$S)M-MQ$J%a!<%k%"%I%l%9$rI=<($7$^$9!#

;k@~J}8~ (view)

%3%^%s%I **set view** $O **splot** $N;k@~$N3QEY$r@_Dj$7$^$9!#3l$O!"%0%i%UIA2h$N3<!85:BI8rI$N%h$&$K2<!85$N2hLL(screen) $KEj1F$9k+$r@)8f$7$^$9!#3l$O!"IA2h$5l?%G!<%?$N2sE>$H=L<\$N@)8f$rM?$(F/l^$9,@5<M1F$7$+%5%]!<%H$7$F$$^;$s!#3<!85<M1F!"$*%h$S2<!85IA2hE*CO?^>e$X$N2<!85D>8r<M1F$,%5%]!<%H5l$F$$^$9!#

=q<0:

```
set view <rot_x>{,{<rot_z>}{,{<scale>}{,<scale_z>}}}
set view map {scale <scale>}
set view {no}equal {xy|xyz}
show view
```

$3$3$G<rot_x> $H<rot_z> $O!"2hLL$KEj1F5l$k2>A[E*$J3<!85:BI87O$N2sE>3Q(C10L$OEY) $N@)8f$G!":G=i$O($9Jo$A2sE>$,9TJolkA0$O)2hLIFb$N?eJ?<4$Ox,2hLIFb$N?bD><4$Oy,2hLI<+?H$K?bD>$J<4$,z HJCF$$^$9!#:G=i$Ox<4$N<~$j$K<rot_x> $@$12sE>5l$^$9!#<!$K!"?7$7$$z<4$N<~$j$K<rot_z> $@$12sE>5l$^$9!#

%3%^%s%I **set view map** $O!"%0%i%U$rCO?^$N%h$&$KI=<($9kN$K!#$3lOEy9b@~(**contour**) $N%0%i%Ud!"pm3d %b!<%I$Khk2<!8529EYJ,I[JI$G **with image** hjb'7$mM-MQ$G$9!#8e<TGO!"F~NO%G!<%?E@$N%k%#%k?MQ$N **zrange** $N@_Dj!"$*hS?'$NHOOO$N=L<\$K4X9k **cbrange** $N@_Dj$rE,@Z$K9T$&3H$KCm0U$7F/$@$5$$!#

<rot_x> $O[0:180] $NHOOO$K@)8B5l$F$$$F!"%G%U%)%k%HGO60 EY$G$9!#<rot_z> $O[0:360] $NHOOO$K@)8B5l$F$$$F!"%G%U%)%k%HGO30 EY$G$9!#<scale> $O **splot** A4BN$N?-=IN($r@)8f$7!"<scale_z> $Oz<4$N?-=LN_$r9T$J$$^$9!#?-=IN($N%G%U%)%k%HOIAi$b1.0 $G$9!#

Nc:

```
set view 60, 30, 1, 1
set view ,,0.5
```

:G=iNNcO4 DNA4Fr%G%U%)%k%HNCMK7F$$$^$9!#2 DaNNcO=L>.N(N_$r0.5 $KJQ99$7$F$$$^$9!#

Equal_axes

%3%^%s%I **set view equal xy** $Ox<4$Hy<4$NC10L$ND9$5$,6/@)E*KEy7$/$Jkh$&$K=L<\$r9go;!"%0%i%U$,%Z!<%8$KCzEY9g$&$h$&$K$=$N=L<\$rA*Br7^$9!#%3%^%s%I **set view equal xyz** $O!"$5iKz<4$bx $Hy<4$K9g$&$h$&$K7^9,!"8=:_$Nz<4$NHO0O$,!"IA2h6-3&$NHO0O$K9g$&$J]>Z$O$"$j$^$;$s!#%G%U%)%k%H$G$O!"3 DN<4$OFHN)$KM-8z$JNN0h$rKdakh&$K?-=L$5l^$9!#

0J2<$b;2>H: **set xyplane (p. 181)**!#

Vrange

%3%^%s%I **set urange** $H **set vrange** $O!"**splot** $NG^2pJQ?t(%Q%i%a!<%?)%b!<%I$Gx, y, z NCMr7W;;9kNK;Hol$kG^2pJQ?t$NHO0O$r@_Dj$7$^$9!#>\:Y$O!"0J2<;2>H: **set xrange (p. 176)**!#

X2data

%3%^%s%I **set x2data** $Ox2(>e)<4$N%G!<%?~7ONs(F|;~)7A<0$K@_Dj$7$^$9!#>\:Y$O!"0J2<;2>H: **set xdata (p. 174)**!#

X2dtics

%3%^%s%I **set x2dtics** $Ox2(>e)<4$NL\@9jrMKF|$KJQ99$7$^$9!#>\:Y$O!"0J2<;2>H: **set xdtics (p. 174)**!#

X2label

%3%^%s%I **set x2label** $Ox2(>e)<4$N8+=P7r@_Dj7^$9!#>\:Y$O!"0J2<;2>H: **set xlabel (p. 174)**!#

X2mtics

%3%^%s%I **set x2mtics** $O!"x2(>e)<4$r1G/$N3F7n$K@_Dj7^$9!#>\:Y$O!"0J2<;2>H: **set xmtics (p. 175)**!#

X2range

%3%^%s%I **set x2range** $Ox2(>e)<4$NI=<((5l$k?eJ?HO0O$r@_Dj7^$9!#%3%^%s%I%*%W%7%g%s$N9YF$N@bL@$K$D$$$F$O!"0J2<;2>H: **set xrange (p. 176)**!#3N%3%^%s%I$O!"x2<4$,L@<(E*$Kx<4$K%j%s/(link)5l$F$$$k>l9g$OL5;k$5l^$9!#0J2<;2>H: **set link (p. 136)**!#

X2tics

%3%^%s%I **set x2tics** $Ox2(>e)<4$N!"8+=P$7IU$1$5$l$kBgL\@9$j$N@)8f$r9T$J$$$^$9!#>\:Y$O!"0J2<;2>H: **set xtics (p. 177)**!#

X2zeroaxis

%3%^%s%I **set x2zeroaxis** $O!"86E@$rDL$kx2(>e)<4(y2 = 0)$rIA$-$^$9!#>\:Y$O!"0J2<;2>H: **set zeroaxis (p. 183)**!#

<4Kh$N%G! <%?<cN';XDj (xdata)

3N%3%^%s%I$Ox <4$N%G! <%?7A<0$N2r<a$r@)8f7^$9! #B>$N<4$=$l$>$lKbF1MM$N%3%^%s%I$,5!G=7^$9! #

=q<0:

```
set xdata time
show xdata
```

ydata, **zdata**, **x2data**, **y2data**, **cbdata** KbF1$8=q<0$,EvFO$^$j$^$9! #

time %*%W%7%g%s$O%G! <%?$,ICC10L$NF|;~%G! <%?$G$"$k3HrEA($^$9! #8=:_$N gnuplot $O;~9o$r%_%jIC$N@:EYJ]B8$7$^$9! #

%*%W%7%g%sJ7$N>19g$O! "%G! <%?$N2r<aJ}K!$rDL>o$N7A<0$KLa7^$9! #

F|;~%G! <%? (time)

set xdata time $O! "x :BI8$,%_%jIC@:EY$NF|;~%G! <%?$G$"$k3H$r0UL#$7$^$9! #**set ydata time** $H$$$&F1MM$N%3%^%s%I$b$"$j$^$9! #

F|;~%G! <%?$NF~NO$H=PNO$N2r<a$K$O! "JL! 9$N=q<05!9=$,$"j^$9! #%U%!%$%k$+$i$NF~NO%G! <%?$O! "A4BN$KDIMQ$9$k **timefmt** $r;H$&$+! "$^$?$O plot %3%^%s%IFb$G timecolumn() 4X?t$r;HCFFI$_9~$_$^$9! #3NF~NO5!9=$O! "<4$NHC0O(range) $r@_Dj$9kH$-$K;~4VNCMr;HMQ9k:]KbE,MQ5l$^$9! #0J2<;2>H: **set timefmt (p. 170)**, **timecolumn (p. 29)**! #

Nc:

```
set xdata time
set timefmt "%d-%b-%Y"
set xrange ["01-Jan-2013" : "31-Dec-2014"]
plot DATA using 1:2
```

$^$?$O

```
plot DATA using (timecolumn(1,"%d-%b-%Y")):2
```

=PNO! "9JoA<4$K1h$C$?L\@9$j$N%i%Y%k$d! "%^%&%9A':nGN:BI8=PNOKD$$$F$O! "%G%U%)%k%H$G$O! "IC$G$NFbIt;~9o$+$iF|;~$rI=8=9kJ8;zNsXNJQ49KO! "4X?t 'strftime' (unix G=lrD4YkKO "man strftime" $H%?%$%W7F$/$@5) $r;H$$^$9! #**gnuplot** O3lrE,Ev$K0UL#N"$k=q<0$GI=<(7h&$H7^$9,! "**set format x** $+**set xtics format** $N$$:l+$r;H$C$F%+%9%?%^%$:9k3HbG$-$^$9! #FCJL$J;~4V=q<0;XDj;R$K4X$7FO! "0J2<;2>H: **time_specifiers (p. 125)**! #B>$N>pJs$K$D$$$F$O! "0J2<b;2>H: **time/date (p. 46)**! #

MKF|<4L\@9$j (xdtics)

%3%^%s%I **set xdtics** $Ox <4$NL\@9jN9o$_$rMKF|$KJQ49$7$^$9 (0=Sun, 6=Sat)! #6 $r1[$($k>19g$O7 Kh$kM>$j$,;H$ol^$9! #**unset xdtics** O=$N8+=P7r%G%U%)%k%H$N7A<0KLa7$^$9! #B>$N<4KbF1$8$3Hr9TJ&F1MM$N%3%^%s%I$,MQ0U$5lF$$^$9! #

=q<0:

```
set xdtics
unset xdtics
show xdtics
```

ydtics, **zdtics**, **x2dtics**, **y2dtics**, **cbdtics** KbF1$8=q<0$,EvFO$^$j$^$9! #

0J2<b;2>H: **set format (p. 124)**! #

<4%i%Y%k (xlabel)

%3%^%s%I **set xlabel** $Ox <4$N8+=P7r@_Dj7^$9! #B>$N<4Kb8+=P7r@_Dj9kF1MM$N%3%^%s%I$,$"$j$^$9! #

=q<0:

```
set xlabel {"<label>"} {offset <offset>} {font "<font>{,<size>}"}
           {textcolor <colorspec>} {{no}enhanced}
           {rotate by <degrees> | rotate parallel | norotate}
show xlabel
```

F1$8=q<0$, **x2label**, **ylabel**, **y2label**, **zlabel**, **cblabel** KbE,MQ$5$1$^$9!#

<offset> $rx,y $+$^$?$Ox,y,z $N7A<0$G;XDj7?>19g$O!"8+=P$7$QM?$(i1$?CM$@$10\F0$5$1$^$9!#$=1K:BI87O$rA*Br$7$F!"$=$NA0$K**first**, **second**, **graph**, **screen**, **character** $N$$$:1+rD1k3HbG$-$^$9!#>\:Y$O!"0J2<;2>H: **coordinates (p. 24)**!#%G%U%)%k%HGO **character** :BI87O$,;H$o1^$9!#Nc$($P!""**set xlabel offset -1,0**" $O8+=P$7$Nx J}8~$N0LCVN_JQ99$7!"Bg$6CQ$K8@$C$F1J8;zJ,$NI}$@$18+=P7r:8K:i7$^$9!#1J8;zNBg-5O!"%U%)%s%H$H=PNO7A<0$NN>J}$K0MB8$7$^$9!#

<font> $O8+=P$7$,=q$+1k%U%)%s%H$r;XDj$9kN$K;H$o1^$9!#%U%)%s%H$N<size> (Bg$-$5) $NC10L$O!"IsJ=PNO7A<0$r;H$&$+$K0MB8$7$^$9!#

noenhanced $O!"3HD%J8;zNs=hM}(enhanced text) %b!<%I$,M-8z$KJC$F$$$k>19gGb!"%i%Y%kJ8;zNs$r3HD%J8;zNs=hM}$5$;$J$$$h$&$K7^$9!#

8+=P7r>C5n9kKO!"%*%W%7%g%srD1:$K<B9T$7$^$9!#Nc: "**set y2label**"

<4$N8+=P$7$N%G%U%)%k%H$N0LCV$O0J2<$NDLjG$9:

xlabel: x <4$N8+=P$7$O%0%i%U$N2<$N?Cf

ylabel: y <4$N8+=P$7$O%0%i%U$N:8$N?Cf$G!"?eJ?J}8~$K=q$+1k$+?bD>J}8~$KJk$+$O=PNO7A<00MB8

zlabel: z <4$N8+=P$7$O<4$NI=<(H00Ohj>e$G!"8+=P$7$N?Cf$,z <4$N?>e

cblabel: ?'8+K\(color box) $N<4$N8+=P7OH"$K1h$C$FCf1{B7$($5$1!"H"$N8~$-$,?eJ?$J$i2<$K!"?bD>Ji1&$K

y2label: y2 <4$N8+=P$7$Oy2 <4$NL&!#$=$N0LCV$O!"=PNO7A<00MB8$Gy <4$HF1MM$N5,B'$G7hDj!#

x2label: x2 <4$N8+=P$7$O%0%i%U$N>e$G!"%?%$%H%khj$O2<!#$3$1$O!"2~9TJ8;z$r;H$($P!"$=1KhkJ#?t$N9T$+iJ$kIA2h%?%$%H%k$Gx2 <4$N8+=P7r@8@.9k3H$b2DG=!#Nc:

```
set title "This is the title\n\nThis is the x2label"
```

$3$1$OFs=E0zMQId$r;H$&$Y$-$G$"$k3H$KCm0U$7F/$@$5$$!#3N>19g!"bA$m6s2$D$N9T$GF1$8%U%)%s%H$,;Ho1$^$9!#

2<!85IA2h$N>19g$Nx, x2, y, y2 <4$N%i%Y%k$NJ}8~($2sE>3Q)$O!"**rotate by** <3QEY> $r;XDj$9k3HGJQ99G-$^$9!#3<!85IA2h$Nx, y <4$N%i%Y%k$NJ}8~$O%G%U%)%k%HGO?eJ?J}8~KJCF$$$^9,!"**rotate parallel** $r;XDj$9k3HG<4$KJ?9T$K9k3H$,$G$-$^$9!#

b7<4$N0LCV$N%G%U%)%k%H$N0LCV$,5$$KF~iJ$$$JiP!"Beoj$K**set label** $r;H$CF/$@$5$$!#3N%3%^%s%I$OJ8;zNs$rI3$KG[CV$9k+rbCH<+M3$K@)8f$G$-$^$9!#

%P%C%/%9%i%C%7eJ8;zNs$N:nMQ!"5Z$SJ8;zNs$r0O$'C10l0zMQId$HFs=E0zMQId$N0c$$$K4X9khj>\7$$>pJsKD$$$F$O!"0J2<;2>H: **syntax (p. 45)**!#

7n<4L\@9$j (xmtics)

%3%^%s%I **set xmtics** $Ox <4$NL\@9jN8+=P7r7n$KJQ49$7$^$9!#1=Jan (1 7n)!"12=Dec (12 7n) HJj^$9!#12 $r1[$($??t;z$O!"12 $G3d$C$?$"$^$j$N7n$KJQ49$5$1$^$9!#**unset xmtics** $GL\@9$j$O%G%U%)%k%H$N8+=P7KLaj^$9!#B>$N<4KBP7FbF1$8Lr3d$r9kF1MM$N%3%^%s%I,MQ0U$5$1$F$$$^$9!#

=q<0:

```
set xmtics
unset xmtics
show xmtics
```

x2mtics, **ymtics**, **y2mtics**, **zmtics**, **cbmtics** KbF1$8=q<0$,E,MQ$5$1$^$9!#

0J2<$b;2>H: %3%^%s%I **set format (p. 124)**!#

<4HCOO;XDj (xrange)

%3%^%s%I **set xrange** $OI=< ($5lk?eJ?J}8~$NHCOO$r;XDj7^$9!#B>$N<4KbF1MM$N%3%^%s%I$,B8:_7^$9$7!"6K:BI8GNF07Br, G^2pJQ?tt, u, v KbB8:_7^$9!#

=q<0:

```
set xrange [{{<min>}:{<max>}}] {{no}reverse} {{no}writeback} {{no}extend}
           | restore
show xrange
```

$3$3$G <min> $H <max> $ODj?t!"?t<0!"$^$?$O'*' $G!"'*' $O<+F0=L<\5!G=$r0UL#7^$9!#F|;~%G!<%?$N>l9g!"HCOO$O **set timefmt** $N=q<0$K=>C?J8;zNs$r0zMQId$GOO$'I,MW$,$"$j$^$9!#<min> $d <max> $r>JN,$7$?>l9g$O!"8=:_NCMrJQ99$7$^$;$s!#K<+F0=L<\5!G=$K4X$9$k>\:Y$O2<$K=R$Y$^$9!#0J2<$b;2>H: **noextend** **(p. 108)**!#

yrange, **zrange**, **x2range**, **y2range**, **cbrange**, **rrange**, **trange**, **urange**, **vrange** $OF1$8=q<0$r;HMQ$7$^$9!#

x $Hx2 <4!"$"$k$$$Oy $Hy2 <4$NHCOO$r%j%s%/$9$k%*%W%7%g%s$K$D$$$F$OJ2<;2>H: **set link (p. 136)**!#

%*%W%7%g%s **reverse** $O!"<+F0=L<\$N<4$NJ}8~$r5UK7$^$9!#Nc$ ($P!"%G!<%?CM$NHCOO$, 10 $+$i100 G"kH$-!"$3lO!"set xrange [100:10] H7$?$N$HF1$8h&$K<+F0=L<\$7$^$9!#**reverse** $O!"<+F0=L<\$GOJ$$<4KBP7FO5!G=7^$;$s!#Cm0U: 3NJQ99$O!"%P!<%8%g%s4.7 $GF3F~$5l^7?!#

<+F0=L<\5!G=: <min> (F1MMN3H, <max> KbE,MQ5l$^$9) $,%"%9%?%j%9%/"*" $N>l9g$O<+F0=L<\5!G=$,%*%s$KJj$^$9!#$=$N>l9gN=NCMK!"2<8B<lb>!"$^$?$O=e8B<ub>!"$^$?$O=$NN>J}$N@)8B$rM?$(il$^$9!#=q<0$OOJ2<$NDLjG$9!#

```
{ <lb> < } * { < <ub> }
```

Nc$($P

```
0 < * < 200
```

$O<lb> = 0, <ub> = 200 HJj^$9!#$=Nh$&$J@_DjGO!"<min> $O<+F0=L<\$5l^9,!"$=$N:G=*E*JCMO0 $+$i200 $N4V$KJj$^$9(5-9f$O'<' G9$,N>C<NCMb4^$_$^$9)!#2<8B$+>e8B$r;XDj7J$$>l9g$O!"$=$N'<' $b>JN,$G$-$^$9!#<ub> $, <lb> hj>.$5$$>l9g$O!"@)8B$O%*%UKJ$j!"40A4$J<+F0=L<\$KJj$^$9!#3N5!G=$O!"<+F0=L<\$@1lIbHCOO$K@)8B$,$"$kB,Dj$G!<%?$NIA2h$d!"30$lCM$N%/%j%C%T%s$O!"$^$?$O%G!<%?,$=l[INHCOOrI,MWH7F$$J$/$F$b:G>.$NIA2hHCOO$rJ]>Z$9kN$KM-MQ$G7g$&!#

%*%W%7%g%s **writeback** $O!"**set xrange** $G@j$ail$F$$$k%P%C%U%!NCfK<+F0=L<\5!G=Kh$j:n$il?HCOO$rJ]B8$7$^$9!#3l$O!"$$/D+$N4X?t$rF1;~$KI=<($7!"7+$7=$NHCOOO=N&A$N$$/D+NbN+$i7hDj$5$;$?$>l9g$KJXMx$G$9!#**writeback** $N:nMQ$O!"**plot** $N<B9TCf$K5!G=9kNG!"$=$N%3%^%s%I$NA0$K;XDj9kI,MW$,$"j^$9!#:G8e$KJ]B8$7$??eJ?J}8~$NHCOO$O**set xrange restore** $GI|85$G$-$^$9!#Nc$r>e2^$9!#

```
set xrange [-10:10]
set yrange [] writeback
plot sin(x)
set yrange restore
replot x/2
```

3N>l9g!"y $NHCOO(yrange) $O sin(x) $NCM0h$H7F:nil$?[-1:1] $NJ}$KJj!"x/2 $NCM0h[-5:5] $OL5;k$5l^$9!#>e5-$N$=$l>lN%3%^%s%I$N8e$K**show yrange** $r<B9T$9lP!"$>e$G2?$,9T$Jol$F$$$k$+$rM}2r9k=u1KJkG7g&!#

2 <!85IA2hK*$$F!"**xrange** $H **yrange** $O<4$NHCOO$r7hDj$7!"**trange** $O!"G^2pJQ?t%b!<%I$NG^2pJQ?t$NHCOO!"$"$k$$$O6K:BI8%b!<%I$N3QEY$NHCOO$r7hDj$7$^$9!#F1MM$K3<!85G^2pJQ?t%b!<%I$G$O!"**xrange**, **yrange**, **zrange** $,<4$NHCOO$r41M}$7!"**urange** $H **yrange** $,G^2pJQ?t$NHCOO$r41M}$7$^$9!#

6K:BI8%b!<%IGO!"**rrange** $OIA2h$5lkF07B$NHCOO$r7hDj7^$9!#<rmin> $OF07B$X$NDI2C$ND j?tH7$F:nMQ$7!"0lJ}<rmax> $OF07B$r@Z$j<N$F$k(clip) h&$K:nMQ$7!"<rmax> $r1[$($?F07B$KBP9kE@$OIA2h$5l^$;$s!#**xrange** $H **yrange** $O1F6A$5l^$9!#$3li$NHCOO$O!"%0%i%U$, r(t)-rmin $N%0%i%U$G!"L\@9jN8+=P7K$O=$l$>$l rmin $r2C$($?$h$&$JbNG"k+Nh$&$K%;%C%H5l$^$9!#

A4FNHCOO$OItJ,E*$K!"$^$?$OA4BNE*$K<+F0=L<\$5l^9,!"%G!<%?$NIA2h$GJ1lP!"%Q%i%a!<%?JQ?t$N<+F0=L<\5!G=$OOUL#$,$J$$$G7g$&!#

HCOO$O **plot** $N%3%^%s%I%i%$%s>eGb;XDjG-$^$9!#%3%^%s%I%i%$%s>e$GM?$($il?HCOO$OC1$K$=$N **plot** %3%^%s%IG@$1;H$o$l!"**set** %3%^%s%I$G@_Dj5l$?HCOO$O$=$N8e$NIA2h$G!"%3%^%s%I%i%$%s$GHCOO$r;XDj$7$F$$$J$$$b$NA4$F$G;H$ol^$9!#$3lO **splot** $bF1$8$G$9!#

Nc:

x $NHCOO$r%G%U%)%k%HNCMK7^$9:

```
set xrange [-10:10]
```

y $NHCOO$,2<J}$XA}2C$9kh$&$K7^$9:

```
set yrange [10:-10]
```

z $N:G>.CM$K$O1F6A$rM?$($:$K(<+F0=L<\$5l?$^$^)!":GBgCMN_10 $K@_Dj$7$^$9:

```
set zrange [:10]
```

x $N:G>.CM$O<+F0=L<\$H$7!":GBgCM$OJQ99$7$^$;$s:

```
set xrange [*:]
```

x $N:G>.CM$r<+F0=L<\$H7^9,!"$=$N:G>.CM$O0 0J>e$K7^$9!#

```
set xrange [0<*:]
```

x $NHCOO$r<+F0=L<\$H7^9,!">.5/Fb 10 $+$i 50 $NHCOO$rJ];}7^$9(<B:]$O$=$lhjBg$-$/JkG7g&):

```
set xrange [*<10:50<*]
```

<+F0=L<\$G:GBgHCOO$r-1000 $+$i 1000!"9JoA[-1000:1000] Fb$G<+F0=L<\$7$^$9:

```
set xrange [-1000<*:*<1000]
```

x $N:G>.CM$r-200 $+$i 100 $N4V$N$I3$+K7$^$9:

```
set xrange [-200<*<100:]
```

<4<gL\@9$j;XDj (xtics)

x <4$N(8+=P$7ND$/) BgL\@9$j$O%3%^%s%I **set xtics** $G@)8f$G$-$^$9!#L\@9$j$O **unset xtics** $G>C$(!"**set xtics** $G(%G%U%)%k%H$N>uBV$N) L\@9$j$,$D$-$^$9!#y,z,x2,y2 <4$NBgL\@9jN@)8f$r9T$J$&F1MM$N%3%^%s%I$,$"j^$9!#

=q<0:

```
set xtics {axis | border} {{no}mirror}
          {in | out} {scale {default | <major> {,<minor>}}}
          {{no}rotate {by <ang>}} {offset <offset> | nooffset}
          {left | right | center | autojustify}
          {add}
          {  autofreq
           | <incr>
           | <start>, <incr> {,<end>}
           | ({"<label>"} <pos> {<level>} {,{"<label>"}...) }
          {format "formatstring"} {font "name{,<size>}"} {{no}enhanced}
          { numeric | timedate | geographic }
          { rangelimited }
          { textcolor <colorspec> }
set xtics
show xtics
```

F1$8=q<0$, **ytics**, **ztics**, **x2tics**, **y2tics**, **cbtics** KbE,MQ5l$^$9!#

axis $H **border** $O **gnuplot** $KL\@9$j(L\@9jN9o$_<+?H$H$=$N8+=P$7) $r!"$=l>$l<4$KD1kN$+!"6-3&$KD1kN$+$r;X<(7^$9!#<4$,6-3&KHFb6a$$>l9g!"**axis** $r;HMQ$9kHL\@9jN8+=P$7J8;z$r6-3&$N30$K

=P7F7^$&$G7g$&! #$3$N>19g<+F0E*$J%1%$%"%&%H%"%k%4%j%:% `$KhkM>Gr@_Dj$OBgDq$h$/$J$$bNHJC F7$^$$^$9! #

mirror $O**gnuplot** $KH?BPB&$N6-3&$NF1$80LCV$K!"8+=P$7NJ$$L\@9jr=PNO9kh&;X<(7^$9! #**nomirror** $O!"$"J?$,A[A|$7$F$$kDLjN3H$r9T$J$$^$9! #

in $H**out** $OL\@9$j$N9o$_$rFbB&$KIA$/$+3 0B&KIA/$+$r@ZjJQ($^$9! #

L\@9jN9o$_$N%5%$:$O**scale** $GD4@0$G$-$^$9! #<minor> $N;XDj$,>JN,$5$1$?>19g$O!"$=$1$O0.5*<major> KJj^$9! #%G%U%)%k%H$N%5%$:$O!"BgL\@9j,1.0 $G>.L\@9$j$,0.5 $G!"$3$1$O**scale default** $G8F$S$@$;$^$9! #

rotate $O!"J8;zNs$r90 EY2sE>5;$F=PNO$5$;$h$&$H7^$9! #$3$1$O!"J8;zNs$N2sE>$r%5%]!<%H7F$$k=PNO%I%i%$%P(terminal) GO<B9T$5$1$^$9! #**norotate** O3$1$r%-%c%s;%k7^$9! #**rotate by** <**ang**> $O3QEY <ang> $N2sE>$r9T$J$$^9,!"$3$1$O$$/D+$N=PNO7A<0(terminal) $G%5%]!<%H$5$1$F$$^$9! #

x $Hy <4$NBgL\@9jN%G%U%)%k%H$O**border mirror norotate** $G!"x2, y2 <4$O**border nomirror norotate** $,%G%U%)%k%H$G$9! #z <4$K$O!"**{axis | border}** %*%W%7%g%s$OL58z$G!"%G%U%)%k%H$O**nomirror** $G$9! #z <4$NL\@9$j$r%_%i!<2=$7$?$$J$i!"B?J, **set border** G=N?a$N6u4V$r$"$1kI,MW,$"$kG7g&! #

<offset> $O x,y $+$^$?$O x,y,z $N7A<0$G;XDj7^9,!"$=$1$K:BI87O$rA*Br7F!"$=$NA0$K **first**, **second**, **graph**, **screen**, **character** $N$$$:1+rD1k3HbG$-$^$9! #<offset> $O9o$_J8;z$N%G%U%)%k%H$N0LCV$+$iN:1rI=$7!"%G%U%)%k%H$N:BI87O$O**character** $G$9! #▶\:Y$O!"0J2<;2>H: **coordinates (p. 24)**!#**nooffset** O:i7$rL58z$K7^$9! #

Nc:

xtics rh$jIA2h$K6aE1$k:

```
set xtics offset 0,graph 0.05
```

%G%U%)%k%HGO8+=P$7%i%Y%k$O!"H~$7$7k2L$r@8$`h&$K!"<4$H2sE>3Q$K0MB8$7$?0LCV$K<+F0E*$K0LCV9g$o$;$5$1$^$9! #$=1,5$$K$$iJ1$1$P!"L@<(E*$K**left**, **right**, **center** $N%-!<%o!<%I$Khj0LCV9go;$rJQ99$G$-$^$9! #**autojustify** $G%G%U%)%k%H$N5sF0$KI|5"$7$^$9! #

%*%W%7%g%sJ7$G**set xtics** $r<B9T$9kH!"L\@9j,I=<($5$1$k>uBV$G$"$1$P!"$=1O%G%U%)%k%H$N6-3&!"$^$?$O<4$rI|85$7!"$=$&GJ$1$1$P2?$b7^$;$s! #$=$NA0$K;XDj$7$?L\@9$j$N4V3V!"0LCV($H8+=P$7) $OJ];}$5$1$^$9! #

L\@9jN0LCV$O!"%G%U%)%k%H!"$^$?$O%*%W%7%g%s **autofreq** $,;XDj$5$1$F$$$1$P<+F0E*$K7W;;$5$1$^$9! #$=$&GJ$1$1$P!"<!$N2 DN7A<0$G;XDj$5$1$^$9:

0E<(E*$J<start>, <incr>, <end> 7A<0$O!"L\@9$jNNsr<start> $+$i<end> $N4V$r<incr> $N4V3V$GI=<(7^$9! #<end> $r;XDj$7J1$1$P!"$=$1$OL58BBg$H$_J$5$1$^$9! #<incr> OIiNCM$b2DG=$G$9! #<start> $H<end> $NN>J}$,;XDj$5$1$F$$$J$>19g!"<start> $O-!g!"<end> $O+!g$H$_J$5$1!"L\@9$j$O<incr> $N@0?tG\$N0LCV$KI=<($5$1$^$9! #<4$,BP?t<4$N>19g!"L\@9$j$N4V3V(A}J,) $O!"G\?t$H7F;HMQ$5$1$^$9! #

Ii$N<start> $d<incr> $r!"?tCM$N8emK;XDj9k$H(Nc$($P**rotate by** <**angle**> H+**offset** <**offset**> $N8e$m)!"gnuplot $N9=J82r@O4o$O!"$=$NCM$+$i$=$NIi$N<start> $d<incr> NCMN0z$-;;$r9T$*$&H9$k4V0c$$$rHH7^$9! #$3$1$r2sHr9kKO!"$=$Nh&$J>19g$O!"**0-**<**start**> $d**0-**<**incr**> Nh$&$K;XDj7F$/$@$5$$! #

Nc:

```
set xtics border offset 0,0.5 -5,1,5
```

:G8e$N',' NH3m$G<:GT7^$9! #

```
set xtics border offset 0,0.5 0-5,1,5
```

$+

```
set xtics offset 0,0.5 border -5,1,5
```

Ji$P!"$Acs$H;X<(DL$j$K!"L\@9$j$r6-3&$K!"L\@9$j8+=P$7J8;zNs$r 0,0.5 J8;zJ,$@1:i7$F!"start, increment, end r=1>$1-5,1,5 $K@_Dj$7$^$9! #

set grid $N%*%W%7%g%s 'front', 'back', 'layerdefault' $b!"x<4$NL\@9jNIA2h$N=g=x$K1F6A7^$9! #

Nc:

L\@9jr0, 0.5, 1, 1.5, ..., 9.5, 10 $N0LCV$K@8@.

```
set xtics 0,.5,10
```

L\@9jr ..., -10, -5, 0, 5, 10, ... $K@8@.

```
set xtics 5
```

L\@9jr 1, 100, 1e4, 1e6, 1e8 $K@8@.

```
set logscale x; set xtics 1,100,1e8
```

L@< (E*$J("<label>" <pos> <level>, ...) $N7A<0$O!"G$0U$NL\@9jN0ICV!"$"$k$$O?t;zGJ$$8+=P7N@8@. $b2DG=$K7^$9!#$3$N7A<0$G$O!"L\@9$j$O0ICV$N?t;z$N=g$KM?$($kI,MWO"j^$;$s!#3FL\@9jO0ICV(pos) $H8+=P$7(label) $r;}$A$^$9$,!"8+=P$7$OI,?\$GO"j^$;$s!#8+=P7OFs=E0zMQId$G0O$^l?J8;zNsG"$k 3H$KCm0U$7F/$@$5$$!#$=$l$O!""hello" Nh$&$J8GDjJ8;zNsGb9=$$$^$;$s$7!""%3f clients" Nh$&K= $N0ICV$r?t;z$KJQ49$9$k=q<0J8;zNs$r4^sG$b9=$$$^$;$s$7!"6uJ8;zNs"" Gb9=$$$^$;$s!#hj>\$7$$>pJs KD$$F$O!"0J2<;2>H: **set format (p. 124)**!#b7!"J8;zNs$,M?$(ilJllP!"%G%U%)%k%H$N?t;z$N8+=P 7,;HMQ5l$^$9!#

L@<(E*$J7A<0$G$O3 $DL\$N%Q%i%a!<%?H7$F%l%Y%k$r;XDjG-$^$9!#%G%U%)%k%H$N%l%Y%k$O0 $G!"$3lOBgL\ @9jr0UL#$7!"%l%Y%k1 $N>19g$O>.L\@9jr@8@.7^$9!#%i%Y%k$O!">.L\@9jK$O7h$7FIU-$^$;$s!#BgL\@9 jH>.L\@9jOgnuplot $,<+F0E*$K@8@.7^9,!"%f!<%6$,L@<(E*$K;XDjbG$-$^$9!#%l%Y%k$,2 0J>e$NL\@9 jO!"%f!<%6$,L@<(E*$K;XDj7J1lPJi:!"<+F0@8@.$NL\@9jhjb9b$$M%@hEY$r;}$A$^$9!#3F%l%Y%k$N L\@9$j$N9o$_NBg-5O!"**set tics scale** $G@)8f$7$^$9!#

Nc:

```
set xtics ("low" 0, "medium" 50, "high" 100)
set xtics (1,2,4,8,16,32,64,128,256,512,1024)
set ytics ("bottom" 0, "" 10, "top" 20)
set ytics ("bottom" 0, "" 10 1, "top" 20)
```

2 HVL\$NNcGO!"A4FNL\@9j,8+=P$7IU$1$5$l$^$9!#3 HVL\$NNcGO!"C<NbN@1,8+=P$7IU$1$5$l$^$9!# 4 HVL\$NNc$N!"8+=P$7NJ$$L\@9jO>.L\@9jKJj$^$9!#

DI>oL@<(E*$J(<jF0$N) L\@9$j0ICV$,M?$($il?>19g!"<+F0E*$K@8@.$5lkL\@9jO;Hol$^$;$s!#5U$K!"**set xtics auto** Nh$&$JbN$,;XDj$5l?>19g$O!"0JA0$K<jF0$G@_Dj$7$?L\@9$j$O>C$5lF7^7^$9!#$3$N<jF0 $NL\@9$j$H<+F0E*$JL\@9jr6&B8$5$;kK$O%-!<%o!<%I **add** $r;HMQ$7F/$@$5$!#$3lOI2C9kL\@9jN %9%?%kNA0$K=q$+JJ1l$P$$1$^$;$s!#

Nc:

```
set xtics 0,.5,10
set xtics add ("Pi" 3.14159)
```

3l$O<+F0E*$KL\@9jN9o$_$r x <4$K0.5 4V3V$GD1$^$9$,!"&P$NH3mKL@<(E*$J8+=P$7$bDI2C$7$^$9!#

7+$7;XDj$7Fb!"I=<(5lkN$O"$/$^$GIA2hHO0ONbN@1G$9!#

L\@9jN8+=P7N=q<0($^$?$O>JN,)$O**set format** $G@)8f$5l^$9!#$?$@$7$=$l$O**set xtics** (<label>) $N 7A<0$NL@<(E*$J8+=P$7J8;zNs$,4^$^lF$$$J$$>19g$@$1$G$9!#

(8+=P$7IU$1$5$l$J$$) >.L\@9jO!"**set mxtics** %3%^%s%I$G<+F0E*$KDI2C9k$+!"$^$?$OICV$r<jF0$G **set xtics ("" <pos> 1, ...)** $N7A<0$GM?$($k3HbG$-$^$9!#

Xtics timedata

;~4V$HF|IU$OFbItGOIC?tH7$FJ];}$5lF$$$^$9!#

F~NO: Hs?tCM$NF|;~CM$O!"F~NO;~$K **timefmt** $G;XDj$7$?=q<0$rMQ$$$FIC?t$KJQ49$7$^$9!#<4KBP9$k0ICV$d <4$NHO0O$b **timefmt** $G2r<a$5lkF|;~$G!"0zMQId$G0OsGM?$($^$9!#<start>, <incr>, <end> 7A<0$r;H$& >19g!"<incr> $OICC10L$GM?$($J1l$P$$$1$^$;$s!#F~NO%G!<%?$N2r<aKO**timefmt** $r;H$CF/$@$5$$!#<4 $NHO0O$HL\@9jN0ICV$O!"**set xdata time** $GJQ99$5$1$^$9!#

=PNO: <4$NL\@9$j%i%Y%k$O!"**set format** $+**set xtics format** $N$$:l+$G;XDj$5l?!"JL$N=q<0$r;HCF@8@.7^$9!#%G%U%)%k%H$G$O!"$=lCDL>o$N?tCM=q<0;XDj$G$"$k$HG'<1$7$^$9$,(**set xtics numeric**)!"B>$K!" COM}:BI8(**set xtics geographic**) $d!"F|;~$G!<%?(**set xtics time**) $N%*%W%7%g%s$,$"$j$^$9!#

Cm0U: 0JA0NHGN gnuplot HN8_49@-N?$a!"%3%^%s%I **set xdata time** $b0EL[$K **set xtics time** $r<B9T$7$^$9$7!"**set xdata** $d **unset xdata** $O0EL[$K **set xtics numeric** $X%j%;%C%H$7$^$9!#7+$7!"$3lO$=$N8e$K **set xtics** $r8F$S=P$9$3HGJQ99G-$^$9!#

Nc:

```
set xdata time            # F~NO%G!<%?$N2r<a$N@)8f
set timefmt "%d/%m"       # F~NO%G!<%?$NFI$_9~$_$N=q<0
set xtics timedate        # =PNO=q<0$N2r<a$N@)8f
set xtics format "%b %d" # L\@9$j%i%Y%k$G;H$&=q<0
set xrange ["01/12":"06/12"]
set xtics "01/12", 172800, "05/12"


set xdata time
set timefmt "%d/%m"
set xtics format "%b %d" time
set xrange ["01/12":"06/12"]
set xtics ("01/12", "" "03/12", "05/12")
```

3liQN>J}Hb "Dec 1", "Dec 3", "Dec 5", $NL\@9$j$r@8@.$7$^$9$,!"2 HVL\$NNc "Dec 3" $NL\@9$j$O8+=P$7IU$1$5l^$;$s!#

Geographic

set xtics geographic $O!"x<4$NCM$,EY$NC10L$NCOM}:BI8$G$"$k3H$r0UL#$7$^$9!#$=$N<4$N9o$_$N8+=P$7$NI=8=$N;XDjKO!"**set xtics format** $+**set format x** $r;H$$$^$9!#COM}:BI8%G!<%?$K4X9k=q<0;XDj;R$O0J2<$NDL$j:

```
%D                    = EY$N@0?tI=<(
%<width.precision>d   = EY$NIbF0>.?tI=<(
%M                    = J,$N@0?tI=<(
%<width.precision>m   = J,$NIbF0>.?tI=<(
%S                    = IC$N@0?tI=<(
%<width.precision>s   = IC$NIbF0>.?tI=<(
%E                    = +/- $G$J$/ E/W $N%i%Y%k
%N                    = +/- $G$J$/ N/S $N%i%Y%k
```

Nc$($P!"%3%^%s%I**set format x "%Ddeg %5.2mmin %E"** $O!"x:BI8$N-1.51 $H$$$&CM$r" **1deg 30.60min W"** Nh$&$KI=<(7^$9!#

xtics $,%G%U%)%k%H$N>uBVN^$^(**set xtics numeric**) $N>19g$O!":BI8$O10?J?t$NEY$GI=<($7!"**format** $b>e$NFCJL$J5-9f$GOJ$/!"DL>o$N?tCM=q<0$,;H$olF$$$kH_J5l^$9!#

Xtics rangelimited

3N%*%W%7%g%s$O!"<+F0E*$K@8@.5l$k<4$NL\@9jN8+=P7H!"IA2h5l$?%G!<%?$G<B:]$KM?$(il$kHO0O$KBP1~9kIA2h6-3&$NN>J}$r@)8B7^$9!#$3lOIA2hKBP9$k8=:_$NHO0O@)8BHOL54X78G"k3HKCm0U7F$/$@$5$$!#Nc$($P%G!<%?"file.dat" $N%G!<%?$,9Y$F $2 < y < 4$ $NHO0O$K$"$kH9kH!"0J2<$N%3%^%s%I$O!":8B&$NIA2h6-3&(y<4) $Oy $NHO0OA4BN([0:10]) N3$NItJ,([2:4]) N_$,IA2h$5$l!"$3$NHO0O([2:4]) $N<4$NL\@9jN$_$,:nil$kIA2h$r@8@.7^$9!#$D$^$j!"IA2h$Oy $NHO0OA4BN([0:10]) $K3HBg$5l^9,!":8$N6-3&$O0 $+$i2 $N4V!"4 $+$i10 $N4V$O6uGrNN0hHJj^$9!#$3$N%9%?%$k$O!"HO0OH%0%i%U(range-frame) Hb8FPl$^$9!#

```
set border 3
set yrange [0:10]
set ytics nomirror rangelimited
plot "file.dat"
```

Xy J?LL0LCV (xyplane)

set xyplane %3%^%s%I$O3D IA2h$GIA$+$l$k xy J?LL$N0LCV$rD4@0$9kN$K; H$ol^$9! #8eJ}8_49@-$N$?$a$K! " "set ticslevel" $bF1$80UL#$N%3%^%s%I$H7F; H$&$3H,G-$^$9! #

=q<0:

```
set xyplane at <zvalue>
set xyplane relative <frac>
set ticslevel <frac>        # set xyplane relative $HF1Ey
show xyplane
```

set xyplane relative <**frac**> $O! "xy J?LL$rZ <4$NHO0O$NI3KCV/$+$r7hDj7^$9! #<frac> KO! "xy J?LL$Hz $N0lHV2<$N0LCVHN: 9$N! "z <4$NHO0OA4BNKBP9$k3d9g$rM?$($^$9! #%G%U%)%k%H$NCM$O0.5 $G$9! #IiNCMb5v5l$F$$$^9,! "$=$&9k$H3 DN<4$NL\@9jN8+=P7,=EJk2DG=@-$,$"j^$9! #

b&0lDN7A<0G"$k **set xyplane at** <**zvalue**> $O! "8=:_$Nz $NHO0O$r5$$K9k3HJ/! "; XDj7?z NCMN0LCV$K xy J?LL$r8GDj7^$9! #$hCF! "x,y,z <4$r6&DL$N86E@rDLkh&K9kK$O! "**set xyplane at 0** H9lP$$$$3HKJj$^$9! #

0J2<$b; 2>H: **set view (p. 172)**, **set zeroaxis (p. 183)**! #

Xzeroaxis

%3%^%s%I **set xzeroaxis** $Oy = 0 $ND>@~$rIA$-$^$9! #>\:Y$K4X7F$O! "0J2<; 2>H: **set zeroaxis (p. 183)**! #

Y2data

%3%^%s%I **set y2data** $Oy2 (1&) <4$N%G! <%?$r; ~7ONs(F|; ~) 7A<0$K@_Dj7^$9! #>\:Y$O! "0J2<; 2>H: **set xdata (p. 174)**! #

Y2dtics

%3%^%s%I **set y2dtics** $Oy2 (1&) <4$NL\@9jrMKF|$KJQ99$7$^$9! #>\:Y$O! "0J2<; 2>H: **set xdtics (p. 174)**! #

Y2label

%3%^%s%I **set y2label** $Oy2 (1&) <4$N8+=P7r@_Dj7^$9! #>\:Y$O! "0J2<; 2>H: **set xlabel (p. 174)**! #

Y2mtics

%3%^%s%I **set y2mtics** $Oy2 (1&) <4$NL\@9jr1G/$N3F7n$KJQ99$7$^$9! #>\:Y$O! "0J2<; 2>H: **set xmtics (p. 175)**! #

Y2range

%3%^%s%I **set y2range** $Oy2 (1&) <4$NI=<(5l$k?bD>HO0O$r@_Dj7^$9! #%3%^%s%I%*%W%7%g%s$N9YFN@bL@KD$$F$O! "0J2<; 2>H: **set xrange (p. 176)**! #3N%3%^%s%I$O! "y2 <4$,L@<(E*$Ky <4$K%j%s%/(link) 5l$F$$k>19g$OL5; k$5l^$9! #0J2<; 2>H: **set link (p. 136)**! #

Y2tics

%3%^%s%I **set y2tics** $Oy2 (1&) <4$N! "8+=P$7IU$1$5$l$kBgL\@9$j$N@)8f$r9T$J$$$^$9! #>\:Y$O! "0J2<; 2>H: **set xtics (p. 177)**! #

Y2zeroaxis

%3%^%s%I **set y2zeroaxis** $O!"86E@$rDL$ky2 (1&) <4 (x2 = 0) rIA-$^$9!#>\:Y$O!"0J2<;2>H **set zeroaxis (p. 183)**!#

Ydata

%3%^%s%I **set ydata** $Oy <4$N%G!<%?$r;~7CNs(F|;~) 7A<0$K@_Dj7^$9!#0J2<;2>H **set xdata (p. 174)**!#

Ydtics

%3%^%s%I **set ydtics** $Oy <4$NL\@9jrMKF|$KJQ99$7$^$9!#>\:Y$O!"0J2<;2>H **set xdtics (p. 174)**!#

Ylabel

3N%3%^%s%I$Oy <4$N8+=P7r@_Dj7^$9!#0J2<;2>H **set xlabel (p. 174)**!#

Ymtics

%3%^%s%I **set ymtics** $O!"y <4$NL\@9jr7n$KJQ99$7$^$9!#>\:Y$O!"0J2<;2>H **set xmtics (p. 175)**!#

Yrange

%3%^%s%I **set yrange** $O!"y J}8~$N?bD>HC0C$r@_Dj$7$^$9!#>\:Y$O!"0J2<;2>H **set xrange (p. 176)**!#

Ytics

%3%^%s%I **set ytics** $Oy <4$N(8+=P$7IU$1$5$l$k) BgL\@9$j$r@)8f$7$^$9!#>\:Y$O!"0J2<;2>H **set xtics (p. 177)**!#

Yzeroaxis

%3%^%s%I **set yzeroaxis** $Ox = 0 $ND>@~(y <4) $r=q$-$^$9!#>\:Y$O!"0J2<;2>H **set zeroaxis (p. 183)**!#

Zdata

%3%^%s%I **set zdata** $Oz <4$N%G!<%?$r;~7CNs(F|;~) 7A<0$K@_Dj7^$9!#0J2<;2>H **set xdata (p. 174)**!#

Zdtics

%3%^%s%I **set zdtics** $Oz <4$NL\@9jrMKF|$KJQ99$7$^$9!#>\:Y$O!"0J2<;2>H **set xdtics (p. 174)**!#

Zzeroaxis

%3%^%s%I **set zzeroaxis** $O(x=0,y=0) rDLkD>@~rIA-$^$9!#3l$O!"2D IA2h!"$*hS **set view map** GNsplot GO8zNO$r;}$A$^$;$s!#>\:Y$O!"0J2<;2>H **set zeroaxis (p. 183)**, **set xyplane (p. 181)**!#

Cbdata

3N%3%^%s%I$O%+%i!<%\%C%/%9<4$N%G!<%?$r;~7CNs(F|;~) 7A<0$K<0$K@_Dj$7$^$9!#0J2<;2>H **set xdata (p. 174)**!#

Cbdtics

%3%^%s%I **cbdtics** $O%+%i!<%\%C%/%9<4$NL\@9jN9o$_$rMKF|$KJQ49$7$^$9!#>\:Y$O!"0J2<;2>H **set xdtics (p. 174)**!#

%<%mogCM (zero)

zero NCMO!"0.0 $K6a$$%G%U%)%k%H$NogCM$rI=7^$9!#

=q<0:

```
set zero <expression>
show zero
```

gnuplot $O!"(J#AG?tCM$r;}$DE@$NIA2hK*$$F$O) $=$NCM$N5u?tItJ,$N@dBPCM$, **zero** ogCM$hjBg-$$>19g (D^$j<B?t$G$J$$CM$r;}$DE@) $O!"$=$NE@$rIA2h7^$;$s!#%3$NogCM$O **gnuplot** $NB>$NMM!9$JItJ,$K$*$$F$=$N(Bg$^$+$J) ?tCM8m:9$NogCMH7Fb;Hol$F$$$^$9!#%G%U%)%k%H$N **zero** NCMO1e-8 $G$9!#1e-3 (=E57?E*$J%S%C%H%^%C%W%G%#%9%W%l%$$N2rA|EY$N5U?t) hjBg$-$$ **zero** NCMO@_Dj9Y$-$GOJ$$$G7g$&$,!"**zero** $r0.0 $H@_Dj$9kN$OOUL#$N$J$$3HGO"j^$;$s!#

%<%m<4 (zeroaxis)

x <4$O **set xzeroaxis** KhCFIA$+$l!"**unset xzeroaxis** KhCF:o=|5l$^$9!#F1MM$Ny, x2, y2, z <4MQ$N%3%^%s%I$,F1MM$NF/$-$r7^$9!#**set zeroaxis ...** (A0CV;l$J$7) $O!"x, y, z <4$9YF$K5!G=$7$^$9!#

=q<0:

```
set {x|x2|y|y2|z}zeroaxis { {linestyle | ls <line_style>}
                          | { linetype | lt <line_type>}
                            { linewidth | lw <line_width>}}
unset {x|x2|y|y2|z}zeroaxis
show {x|y|z}zeroaxis
```

%G%U%)%k%HGO!"3liN%*%W%7%g%s$O%*%U$KJC$F$$$^$9!#A*Br$5l?0 $N<4$O <line_type> $N@~$N7?$H <line_width> $N@~$NI}(8=:_;HMQ7F$$$k=PNO7A<0$,%5%]!<%H$P) $G!"$"$k$$$O$"$i$+$8$aDj5A$5l?<line_style> $N%9%?%$%kGIA+l^$9!#

@~$N7?$r;XDj7Jll$P!"<4$CDL>o$N<4$N@~$N7?(7?0) GIA+l^$9!#

Nc:

y=0 $N<4$r8+$($kh&$K4JC1$K=q$/>19g:

```
set xzeroaxis
```

B@$$@~K7$F!"0c$C$??'!"$^$?$OE@@~%Q%?!<%sK7$?$$>19g:

```
set xzeroaxis linetype 3 linewidth 2.5
```

Zlabel

3N%3%^%s%I$Oz <4$N8+=P7r@_Dj7^$9!#0J2<;2>H **set xlabel (p. 174)**!#

Zmtics

%3%^%s%I **set zmtics** $Oz <4$NL\@9jr7n$KJQ99$7$^$9!#>\:Y$O!"0J2<;2>H **set xmtics (p. 175)**!#

Zrange

%3%^%s%I **set zrange** $Oz <4J}8~$KI=<(5l$kHO0O$r@_Dj7^$9!#$3$N%3%^%s%I$O **splot** KN$_M-8z$G!"**plot** GOL5;k5l$^$9!#>\:Y$O!"0J2<;2>H **set xrange (p. 176)**!#

Ztics

%3%^%s%I **set ztics** $O z <4$N(8+=P$7IU$1$5$l$k) BgL\@9$j$r@)8f$7$^$9!#>\:Y$O!"0J2<;2>H **set xtics (p. 177)**!#

Cblabel

3N%3%^%s%I$O%+%i!<%\%C%/%9<4$N8+=P7r@_Dj7^$9!#0J2<;2>H**set xlabel (p. 174)**!#

Cbmtics

%3%^%s%I**set cbmtics** $O%+%i!<%\%C%/%9<4$NL\@9jN8+=P7r7n$KJQ49$7$^$9!#>\:Y$O!"0J2<;2>H **set xmtics (p. 175)**!#

Cbrange

%3%^%s%I**set cbrange** $O!"%9%?$%k **with pm3d**, **with image** $d**with palette** JIKhCF8=:_$N%Q%l%C%H(**palette**) $r;H$C$F?'IU$1$5$lkCMNHC0O$r@_Dj$7$^$9!#$=$NHC0O30NCMKBP7F$O!":G$b6a$$8B3&NCMN?'$,;HMQ$5l^$9!#

%+%i!<%\%C%/%9<4(cb-<4) $, **splot** $G<+F0=L<\$5lF$$$k>l9g$O!"$=$N%+%i!<%\%C%/%9$NHC0O$O **zrange** $,;H$ol^$9!#**splot ... pm3d|palette** $GIA2h$5lkE@$O!"0[$J$k **zrange** $H **cbrange** $r;H$&3H$G%U%#%k%?%j%s%0$G$-$^$9!#

set cbrange $N=q<0$K4X9k>\:Y$O!"0J2<;2>H **set xrange (p. 176)**!#0J2<$b;2>H**set palette (p. 152)**, **set colorbox (p. 114)**!#

Cbtics

%3%^%s%I**set cbtics** $O%+%i!<%\%C%/%9<4$N(8+=P$7IU$1$5$l$k) BgL\@9$j$r@)8f$7$^$9!#>\:Y$O!"0J2<;2>H **set xtics (p. 177)**!#

%7%'%k%3%^%s%I (shell)

shell %3%^%s%I$OBPOCE*$J%7%'%k$r5/F0$7$^$9!#**gnuplot** KLakKO!"VMS GO **logout** $r!"Unix Ji$P **exit** b7$/$OEND-OF-FILE J8;z$r!"MS-DOS $+OS/2 Ji$P **exit** $rF~NO$7$F2<$5$$!#

%7%'%k%3%^%s%I$r<B9T$9$kJ}K!$O2 D"j^$9:%3%^%s%I**system** $r;H$&$+**!** (VMS GO$) $r;H$&$+!#A0<T$O!"%3%^%s%IJ8;zNs$r%Q%i%a!<%?$H7F<hkN$G!"B>$N gnuplot %3%^%s%INI3Gb;H$&$3H,G-$^$9$,!"8e<T$N=q<0$O!"$=$N9T$K$=$N%3%^%s%I$?$@0lDG$"$k3H$rMW5a$7$^$9!#3liN>l9g%3%^%s%I$,=*N;$9kH$9$0$K@)8f$O**gnuplot** KLaCF-$^$9!#Nc$($PMS-DOS, OS/2 GO!"

```
! dir
```

$^$?$O

```
system "dir"
```

H9kH%G%#%l%/%H%j$N0lMw$rI=<(7F**gnuplot** KLaCF-$^$9!#

system $r;H$&B>$NNc:

```
system "date"; set time; plot "a.dat"
print=1; if (print) replot; set out; system "lpr x.ps"
```

Splot

splot $O 3 <!85IA2h$N$?$a$N%3%^%s%I$G$9($bAms4B8CNG7g&$,!"<B:]$KO=$N2<!85$X$N<M1F)!#$=lO!"**plot** %3%^%s%I$N3<!85HG$G$9!#**splot** $O!"$=l>$lC10l$Nx, y, z <4$rDs6!$9k@1G!"**plot** $GMQ0U$5lF$$$kBh2<4x2, y2 Nh$&$JbNO"j^$;$s!#

2<!85$H3<!85IA2h$NN>J}$G;H$($kB?$/$N%*%W%7%g%s$K$D$$$F$O!"0J2<;2>H:**plot (p. 80)**!#

=q<0:

```
splot {<ranges>}
      {<iteration>}
      <function> | {{<file name> | <data block name>}
                    {datafile-modifiers}}
      {<title-spec>} {with <style>}
      {, {definitions{,}} <function> ...}
```

%3%^%s%I**splot** $O!"4X?t$+$i@8@.$5l?%G!<%?!"$^$?$O%G!<%?%U%!%$%k$+$iFI$_9~$s$@%G!<%?!"$^$?$O;vA0$KJ]B8$5l?L>A0IU$-%G!<%?%V%m%C%/$N%G!<%?$r=hM}$7$^$9!#%G!<%?%U%!%$%kL>$O!"DL>c0zMQId$G0O$s$@J8;zNs$H7FM?$($^$9!#4X?t$O1K\$N?t<0G9$,!"G^2pJQ?t%b!<%I(parametric) GO3 DN?t<0NAHH7FM?$($^$9!#

%G%U%)%k%HGO!"**splot** $OIA2h$5lk%G!<%?$N2<$K4 0A4$Jxy LL$rIA$-$^$9!#z $N0lHV2<$NL\@9jHxy J?LL$N0lCV4X78$O**set xyplane** $GJQ9$G$-$^$9!#**splot** $N<M1F$N8~$-$O**set view** $G@)8f$G$-$^$9!#>\:Y$O!"0J2<;2>H:**set view (p. 172)**, **set xyplane (p. 181)**!#

splot %3%^%s%I$NHO0O$;XDj$N=q<0$O**plot** $N>19g$HF1$8$G$9!#G^2pJQ?t%b!<%I(parametric) GJ1l$P!"HO0O;XDj$O0J2<$N=g$G!"

```
splot [<xrange>][<yrange>][<zrange>] ...
```

G^2pJQ?t%b!<%I(parametric) GO!"HO0O;XDj$O0J2<$N=g$GM?$(J1lP$$$1$^$;$s:

```
splot [<urange>][<vrange>][<xrange>][<yrange>][<zrange>] ...
```

title %*%W%7%g%s$b**plot** $HF1$8$G$9!#**with** $b**plot** H[$\F1$8G9$,!"2<!85$NIA2h%9%?%$%kA4It$,;H$($ko1G"j^$;$s!#

datafile %*%W%7%g%sKO5iK0o$$$,$"$j$^$9!#

G^2pJQ?t%b!<%I(parametric) $d4X?t$rMxMQ7F6JLLrIA/JL$NJ}K!$K!"5?;w%U%!%$%k'++' $rMxMQ$7$Fxy J?LL$N3J;R$N>e$KI8K\E@$r@8@.$9kd$jJ}$,$"$j$^$9!#

0J2<$b;2>H:**show plot (p. 148)**, **set view map (p. 172)**, **sampling (p. 98)**!#

%G!<%?%U%!%$%k (datafile)

plot $HF1$8h&$K!"**splot** $G%U%!%$%k$+$i%0%i%U$r@8@.$G$-$^$9!#

=q<0:

```
splot '<file_name>' {binary <binary list>}
                    {{nonuniform} matrix}
                    {index <index list>}
                    {every <every list>}
                    {using <using list>}
```

"" $d"-" $H$$$C$?FCJL$J%U%!%$%kL>$b**plot** $HF1MM$K5v5l$^$9!#0J2<;2>H:**special-filenames (p. 90)**!#

<jC;$K$$&$H!"**binary** $d**matrix** O=$N%G!<%?$,FCJL$J7A$G"k3Hr!"**index** $OB?=E%G!<%?=89g%U%!%$%k$+$iIN%G!<%?=89g$rA*$s$GIA2h$9k+$r!"**every** $O3F%G!<%?=89g$+iI$N%G!<%?9T(ItJ,=89g) $rA*$s$GIA2h$9k+$r!"**using** $O3F%G!<%?9T$+iINh$&$KNs$rA*$V$+$r;XDj7^$9!#

index $H**every** %*%W%7%g%s$O**plot** $N>19g$HF1$8$h$&$K?6Iq$$^$9!#**using** $b!"**using** $N%j%9%H$,2DGJ/3DI,MWG"kH$$&3H$r=|$$F$CF1MM$G$9!#

plot $N%*%W%7%g%s$G"$k**smooth** $O**splot** GOMxMQG-$^$;$s!#7+$7!"**cntrparam** $d**dgrid3d** $,!"@)8B$5lF$O$$^9,J?3j2=N?aKMQ0U5l$F$$^$9!#

%G!<%?%U%!%$%k$N7A<0$O!"3FE@$,(x,y,z) $N3 DAHG$"$k0J30$O!"K\<AE*$Kplot $HF1$8$G$9!#b70lDNCM$@$1$,M?$(illP!"$=$l$Oz H7$F;Hol!"%G!<%?%V%m%C%/HV9f$,y H7$F!"$=7Fx O=$N%G!<%?%V%m%C%/FbGNHV9f$,;Hol$^$9!#b72 $D!"$"$k$$$O4 DNCM$,M?$(illP!"gnuplot O=$N:G8e$NCM$rpm3d plot GN?'$N7W;;$K;H$$$^$9!#3 DNCM$O(x,y,z) NAHH8+J5l^$9!#B>$KCM$,$"lP!"$=$l$O0lHL$K8m:9$H8+$J5l$^$9!#$=$l$Ofit $G;H$&3H$,2DG=$G$9!#

splot $N%G!<%?%U%!%$%kGO!"1 9T$N6u9T$O%G!<%?%V%m%C%/$NJ,N%;R$G$9!#splot $O8D!9$N%G!<%?%V%m%C%/$r!"4X?t$Ny-8IN)@~$HF1$8bNH7$F07$$$^$9!#1 9T$N6u9T$GJ,N%$5lF$$$kE@F1;N$O@~J,$G7kPlk3HO$"$j$^;;$s!#A4FN%G!<%?%V%m%C%/$,A4$/F1$8E@$N?t$r;}$D>19g!"gnuplot $O%G!<%?%V%m%C%/$r2#CG$7!"BP1~$9$kE@F1;N$r7k$V8IN)@~$rIA$-$^$9!#$3lO"grid data" $H8F$P$l!"6JLL$NIA2h!"Ey9b@~$NIA2h(**set contour**)!"1#@~=hM}(**set hidden3d**) GO!"3N7A$N%G!<%?$"k3H,I,MWHJj$^$9!#0J2<$b;2>H **splot grid_data (p. 188)**!#

3 Ns$N**splot** %G!<%?$K$*$$F$O!"G^2pJQ?t%b!<%I(**parametric**) $r;XDj$9k3HO%b$O%dIlMW$G$9!#

Matrix

gnuplot $O!"matrix (G[Ns) 7A<0$N%G!<%?!"2 DN0[Jk7A<0$G2r<a$9k3$H,$G$-$^$9!#

$=$N1 DO!"x, y $N:BI8$,0lMMG"kH2>Dj7F!"$=$NCMr3$N0lMM$J3J;R$Nmatrix N=l>lNMWAGM[i,j] $K3d$jEvFkJ}K!$G$9!#3djEvFil$kx :BI8$O[0:NCOLS-1] $NHO0O$N@0?t$G$9!#3djEvFil$ky :BI8$O[0:NROWS-1] $NHO0O$N@0?t$G$9!#3l$O!"%F%-%9%H%G!<%?$KBP7F$O%G%U%)%k%H$G9,!"%P%$%J%j%G!<%?$7FO$=$&GO$"$j$^;;$s!#Nc$dDI2C%-!<%o!<%I$K$D$$F$O0J2<;2>H **matrix uniform (p. 186)**!#

2 $DL\$N7A<0$O!"Hs0lMM$J3J;R$G!"x, y :BI8$OL@<(7F$$$k$H2>Dj$9kbNG!"F~NO%G!<%?$N:G=i$N9T$ry :BI8!":G=i$NNs$rx :BI8$H$_$J7^$9!#%P%$%J%j%G!<%?KBP7FO!"1 9TL\$N:G=i$NMWAG$O!"Ns?tGJ1l$P$$$1$^;;$s!#3l$O!"**binary matrix** F~NOGO%G%U%)%k%HG9$,!"%F%-%9%HF~NO%G!<%?$KBP7F$ODI2C%-!<%o!<%I**nonuniform** $,I,MW$KJj$^$9!#Nc$K4X$7FO0J2<;2>H **matrix nonuniform (p. 186)**!#

Uniform

0lMM$Jmatrix %G!<%?$rIA2h9k%3%^%s%I$NNc:

```
splot 'file' matrix using 1:2:3          # %F%-%9%H%G!<%?
splot 'file' binary general using 1:2:3  # %P%$%J%j%G!<%?
```

0lMM$J3J;R$Nmatrix %G!<%?GO!"3F%V%m%C%/$Nz NCMO0l9T$G0lEYKFI^l^$9!#9JoA!"

```
z11 z12 z13 z14 ...
z21 z22 z23 z24 ...
z31 z32 z33 z34 ...
```

Ey!#

%F%-%9%H%G!<%?KBP7FO!"1 9TL\$,%G!<%?GJ$/Ns%i%Y%k$r;}$D>19g!"DI2C%-!<%o!<%I**columnheaders** $r;H$CF/$@$5$$!#F1MM$K!"3F9T$N:G=i$NMWAG$,%G!<%?GJ$/%i%Y%k$G$"$k>19g$O!"DI2C%-!<%o!<%I**rowheaders** $r;HMQ$7F/$@$5$$!#0J2<$O!"$=$NN>J}$r;HMQ9kNc$G$9:

```
$DATA << EOD
xxx A   B   C   D
aa  z11 z12 z13 z14
bb  z21 z22 z23 z24
cc  z31 z32 z33 z34
EOD
plot $DATA matrix columnheaders rowheaders with image
```

%F%-%9%H%G!<%?GO!"6u9T$d%3%a%s%H9T$OG[Ns%G!<%?$r;}$D>19g!"?7$?$J6JLL$NLV(mesh) $r3+;O$7$^$9!#$$$DbN3HG9$,!"**splot** %3%^%s%I$N**index** %*%W%7%g%s$r;H$C$F%U%!%$%kFbNLVr<+M3$KA*Br$G$-$^$9!#

Nonuniform

F~NO%G!<%?$N:G=i$N9T$O y :BI8$r;}A^$9!#F~NO%G!<%?$N:G=iNNsO x :BI8$r;}$A$^$9!#%P%$%J%jF~NO%G!<%?$G$O!"1 9TL\$N:G=i$NMWAG$ONs?tGJ1l$P$$$1$^;;$s($%F%-%9%H%G!<%?$G$O=$NHV9f$OL5;k$5l^$9)!#

Hs0lMM$Jmatrix %G!<%?$rIA2h9k%3%^%s%I$NNc:

```
splot 'file' nonuniform matrix using 1:2:3  # %F%-%9%H%G!<%?
splot 'file' binary matrix using 1:2:3      # %P%$%J%j%G!<%?
```

hC$F!"Hs0lMM$J matrix %G!<%?$N9=B$$O0J2<Nh$&$KJj$^$9:

```
 <N+1>  <x0>   <x1>   <x2>  ...  <xN>
  <y0> <z0,0> <z0,1> <z0,2> ... <z0,N>
  <y1> <z1,0> <z1,1> <z1,2> ... <z1,N>
   :      :      :      :   ...    :
```

3liO0J2<Nh$&$J3 DN?t;zNAHKJQ49$5$l$^$9:

```
<x0> <y0> <z0,0>
<x0> <y1> <z0,1>
<x0> <y2> <z0,2>
 :    :     :
<x0> <yN> <z0,N>

<x1> <y0> <z1,0>
<x1> <y1> <z1,1>
 :    :     :
```

$=$7$F!"$3li$N3 DN?t;zNAHO **gnuplot** $N8IN)@~$KJQ49$5$l!"$=$N8e **gnuplot** $,DL>o$NJ}K!$GIA2h$N;Djr9T$$^$9!#

Examples 9TNs$d%Y%/%H%k$NA`:n$N%5%V%k!<%A%s(C Kh$k) $, **binary.c** $KMQ0U$5lF$$^$9!#%P%$%J%j%G!<%?$r=q$/%k!<%A%s$O

```
int fwrite_matrix(file,m,nrl,nrl,ncl,nch,row_title,column_title)
```

$G$9!#3liN%5%V%k!<%A%s$r;H$&Nc$, **bf_test.c** H7$FMQ0U$5lF$$$F!"3l$O%G%b%U%!%$%k **demo/binary.dem** MQ$KJ#?t$N%P%$%J%j%U%!%$%k$r@8@.$7$^$9!#

plot GN;HMQK!:

```
plot 'a.dat' matrix
plot 'a.dat' matrix using 1:3
plot 'a.gpbin' {matrix} binary using 1:3
```

3liOG[Ns$N9T$rIA2h$7!"using 2:3 H9lPG[NsNNsrIA2h!"using 1:2 $O!"E@$N:BI8$rIA2h$7$^$9(B?J,L50UL#$G$9)!#%*%W%7%g%s **every** rE,MQ9k3HGL@<(E*$K9T$dNs$r;XDj$G$-$^$9!#

Nc-%F%-%9%H%G!<%?%U%!%$%k$NG[Ns$N<4$N3HBg:

```
splot 'a.dat' matrix using (1+$1):(1+$2*10):3
```

Nc-%F%-%9%H%G!<%?%U%!%$%k$NG[Ns$NBh3 9T$NIA2h:

```
plot 'a.dat' matrix using 1:3 every 1:999:1:2
```

(9T$O0 $+$i?t$($ilkNG!"3 GOJ/$F2 $r;XDj$7$^$9)!#

Gnuplot $O!"**array**, **record**, **format**, **filetype** JI$Ngeneral %P%$%J%j7A<0$rFCDj$9kh$&$J%-!<%o!<%IrD1:$K%*%W%7%g%s **binary** $r;H$&3H$G!"matrix %P%$%J%j%U%!%$%k$rFI$_9~$`3H$,$G$-$^$9!#$=$NB>$NJQ49MQ$Ngeneral %P%$%J%j%-!<%o!<%I$O!"matrix %P%$%J%j%U%!%$%k$KbE,MQG$-$kG7g&!#(>\:Y$O!"0J2<;2>H: **binary general (p. 81)**!#)

%G!<%?%U%!%$%k$NNc

0J2<$O3 <!85%G!<%?%U%!%$%k$NIA2h$NC1=c$J01$DNNcG$9!#

```
splot 'datafile.dat'
```

$3$3$G!""datafile.dat" $O0J2<$r4^$`$H7^$9:

```
# The valley of the Gnu.
   0 0 10
   0 1 10
   0 2 10


   1 0 10
   1 1 5
   1 2 10


   2 0 10
   2 1 1
   2 2 10


   3 0 10
   3 1 0
   3 2 10
```

3N"datafile.dat" $O4*3 $N3J;R($=l>$l3 E@$+iJ$k%V%m%C%/$N4 DN9T) $rDj5A$9k3HKCm0U7F2<$5$$!#9T(%G!<%?%V%m%C%/) $O1 9T$N6u9T$G6h@Z$il^$9!#

x NCMO$=$l$>$l$N%G!<%?%V%m%C%/$NCf$GDj?t$KJC$F$$$k3H$KCm0U$7$F2<$5$$!#b7y $rDj?t$NCM$H$7!"1#@~=hM}$,M-8z$J>uBV$GIA2h$9kH!"$=$N6JL1$ON"JV$7$G=q$+lk3HKJj^$9!#

3J;R>u%G!<%?(grid data) KBP7$F!"8D!9$N%G!<%?%V%m%C%/Fb$Gx NCMrDj?tH7F*$/I,MWO"j^$;s7!"F1$8>1=j$Ny NCMrF1$8CM$KB7$(F*$/I,MWb"j^$;$s!#**gnuplot** $O8D!9$N%G!<%?%V%m%C%/Fb$NE@$N?t$,Ey$7$$H$$&3HrI,MWH7F$$k$@$1$G$9!#7+$7!"Ey9b@~$rF3$/$N$KMQ$$ilk6JL1$NLVL\$O!"BP1~9kE@$rNsE*$KA*sG7kV?$a!"ITB7$$N3J;R%G!<%?KBP9$k6JL1$NIA2hXN1F6A$OM=A[$G$-$^$;$s!#$=$l$O%1!<%9%P%$%1!<%9$N86M}$G%F%9%H9Y$-$G7g$&!#

3J;R>u%G!<%?(grid data)

3<!85IA2hN?aN%k!<%A%s$O!"8D!9$NLVL\$N3J;RK*$$F$O01$D$NI8K\E@$H01DN%G!<%?E@$,$"$k!"$H$$$&7A$N3J;R>u%G!<%?MQ$K@_7W5l$F$$^$9!#3F%G!<%?E@$O!"4X?tNCMrI>2A9k3H(0J2<;2>H: **set isosamples (p. 129)**)!"$^$?$C%G!<%?%U%!%$%krFI_9~$`$3$H(0J2<;2>H: **splot datafile (p. 185)**)KhCF@8@.5l$^$9!#"8IN)@~"$H$$&8@MU$O4X?t$KBP7F$b!"%G!<%?KBP$7Fb=$NLVL\$N@~$rI=$9bNH7$FMQ$$il^$9!#LVL\$O!"I,$:$7$bx,y $K4X$9$kD9J}7A$GJ/Fbh/!"u,v $GG^2pJQ?tI=<($5lF$b9=$o$J$$3HKCm0U7F2<$5$$!#0J2<;2>H: **set isosamples (p. 129)**!#

7+$7!"**gnuplot** O=Nh$&$J7A<0$rI,$:7bI,MWHO7^$;$s!#Nc$($P4X?t$N>19g$O!"**samples** $O**isosamples** $H0c$C$F$$$F$b9=$$$^$;$s!#9JoA!"x-8IN)@~N&$A!"1K\$Ny-8IN)@~$H8r$o$J$$$bN,$$$/D+$"$k3H$,$"j^$9!#%G!<%?%U%!%$%k$N>19g$O!"8D!9$N%G!<%?%V%m%C%/$NPi$D$$$?E@$N8D?t$,A4$FF1$8G"lP!"'8IN)@~$O"$O%G!<%?%V%m%C%/$NE@$r7k$S!"'2#CG8IN)@~"$O3F%G!<%?%V%m%C%/$NBP1~$9$kE@F1;N$r7k$S!"'6JLL"$r:nm&H7$^$9!#IAiN>19gGb!"Ey9b@~!"$*$h$S1#@~=hM}%b!<%I$CE@$,0U?^$7$?%U%)!<%^%C%H$G$"$C?>19gHC0cC?IA2h$rM?$(k3HKJj$^$9!#PiD-N"$k%G!<%?$O**set dgrid3d** KhCF{0[Jk}3J;R>u%G!<%?$KJQ49$9k3H,G-$^$9!#

Ey9b@~$K4X$9$k3!<%I$O!"y-8IN)@~$NE@$H!"$=$l$KBP1~$9kNYNy-8IN)@~>e$NE@$N4V$N@~J,$K1hCF$Nz $ND%NO$r7WB,7^$9!#$hCF!"x-8IN)@~$K!"y-8IN)@~$H$N8rE@$HOJiJ$$$h$&$JI8K\E@$,$"kh$&$J6JL1KBP7FO!"**splot** $NEy9b@~$O$=$Nh&$JI8K\E@$rL5;k9k3HKJj^$9!#0J2<$r;n$7F$_$F2<$5$$:

```
set xrange [-pi/2:pi/2]; set yrange [-pi/2:pi/2]
set style function lp
set contour
set isosamples 10,10; set samples 10,10;
splot cos(x)*cos(y)
set samples 4,10; replot
set samples 10,4; replot
```

Splot $N6JLL (splot surfaces)

splot $CE@$N=8$^$jH7$F!"$"$k$$O!"$=$1iNE@$r7k$V3HKhCF6JLL$rI=<($9k3H,G-$^$9!#**plot** $HF1MM$K!"E@$C%G!<%?%U%!%$%k$+$iFI$'$3HbG-$^$9$7!";XDj$5$1$?6h4V$G4X?t$NCM$rI>2A$7$FF@$k3HbG$-$^$9!#0J2<;2>H: **set isosamples (p. 129)**!#6JLL$O!"3FE@$r@~J,$G7k$V3H$G6a;wE*$K:ni1$^$9!#0J2<;2>H: **set surface (p. 167)**!#$=$7F=$N>19g6JLL$O!"**set hidden3d** $GITF)L@$KbG$-$^$9!#3<!856JLL$rD/ak8~$-$O!"**set view** $GJQ99$G$-$^$9!#

5i$K!"3J;R>u$N%G!<%?E@KBP7FO!"**splot** $CF1$89b5r;}$DE@$rJd4V9k3H$,$G$-(0J2<;2>H: **set contour (p. 115)**)!"$=$7F=1i$r7k$s$GEy9b@~$rIA$/$3H,G-$^$9!#5i$K!"$=$N7k$SJ}KO?D>$J@~J,$d3ji+$J@~$r;H$&$3H,G-$^$9(0J2<;2>H: **set cntrparam (p. 113)**)!#4X?t$O!">o$K**set isosamples** $H**set samples** $G7hDj$5$1$k3J;R>u$G!<%?$H7FI>2A$5$1$^$9!#0lJ}!"%U%!%$%k$N%G!<%?$O!"**data-file** $K=q$+1F$$kh&$J3J;R>u$G!<%?%U%)!<%^%C%HK9k+!"$"$k$$O3J;R%G!<%?$r@8@.$9$k(0J2<;2>H: **set dgrid3d (p. 120)**)$H$$$&3Hr7J1lP$=$&OJj^$;$s!#

Ey9b@~$O6JLL$N>e$KI=<($9k3HbG-$^$9$7!"DlLL$K<M1F9k3HbG$-$^$9!#DlLL$X$N<M1F$O!"%U%!%$%k$K=q$-=P$9$3$HbG$-!"$=7F$=$1$r **plot** $G:F$SFI$_9~$s$G **plot** Nh$j6/$$@07AG=NO$r@8$+$9$3HbG-$^$9!#

Stats (4JC1$JE}7W>pJs)

=q<O:

```
stats {<ranges>} 'filename' {matrix | using N{:M}} {name 'prefix'}
      {{no}output}
```

3N%3%^%s%I$O!"%U%!%$%k$N1Ns!"$^$?$O2Ns$N%G!<%?$N4JC1$JE}7W>pJs$rDs6!7^$9!#using ;XDj;R$O!"plot %3%^%s%I$HF1$87A$G2r<a$5$1$^$9,!"**index**, **every**, **using** ;XDj$K4X$9$k>\:Y$K$D$$F$O0J2<;2>H: **plot (p. 80)**!#G!<%?E@$O!"$=$N2r@C$NA0$Kxrange, yrange $K=>C$F%U%#%k%?K+1i1^$9!#0J2<;2>H: **set xrange (p. 176)**!#$=$N>pJs$O%G%U%)%k%H$G$O%9%/%j!<%s$K=PNC$5$1$^$9,!"%3%^%s%I**set print** $r@h$K;H$&$3HG=PNC$r%U%!%$%k%j%@%$%l/%H$7$?$j!"%*%W%7%g%s **nooutput** $r;H$&3H$G=PNC$7$J$$h$&$K9k3HbG$-$^$9!#

2hLL=PNC$K2C$(!"gnuplot $O8D!9$NE}7W>pJs$r3 DNJQ?t%0%k!<%W$KJ]B8$7$^$9!#1HVL\$NJQ?t%0%k!<%W$O!"$IsJ%G!<%?$,JB$s$G$$k$+$r<(7^$9:

STATS_records	*N*	HCOCFb$N%G!<%?$NAm?t
STATS_outofrange		HCOC30H7$F=|$+1?9T?t
STATS_invalid		L58z/IT40A4/7gB;%G!<%?$NAm?t
STATS_blank		6u9T$NAm?t
STATS_blocks		%U%!%$%kFb$Nindex %G!<%?V%m%C%/?t
STATS_columns		%G!<%?@hF,9T$NNs?t

2HVL\$NJQ?t%0%k!<%W$O!"1$DNNsN!"HCOCFb$N%G!<%?$N<M1-<A$r<($7$^$9!#3NNsOy NCMH7F07o1$^$9!#y<4$,<+F0=L<\$N>19g$O!"BP>]$H9kHCOC$K8B3&$O"j^$;$s!"$=$&GJ1l$PHCOO[ymin:ymax] Fb$NCMN_$rBP>]$H7^$9!#

2DNNs$rF1;~$K12s$N **stats** %3%^%s%I$G2r@C9k>19g$O!"3FJQ?tL>$K"_x", "_y" $H$$$&@\Hx<-$rDI2C$7$^$9!#Nc$($PSTATS_min_x $O!"1$DL\$NNs$N%G!<%?$N:G>.CM$G!"STATS_min_y $O2$DL\$NNs$N%G!<%?$N:G>.CM$r0UL#$7$^$9!#3$N>19g!"E@$O xrange $H yrange $NN>J}$G8!::9k3HGUk$$$K$+$1$^$9!#

STATS_min		$\min(y)$	HCOCFb$N%G!<%?E@$N:G>.CM
STATS_max		$\max(y)$	HCOCFb$N%G!<%?E@$N:GBgCM
STATS_index_min		$i \mid y_i = \min(y)$	data[i] == STATS_min HJ$kE:;zi
STATS_index_max		$i \mid y_i = \max(y)$	data[i] == STATS_max HJ$kE:;zi
STATS_mean	$\bar{y} =$	$\frac{1}{N}\sum y$	HCOCFb$N%G!<%?E@$NJ?6QCM
STATS_stddev	$\sigma_y =$	$\sqrt{\frac{1}{N}\sum (y-\bar{y})^2}$	HCOCFb$N%G!<%?E@$NI8K\I8=‘JP:9
STATS_ssd	$s_y =$	$\sqrt{\frac{1}{N-1}\sum (y-\bar{y})^2}$	HCOCFb$N%G!<%?E@$NITJPI8=‘JP:9
STATS_lo_quartile			Bh0l(2<$N);MJ,0L6-3&CM
STATS_median			%a%8%"%sCM(BhFs;MJ,0L6-3&CM)
STATS_up_quartile			Bh;0(>e$N);MJ,0L6-3&CM
STATS_sum		$\sum y$	OB
STATS_sumsq		$\sum y^2$	J?J}OB
STATS_skewness		$\frac{1}{N\sigma^3}\sum (y-\bar{y})^3$	HCOCFb$N%G!<%?E@$NODEY
STATS_kurtosis		$\frac{1}{N\sigma^4}\sum (y-\bar{y})^4$	HCOCFb$N%G!<%?E@$N@mEY
STATS_adev		$\frac{1}{N}\sum \lvert y-\bar{y}\rvert$	HCOCFb$N%G!<%?E@$NJ?6Q@dBPJP:9
STATS_mean_err		$\sigma_y/\sqrt{N}$	J?6QCM$NI8=‘8m:9
STATS_stddev_err		$\sigma_y/\sqrt{2N}$	I8=‘JP:9$NI8=‘8m:9
STATS_skewness_err		$\sqrt{6/N}$	ODEY$NI8=‘8m:9
STATS_kurtosis_err		$\sqrt{24/N}$	@mEY$NI8=‘8m:9

3 HVL\$NJQ?t%0%k!<%W$O!"2 DNNs$N%G!<%?$N2r@O@lMQ$G$9!#

STATS_correlation	x $Hy $NITJPAj4X78?t
STATS_slope	2s5"D>@~y = Ax + B $N78?tA
STATS_slope_err	A $NIT3N$+$5
STATS_intercept	2s5"D>@~y = Ax + B $N78?tB
STATS_intercept_err	B $NIT3N$+$5
STATS_sumxy	@QOB(x*y $NOB)
STATS_pos_min_y	y $N:G>.CM$rM?$($kx:BI8
STATS_pos_max_y	y $N:GBgCM$rM?$($kx:BI8

matrix $,;XDj$5lk$H!"A4$F$N9TNsMWAG$,$=$N2r@O$NBP>]$KJj$^$9!#$=$N9TNs$N%5%:$O!"UQ?tSTATS_size_x $HSTATS_size_y $KJ]B8$5l^$9!#

2 $D0J>e$N%U%!%$%k$d%G!<%?Ns$+$i$NE}7W>pJs$rJ,Ns$K07$&3H$,$G$-$l$PJXMx$G9N$G!"UQ?t$N%G%U%)%k%H$N@\F,<-$G$"$k"STATS" $r!"%*%W%7%g%s**name** Gf!<%6$,;XDj$9$kJ8;zNs$KCV-4(k3H,G-kh$&$KJC$F$$$^$9!#Nc$($P!"0[$J$k2 DN%U%!%$%kN=l>lN2 NsL\$N%G!<%?$NJ?6QCM$O0J2<Nh$&$K7FHf3SG-$^$9:

```
stats "file1.dat" using 2 name "A"
stats "file2.dat" using 2 name "B"
if (A_mean < B_mean) {...}
```

%-!<%o!<%I **columnheader** $d4X?t **columnheader(N)** Kh$j!"%G!<%?%U%!%$%k$N1 9TL\$+$i<hF@$7$?FbMF$Khj@\F,<-$r@8@.$9k3HbG-$^$9:

```
do for [COL=5:8] { stats 'datafile' using COL name columnheader }
```

STATS_index_xxx $G<($5lkE:;zNCMO!"plot %3%^%s%I$NBh0 5?;wNs($0) NCMKBP1~$7!":G=i$NE@$OE:;z$O0!":G8e$NE@$NE:;z$ON-1 HJj^$9!#

%a%8%"%s$H;MJ,0L6-3&CM$rC5$9:]$O%G!<%?NCMr%=!<%H$7!"E@$NAm?tN $,4q?t$N>19g$O!"$=$N(N+1)/2 HVL\$NCM$r%a%8%"%sCM$H$7!"N $,6v?t$N>19g$O!"N/2 HVL\$H(N+2)/2 HVL\$NCM$NJ?6QCM$r%a%8%"%sCMH7$^$9!#;MJ,0L6-3&CM$bF1MM$K=hM}7^$9!#

$=$N8e$NIA2h$KCm<arD1k$?$a$K%3%^%s%I **stats** $rMxMQ$7$?Nc$K$D$$$F$O!"0J2<$r;2>H7F$/$@$5$$!#

```
stats.dem!#
```

8=:_$N<BAu$G$O!"X <4$HY <4$N0lJ}$,BP?t<4$N>19g$O2r@OG-$^$;$s!#3$N@)8B$O:#8e$N%P!<%8%g%sGO2r>C5lkG7g&!#

System

system "command" $O!"I8=‘E*$J%7%’%k$r;H$C$F"command" $r<B9T$7$^$9!#0J2<;2>H: **shell (p. 184)**!#4X?tH7$F8F$Pl?>l9g!**"system("command")** $O7k2L$H7FI8=‘=PNO$KN.$l$kJ8;zNs$rJ8;zNsCMH7FJV7$^$9!#0l$DDI2C$5lk2~9TJ8;z$OL5;k$5l^$9!#

3l$O!"gnuplot %9%/%j%W%HFb$K30It4X?t$r<h$j9~$‘$N$K;H$($^$9:

```
f(x) = real(system(sprintf("somecommand %f", x)))
```

Test

3N%3%^%s%I$O!"=PNO7A<0$d%Q%l%C%HGINh$&$J=PNO$,9T$J$($k$+$r2hA|$G%F%9%H$7I=<(7^$9!#

=q<0:

```
test {terminal | palette}
```

test $^$?$O **test terminal** $O!"8=:_;HMQCf$N=PNO7A<0 (**terminal**) $G;H$($k@~$N<cN‘!"E@$N<cN‘!"$^$?$OMxMQ2DG=J=$NB>$NIA2h$r@8@.$7$^$9!#

test palette $O!"R(z),G(z),B(z) (0<=z<=1) $N>uBV$rIA2h7^$9!#$3li$O8=:_$N%+%i!<%Q%l%C%H(**palette**)$NRGB @.J,$r<(7^$9!#$^$?!"RGB $r3%?’3,D4$K<IA|9kNTSC 78?t$rMQ$$$F7W;;5l$?;k8wEY$bIA2h7^$9!#$3$NBP1~4X78$O!"$PALETTE $H$$$&L>A0$N%G!<%?%V%m%C%/$K$b<h$j9~$^$l$^$9!#

Undefine

1 $D!"$^$?$OJ#?t$NDj5A:Q$_$N%f!<%6JQ?t$r:o=|7^$9!#$3lO!"=i4|2=%F%9%H$r4^$‘h&$J%9%/%j%W%H$N>uBV$r%j;%C%H$9kN$KJXMx$G7g$&!#

JQ?tL>KO!":G8e$NJ8;z$H7F%o%$%k%I%+!<%lJ8;z * $r;H$&3H$,$G$-$^$9!#%o%$%k%I%+!<%lJ8;z$,8+$D$+$kH!"$=$lhjA0$NIItJ,$G;O$^$k9YFNJQ?t$r:o=|$7$^$9!#3l$O!"6&DL$N@\F,8l$r;H$C$F$$$kJ#?t$NJQ?t$r:o=|9kNKJXMxG7g&!#$?$@$7!"%o%$%k%I%+!<%lJ8;z$OJQ?tL>$N:G8eK7$+;H$($J$$$3HKCm0U7F$/$@$5$$!#**undefine** $K%o%$%k%I%+!<%lJ8;zN_$r0z?t$H7FM?$($?>l9g$O2?$b7^$;$s!#

Nc:

```
undefine foo foo1 foo2
if (!exists("foo")) load "initialize.gp"

bar = 1; bar1 = 2; bar2 = 3
undefine bar*                  # 3 $D$NJQ?t$rA4It:o=|
```

Unset

%3%^%s%I **set** $G@_Dj$7$?%*%W%7%g%s$O!"$=$l$KBP1~$7$?**unset** %3%^%s%I$KhCF=$N%G%U%)%k%H$NCMKLa9$3$H$,2DG=$G$9!#**unset** %3%^%s%I$K$O7+$jJV$7@a$bMxMQG-$^$9!#0J2<;2>H: **plot for (p. 98)**!#

Nc:

```
set xtics mirror rotate by -45 0,10,100
...
unset xtics

# HV9f 100 $+$i 200 $^$G$N%i%Y%k$r unset
unset for [i=100:200] label i
```

Linetype

=q<0:

```
unset linetype N
```

0JA0$KC10l$N@~<o$K3d$jEvF?9YFNFC@-$r:o=|$7$^$9!#3N8eK3$N@~<o$r;HMQ7?>l9g!"FC@-!"?'$O8=:_$N=PNO7A<0$K%G%U%)%k%H$G@_Dj5l$F$$kbN$r;HMQ$7$^$9(${9$JoA gnuplot 4.6 hjA0$N%P!<%8%g%s$GM-8z$@$C$?!"$$ofk%G%U%)%k%H$N@~<o)!#

Monochrome

8=:_M-8z$JGr9u$N@~<o$r%+%i!<$N@~<o$K@Z$jBX$(${^$9!#**set color** $HFlEy$G$9!#

Output

J#?t$N%0%i%U$r0lDN=PNO%U%!%$%k$K=q$-=P$9$3$H$,$G$-$k=PNO7A<0b"kN$G!"IA2h$N8e$G=PNO%U%!%$%k$r<+FOE*$KOJD8$^$;$s!#$hCF$=$N%U%!%$%k$r0BA4$K0u:~Ey$r9k$?$aKO!"$^$:L@<(E*$K **unset out** $d**set output** H9k3HGA0$N%U%!%$%krJD8$?>e$G?7$7$$%U%!%$%k$r3+$$F$/$@$5$$!#

Terminal

%W%m%0%i%`$N:G=i$KM-8z$K$J$k%G%U%)%k%H$N=PNO7A<0$O!"8D!9$N%7%9%F%`4D6-!"gnuplot $N%3%s%Q%$%k%*%W%7%g%s!"$*$h$S4D6-JQ?t GNUTERM $K0MB8$7$^$9!#3N%G%U%)%k%H$,2?$G$"$CFb!"gnuplot O=lrFbItJQ?t GNUTERM $KJ]B8$7$F$$$^9,!"%3%^%s%I **unset terminal** $O!"$3$N=i4|CM$rI|5"7^$9!#$3lO!"**set terminal GNUTERM** H9k3HHF1$8$G$9!#

Update

Cm0U: 3N%3%^%s%I$O!VHs?d>)!W$G$9!#Be$ojK **save fit** $r;HMQ$7F/$@$5$$!#

%3%^%s%I **update** $O!"$3$N%P!<%8%g%s$G$O8eJ}8_49@-$N$?a$K;D5l$F$$$^9,!"->-MhNHGG$O:o=|M-Dj$G$9!#

=q<0:

```
update <filename> {<filename>}
```

3N%3%^%s%I$O!"M?$(${i$l$?%U%!%$%k$KJ]B8$5lF$$kJQ?t$r8=:_$NCM$K99?7$7$^$9$,!"$3li$O=i4|CM$N%U%!%$%k$HF1$8=q<0$G$"$kI,MW$,$"j^$9(0J2<;2>H: **fit (p. 69)**)!#

$=$NL>A0$N%U%!%$%k$,B8:_$7J>l9g!"8=:_Dj5A5l$F$$k9YFN%f!<%6JQ?t$r4^$`?7$7$^9,!":G8e$N fit Fb$G;HMQ7J$+$C$?JQ?t$KO9YF"#FIXED" $H0u$rD1$F$$^$9!#$3lO!"fit JQ?t$N8=:_$NCM$r8e$G;H$&$?a$K!"$"$k$$O=*N;/CfCG7?EvFOar:F<B9T9k$?$a$KJ]B8$7F*/NKM-MQ$G$9!#

=q<0:

```
update <filename> {<filename>}
```

2HVL\$N%U%!%$%kL>$r;XDj9k$H!"85$N%Q%i%a!<%?%U%!%$%k$OJQ99$;$:$K2HVL\$N%U%!%$%k$NJ}$K99?7$5l?CM$r=q$-=P7^$9!#

$=$&GJ1l$P!";XDj$7$?%U%!%$%k,B8:_9l$P **gnuplot** O=$N%U%!%$%kL>$K **.old** rD1F%U%!%$%kL>$rJQ99$7!";XDj$7$?%U%!%$%kL>$N%U%!%$%k$r?7$?$K3+$-D>7^$9!#$D$^$j!"'**update 'fred'**" H9kH!"$=$l$O"**!rename fred fred.old; update 'fred.old' 'fred'**" H7$?$3HHF1$8$3HKJj$^$9!#%U%!%$%k,4{$KB8:_9k$?$a$KL>A0$NJQ99$,$G$-$J$>l9g$O!"update $O%(%i!<%a%C%;!<%8$r=PNO7F<:GT7^$9!#[VMS GO!"%U%!%$%k$N%P!<%8%g%s4IM}%7%9%F%`$,;Holk?$a!"L>A0$NJQ99$O9TJol^$;$s!#]

While

=q<0:

```
while (<expr>) {
    <commands>
}
```

3l$O!"%3%^%s%I$N%V%m%C%/$r!"<expr> $,0 GJ$$$CM$HI>2A$5lk4V!"7+jJV7<B9T7^$9!#$3$N%3%^%s%I$O!"8E$$7A<0($+$C3J$7) $Nif/else 9=J8$H0l=o$K;H$&3HOG$-$^$;$s!#0J2<;2>H: **if (p. 77)**!#

Part IV

=PNO7A<0 (Terminal)

=PNO7A<0$N0lMw

gnuplot OHFbB?$/$N=PNO7A<0$r%5%]!<%H$7$F$$^$9!#$3li$O!"E,@Z$J=PNO7A<0$r!"I,MW$J$i5!G=$rJQ99$9$kDI2C*%W%7%g%srD1FA*Br9k3HKh$j@_Dj$5l^$9!#0J2<;2>H: **set terminal (p. 168)**!#

3NJ8=q$O!"$"J?$N%7%9%F%`>e$G=i4|@_Dj$*$hS%$s%9%H!<%k$,J5lJ$+$C$?$?aKMxMQG-$J$$=PNO7A<0KD$$$F$b5-=R$5lF$$k$+$bCNl^$;$s!#%$%s%9%H!<%k$5l?8D!9$Ngnuplot $G!"$I$N=PNO7A<0$,M-8zJN$+$N0lMw$r8+$kKO!"%*%W%7%g%s$r2?$bD1$:$K'set terminal' HBGCF/$@$5$$!#

(LuCm: 3NF|K\8lLu$K4^$^lk terminal $N%^%K%e%"%k$O!"$=$N0lMwKO$J$$=PNO7A<0NbNb4^$^$l$F$$k$+$b7l$^$;s7!"5UK=$N0lMwF|$N=PNO7A<0$G%^%K%e%"%k$,$J$$$bNb"k+b7l^$;$s$!#)

Aifm

Cm0U: ;~BeCYlN=PNO7A<0!"85!9$O Adobe Illustrator 3.0+ MQ!#Adobe Illustrator $O%l%Y%k 1 $N PostScript %U%!%$%k$rD>@\G'<1$9kN$G!"$3lNBeoj$K **set terminal post level1** ;H$&$Y$-$G7g$&!#

=q<0:

```
set terminal aifm {color|monochrome} {"<fontname>"} {<fontsize>}
```

Aqua

3N=PNO7A<0$O Mac OS X >e$NI=<($K4X$9$k AquaTerm.app $K0MB8$7$F$$^$9!#

=q<0:

```
set terminal aqua {<n>} {title "<wintitle>"} {size <x> <y>}
                        {font "<fontname>{,<fontsize>}"}
                        {linewidth <lw>}"}
                        {{no}enhanced} {solid|dashed} {dl <dashlength>}}
```

<n> $OIA2h$9$k%&%#%s%I%&$NHV9f(%G%U%)%k%HGO0) <wintitle> $O%?%$%H%k%P!<$KI=<($5lkL>A0(%G%U%)%k%H$O"Figure <n>"), <x> <y> $OIA2h%5%$%:(%G%U%)%k%H$O846x594 pt = 11.75x8.25 %$%s%A) $G$9!#

;HMQ9k%U%)%s%H$O<fontname> $G;XDj$7(%G%U%)%k%H$O"Times-Roman")!"%U%)%s%H%5%$%:$O<fontsize> $G;XDj$7$^$9(%G%U%)%k%H$O14.0 pt)!#

aqua =PNO7A<0$O!"3HD%J8;zNs=hM}%b!<%I(enhanced text mode; 0J2<;2>H: **enhanced (p. 25)**) $r!"=E$M=q$-0J30$O%5%]!<%H7F$^$9!#%U%)%s%H$N;HMQ$O%7%9%F%`$GM-8z$J%U%)%s%H$K@)8B$5lF$$^$9!#J8;z%(%s%3!<%G%#%s%0$O!"**set encoding** $GA*Br$G$-$^9,!"8=:_$O iso_latin_1, iso_latin_2, cp1250 $H UTF8 (default) $r%5%]!<%H$7$F$$^$9!#

6J@~$O!"<B@~$+E@@~(%G%U%)%k%H$O<B@~) $N$$:l+$GIA2h$G$-!"E@@~$N4V3V$OG\N(<dashlength> (>0) $GJQ99$G$-$^$9!#

Be

=PNO7A<0 **be** $O!"X %5!<%P$rMxMQ9k **beos** %*%Z%l!<%F%#%s%0%7%9%F%`>e$Ggnuplot $r%3%s%Q%$%k$9$k?M$N$?$a$N%b%G%k$G$9!#4D6-JQ?t **DISPLAY** $,%;%C%H$5$l$F$$k$+!"4D6-JQ?t **TERM** $, **xterm** $K%;%C%H$5$l$F$$k$+!"$^$?$O%3%^%s%I%i%$%s%*%W%7%g%s$H$7$F **-display** $,;H$o$l$F$$l$P!"%W%m%0%i%`$N5/F0;~$K3N=PNO7A<0$,A*Br$5l^$9!#

=q<0:

```
        set terminal be {reset} {<n>}
```

J#?t$N%0%i%UIA2h%&%#%s%I%&$r%5%]!<%H7F$$^$9!**set terminal be <n>** $OHV9fn $N%&%#%s%I%&$K=PNO7^$9!#n>0 $N>l9g!"$=$NHV9f$O%&%#%s%I%&?%$H%k$H%"%$%3%sL>$K **gplt <n>** H7FIU1il$^$9!#8=:_$N%&%#%s%I%&$O%+!<%=%k5-9f$NUQ2=$G6hJLG-$^$9(%G%U%)%k%H%+!<%=%k$+$i==;z%+!<%=%k$X)!#

gnuplot %I%i%$%P$,JL$J=PNO%I%i%$%P$KJQ99$5lF$b!"IA2h%&%#%s%I%&$O3+$$?$^$^KJj^$9!#IA2h%&%#%s%I%&$O!"$=$N%&%#%s%I%&$K%+!<%=%k$rCV$$FJ8;zq $r2!$9$+!"%&%#%s%I%&^M!<%8%c$N%a%K%e!<$N **close** $rA*Br$9lPJD8k3H$,$G$-$^$9!#**reset** $r<B9T$9lPA4FN%&%#%s%I%&$r0lEY$KJD8l$^$9!#$=$l$O<B:]$K%&%#%s%I%&$r4IM}$7$F$$k;R%W%m%;%9$r=*N;$7$^$9(b7**-persist** $,;XDj$5lF$$J1l$P)!#

IA2h%&%#%s%I%&$O**-persisit** %*%W%7%g%s$,M?$(il$F$$J1l$P!"BPOC$N=*N;;~$K<+F0E*$KJD8il^$9!#

IA2h%5%$:$H%"%9%Z%/%HHf$O!"**gnuplot** $N%&%#%s%I%&$r%j%5%$:$9k3HG$bJQ99$G$-$^$9!#

@~$NI}$HE@$N%5%$:$O**gnuplot** $N**set linestyle** $GJQ992DG=$G$9!#

=PNO%I%i%$%P**be** $K4X$7FO!"**gnuplot** $O(5/F0;~$K)!"%3%^%s%I%i%$%s!"$^$?$O@_Dj%U%!%$%k$+$i!"geometry $dfont, name JI$NDI>c$N X Toolkit %*%W%7%g%s$d%j%=!<%9$N;XDj$r<u$1IU1^$9!#$=li$N%*%W%7%g%sKD$$F$OX(1) %^%K%e%"%k%Z!<%8($d$=$l$HF1Ey$NbN) $r;2>H$7F/$@$5$$!#

B>Kb**be** =PNO7A<0MQ$NB?$/$N**gnuplot** $N%*%W%7%g%s$,$"$j$^$9!#3liO**gnuplot** $r8F$VH-$K%3%^%s%I%i%$%s%*%W%7%g%sH7$F;XDj$9k+!"$^$?$O@_Dj%U%!%$%k".Xdefaults" $N%j%=!<%9$H7F;XDjG-$^$9!#3liO5/F0;~$K@_Dj$5lkNG!"**gnuplot** <B9T;~KOJQ99G-$^$;$s!#

%3%^%s%I%i%$%s%*%W%7%g%s (command-line_options)

X Toolkit %*%W%7%g%s$K2C$(!"0J2<$N%*%W%7%g%s$, gnuplot $NN)$A>e$2;~$N%3%^%s%I%i%$%s$G!"$^$?$O%f!<%6$N%U%!%$%k".Xdefaults" Fb$N%j%=!<%9H7$F;XDj$G$-$^$9:

'-mono'	%+%i!<%G%#%9%W%l%$>e$G6/@)E*$KGr9uIA2h
'-gray'	%0%l%$%9%1!<%k$^$?$O%+%i!<%G%#%9%W%l%$>e$G$N%0%l%$%9%1!<%kIA2h(%G%U%)%k%HGO%0%l%$%9%1!<%k%G%#%9%W%l%$$OGr9uIA2h$r<u$1IU1k)
'-clear'	?7$7$$IA2h$rI=<($9$kA0$K(=V4VE*$K)2hLI$r>C5n
'-raise'	3FIA2h8e$KIA2h%&%#%s%I%&$r:GA0LI$X=P$9
'-noraise'	3FIA2h8e$KIA2h%&%#%s%I%&$r:GA0LI$X=P$9$3$HO7$J$$
'-persist'	gnuplot %W%m%0%i%~=*N;8e$bIA2h%&%#%s%I%&$r;D$9

>e5-$N%*%W%7%g%s!"$O%3%^%s%I%i%$%s>e$G$N;XDj=q<0$G!"".Xdefaults" $K%j%=!<%9$H7F;XDj9kH-$O0[$J$k=q<0$r;H$$^$9!#

Nc:

```
gnuplot*gray: on
```

gnuplot $OIA2h%9%?%$%k**points** $GIA2h$9$kE@$N%5%$:$N@)8fKb!"%3%^%s%I%i%$%s%*%W%7%g%s(**-pointsize <v>**) $H%j%=!<%9(**gnuplot*pointsize: <v>**) $rDs6!$7$F$$^$9!#CM**v** $OE@$N%5%$:$N3HBgN(H7$F;H$olk<B?tCM(0 < v <= 10) $G!"Nc$($P**-pointsize 2** $O%G%U%)%k%H$N5%$:$N2G\!"**-pointsize 0.5** $OIaDL$N%5%$:$NH>J,$NE@$,;Hol$^$9!#

Gr9u%*%W%7%g%s (**monochrome_options**)

Gr9u%G%#%9%W%l%$$KBP7F$O**gnuplot** $OIA2h?'(foreground) $bGX7J?'(background) $bM?$($^$;$s!#%G%U%)%k%H$G$OGX7J$OGr!"IA2h$O9u$G$9!#**-rv** $d**gnuplot*reverseVideo: on** $N>l9g$K$OGX7J$,9u$GIA2h$OGrKJj^$9!#

%+%i!<%j%=!<%9(**color_resources**)

%+%i!<%G%#%9%W%l%$$KBP7F$O!"**gnuplot** $O0J2<$N%j%=!<%9($3$3GO$=$N%G%U%)%k%HNCMr<(7^$9)!"$^$?$OGr9u3,D4(greyscale) $N%j%=!<%9$r;2>H7^$9!#%j%=!<%9$NCM$O%7%9%F%~e$N BE rgb.txt %U%!%$%k$K=q$+$l$F$$$k?'L>!"$^$?$O16 ?J$N?';XDj(BE $N%^%K%e%"%k$r;2>H)$+!"?'L>$H6/EY(0 $+$i1 $N4V$NCM)$r%3%s^$G6h@Z$C?CM$r;HMQG-$^$9!#Nc$($P**blue, 0.5** $OH>J,$N6/EY$N@D!"$r0UL#7^$9!#

```
gnuplot*background: white
gnuplot*textColor: black
gnuplot*borderColor: black
gnuplot*axisColor: black
gnuplot*line1Color: red
gnuplot*line2Color: green
gnuplot*line3Color: blue
gnuplot*line4Color: magenta
gnuplot*line5Color: cyan
gnuplot*line6Color: sienna
gnuplot*line7Color: orange
gnuplot*line8Color: coral
```

3liK4X9k%3%^%s%I%i%$%s$N=q<0$O!"Nc$($P0J2<$NDLjG$9!#

Nc:

```
gnuplot -background coral
```

3%?'3,D4%j%=!<%9 **(grayscale_resources)**

-gray $rA*Br$9kH!"**gnuplot** $O!"%0%l%$%9%1!<%k$^$?$O%+%i!<%G%#%9%W%l%$$KBP7F!"0J2<$N%j%=!<%9$r;2>H7^$9($3$3$G$O=$N%G%U%)%k%HNCMr<(7^$9)!#%G%U%)%k%H$NGX7J?'$O9u$G$"$k3H$KCm0U$7F/$@$5$$!#

```
gnuplot*background: black
gnuplot*textGray: white
gnuplot*borderGray: gray50
gnuplot*axisGray: gray50
gnuplot*line1Gray: gray100
gnuplot*line2Gray: gray60
gnuplot*line3Gray: gray80
gnuplot*line4Gray: gray40
gnuplot*line5Gray: gray90
gnuplot*line6Gray: gray50
gnuplot*line7Gray: gray70
gnuplot*line8Gray: gray30
```

@~IA2h%j%=!<%9 **(line_resources)**

gnuplot $OIA2h$N@~$NI}(%T%/%;%kC10L)$N@_DjN?aK0J2<$N%j%=!<%9$r;2>H7^$9($3$3$G$O=$N%G%U%)%k%HNCMr<(7^$9)!#0 $^$?$O1 $O:G>.$N@~I}$N1 %T%/%;%kI}$r0UL#7^$9!#2 $^$?$O3 NCMKhC$F%0%i%U$N304Q$r2~A1G-$k>l9gb"kG7g$&!#

```
gnuplot*borderWidth: 2
gnuplot*axisWidth: 0
gnuplot*line1Width: 0
gnuplot*line2Width: 0
gnuplot*line3Width: 0
gnuplot*line4Width: 0
gnuplot*line5Width: 0
gnuplot*line6Width: 0
gnuplot*line7Width: 0
gnuplot*line8Width: 0
```

gnuplot $O@~IA2h$G;HMQ9kE@@~$N7A<0$N@_DjMQ$K0J2<$N%j%=!<%9$r;2>H$7$^$9!#0 $O<B@~$r0UL#7^$9!#2 7e$N10 ?J?t **jk** (**j** $H**k** $O1 $+$i9 $^$G$NCM)$O!"**j** 8D$N%T%/%;%k$NIA2h$K**k** 8D$N6uGr$N%T%/%;%k,B3$/%Q%?!<%s$N7+$jJV7+iJ$kE@@~$r0UL#7^$9!#Nc$($P'16' $O1 8D$N%T%/%;%k$N8e$K6 DN6uGr$,B3$/%Q%?!<

%s$NE@@~$KJj$^$9!#5i$K!"4 7e$N10 ?J?tGh$j>\:Y$J%T%/%;%k$H6uGr$NNs$N%Q%?!<%s$r;XDjG-$^$9!#Nc $($P!"'4441' $O4 DN%T%/%;%k!"4 DN6uGr!"4 DN%T%/%;%k!"1 DN6uGr$N%Q%?!<%s$r0UL#7^$9!#0J2<$N %G%U%)%k%H$N%j%=!<%9CM$O!"Gr9u%G%#%9%W%l%$$!"$"$k$$$O%+%i!<$dGr9u3,D4 (grayscale) %G%#%9%W%l%$>e$NGr9u IA2hK*1kCM$G$9!#%+%i!<%G%#%9%W%l%$$G$O=$1iN%G%U%)%k%HNCMO$[$HsI0 (<B@~) $G!"**axisDashes** N_$,%G%U%)%k%H$G'16' $NE@@~$HJC$F$$$^$9!#

```
gnuplot*borderDashes: 0
gnuplot*axisDashes: 16
gnuplot*line1Dashes: 0
gnuplot*line2Dashes: 42
gnuplot*line3Dashes: 13
gnuplot*line4Dashes: 44
gnuplot*line5Dashes: 15
gnuplot*line6Dashes: 4441
gnuplot*line7Dashes: 42
gnuplot*line8Dashes: 13
```

Cairolatex

=PNO7A<0 **cairolatex** $O!"tairo $Hpango $NJd=u%i%$%V%i%j$r;H$C$F!"EPS (Encapsulated PostScript) $+PDF =PNO$r@8@.7^9,!"J8;zNs=PNOKO!"=PNO7A<0 **epslatex** $HF1$8djJ}$GLaTeX $r;HMQ$7$^$9!#

=q<0:

```
set terminal cairolatex
                {eps | pdf}
                {standalone | input}
                {blacktext | colortext | colourtext}
                {header <header> | noheader}
                {mono|color}
                {{no}transparent} {{no}crop} {background <rgbcolor>}
                {font <font>} {fontscale <scale>}
                {linewidth <lw>} {rounded|butt|square} {dashlength <dl>}
                {size <XX>{unit},<YY>{unit}}
```

cairolatex =PNO7A<0$O!"epscairo =PNO7A<0 (**termnal epscairo**) $dpdfcairo =PNO7A<0 (**terminal pdfcairo**) $HF1Ey$N%0%i%U$r=PNO$7$^$9$,!"%F%-%9%HJ8;zNs$O%0%i%UNCfKF~lkNGOJ$/!"LaTeX KEO7$^$9!#0J2<$G?(lJ$$*%W%7%g%sKD$$$F$O!"0J2<;2:H **pdfcairo (p. 227)**!#

eps $H **pdf** $O!"%0%i%U=PNO$N7A<0$rA*Br$7$^$9!#latex/dvips MQKO **eps** $r!"pdflatex MQ$K$O **pdf** $r;HMQ$7F/$@$5$$!#

blacktext $O!"%+%i!<%b!<%I$G$b9$YFNJ8;zNs$r9u$G=q$/$h$&$K7^$9!#

cairolatex =PNO%I%i%$%P$O!"J8;zNs$N0LCV$NFCJL$J@)8fJ}K!$rDs6!7^$9: (a) '{' $G;O$^k9YF$NJ8;zNs $O!"}' b=$NJ8;zNs$N:G8eKI,MWG9,!"$=$NJ8;zNsA4BN$rLaTeX $G2#$K$b=D$K$b%;%s%?%j%s%0$7$^$9!#(b) '[' $G;O$^kJ8;zNs$O!"$=$N<!$K0LCV;XDjJ8;z(t,b,l,r,c N&$A2 D^$G)!"]{'!"BP>]J8;zNs!"$HB3$-:G8e$K'}' GJD8$^9,!"3NJ8;zNs$O!"LaTeX $, LR-box H7$F=hM}G-$kbNJiJsGb9=$$$^;$s!#0LCV9g$o $;$r40A4$K9T$&KO!"\rule{}{} $hM-MQ$G7g$&!#0J2<b;2:H **pslatex (p. 234)**!#J#?t9TKEOk%i%Y%k$r@8@.$9$k>l9g!"\shortstack $r;HMQ$7F/$@$5$$!#Nc:

```
set ylabel '[r]{\shortstack{first line \\ second line}}'
```

%3%^%s%I **set label** $N%*%W%7%g%s **back** $O!"B>$N=PNO7A<0HOdd0[JkJ}K!$G=hM}$7$^$9!#**back** $r;HMQ$7$?%i%Y%k$O!"B>N9YF$NIA2hMWAG$N8emK0u;z$7!"**front** $r;HMQ$7$?%i%Y%k$O!"B>N9YF$N>e$K0u;z7^$9!#

3N%I%i%$%P$O2 DN0[Jk%U%!%$%k$r:n@.7^$9!#0l$D$O?^$Neps $+$^$?$Opdf ItJ,$G!"$b$&0l$D$OLaTeX ItJ,$G$9!#$=$NLaTeX %U%!%$%k$NL>A0$O!"%3%^%s%I **set output** NbNr;HMQ$7!"eps/pdf %U%!%$%k$NL>A0$O!"$=$N3HD%;R(DL>o$O'.tex') $r'.eps' $+'.pdf' KCV-49$($?bN$r;HMQ7^$9!#=PNO%U%!%$%k;XDj$7J+C?>l9g$O!"LaTeX =PNO$O7^;$s!#**multiplot** %b!<%I0J30GO!"<!$Nplot $r9T$&A0$K=PNO%U%!%$%krJD8kN$rK:$l$J$$$G$/$@$5$$!#

3N2hA|r"J?$NLaTeX J8=q$K<h$j9~$ 'KO! "\input{filename}' $r;HMQ$7F/$@$5$$! #.eps' $d'.pdf' %U%! %$%k$O! "\includegraphics{...} %3%^%s%I$G<h$j9~$ 'NG! "LaTeX J8=q$N%W%j%"%s%V%k$K\usepackage{graphicx} $rF~$1kI,MW,$"$j$^$9! #?'IU$-$NJ8;z (%*%W%7%g%s **colourtext**) $r;HMQ$9$k>19g$O! "%W%j%"%s%V%k$K \usepackage{color} $bF~$1kI,MW,$"$j$^$9! #

%U%)%s%HA*Br$K4X$9$k5sF0$O! "%X%C%@! <%b! <%I$K0MB8$7$^$9! #$$$:1N>19gGb! "M?$ (i1$?%U%)%s%H%5%$%:$O E,@Z$JBg$-$5$r7W;;$9kN$K;H$o1^$9! #**standalone** %b! <%I$r;H$C$F$$J$>19g$O! "$=$1rFI_3s$@$H3m $G<B:]$KLaTeX $,;HMQ$7$F$$k%U%)%s%H$H%U%)%s%H%5%$%:$,;H$o1kNG! "%U%)%s%H$rJQ99$9kK$OLaTeX $N%3%^%s%I$r;HMQ7F$/$@$5$$! #LaTeX J8=q$NJ}$G12pt $N%U%)%s%H%5%$%:$r;H$C$F$$1$P! "%*%W%7%g%s$H$7 $F'", 12"' $r;XDj$7F/$@$5$$! #%U%)%s%HL>$OL5;k$5$1$^$9! #'standalone' $N>19g$O! "M?$ (i1$?%U%)%s%H$H %U%)%s%H%5%$%:$r;HMQ7^$9! #>\:Y$O0J2<$r;2>H$7F/$@$5$$! #

J8;zNs$r?'IU$1$7$F0u;z9k$+$I$&$+$O! "TeX $N%V! <%kJQ?t \ifGPcolor $H\ifGPblacktext $G@)8f$G$-$^$9! # \ifGPcolor $,true $G\ifGPblacktext $,false NH$-N_J8;zNs$,?'IU$1$5$1$^$9! #$3$1iNJQ99$O! "@8@.$5 1?TeX %U%!%$%kCf$G9T$&$+! "$^$?$OBg0hE*$K$"$J$?$NTeX %U%!%$%k$N%W%j%"%s%V%k$G! "Nc$ ($P0J2<$Nh& K7$F@_Dj$G$-$^$9:

```
\newif\ifGPblacktext
\GPblacktexttrue
```

6I=jE*$J@_Dj$O! "Bg0hE*JCM,J>19gKN$_8zNO$r;}A^$9! #

=PNO7A<0cairolatex $r;H$&>19g$O! "%3%^%s%I **set output** $GTeX %U%!%$%k@_Dj9k:]$K%U%!%$%k$N3HD%;R(DL >o$O",tex") rD1F$/$@$5$$! #%0%i%U$N%U%!%$%kL>$O! "$=$N3HD%;R$rCV$-$+$ (k3HG:ni1$^$9! #

standalone %b! <%I$r;H$&>19g! "LaTeX %U%!%$%k$K40A4$JLaTeX $N%X%C%@$,DI2C$5$1! "%0%i%U%U%!%$%k$N%U%! %$%kL>$K$O"-inc" $,DI2C$5$1$^$9! #**standalone** %b! <%I$O! "dvips, pdfTeX, VTeX $r;H$&>19g$K@5$7$$%5$$ %:$N=PNO$r:n$kTeX %U%!%$%k$r@8@.$7$^$9! #%G%U%)%k%HGO**input** $G! "$3$1$OLaTeX J8=q$+$i\input %3%^ %s%I$G<h$j9~$^$1kI,MW,$"$k%U%!%$%k$r@8@.7^$9! #

"" $d "default" 0J30$N%U%)%s%H$rM?$($?>19g! "$=1O LaTeX $N%U%)%s%HL>$G$"$kH_J5$1$^ $9! #$=1O ',' 6h@ZjG:GBg 3 DNItJ,$+$iJk! "'fontname,fontseries,fontshape' $N7A<0$G$9! #%G%U %)%k%H$N fontshape $d fontseries $r;H$$?$$>19g$O! "$=1i$O>JN,$G$-$^$9! #$hCF! "%U%)%s%HL>$N <B:]$N=q<0$O! "'{fontname}{,fontseries}{,fontshape}' HJj^$9! #(LuCm hj gnuplot Iw$K8@$($P '{<fontname>}{,{<fontseries>}{,<fontshape>}}') L>A0$N3FItJ,$N;XDjK!$O! "LaTeX $N%U%)%s%H7O$N47=, $K=>$&I,MW$,$"j^$9! #%U%)%s%HL>(fontname) $O3$+$i4J8;zND9$5$G! "0J2<$Nh&KJCF$$$^$9: :G=i $NJ8;z$O%U%)%s%H$N6!5k<T! "<!$N2DNJ8;z$O%U%)%s%HL>MQ! "%*%W%7%g%sH7$FFCJL$J%U%)%s%HMQ$K1J8;zDI 2C$G$-$^$9! #Nc$ ($P! "'j' $O8E$$%9%?%$%k$N?t;zMQ$N%U%)%s%H! "'x' $O% (%-%9%Q! <%H%U%)%s%HMQ$G$9! #B?/$N%U%) %s%HL>$,0J2<$K5-=R$5$1$F$$^$9:

http://www.tug.org/fontname/fontname.pdf

Nc$ ($P! "'cmr' $OComputer Modern Roman $r! "'ptm' $OTimes-Roman, 'phv' $OHelvetica $r0UL#$7$F$$$^ $9! #font series $O! "%0%j%U$NB@5rI=$7! "B?/$N>19g$O! "'m' $,I8=`("medium")! "'bx' $+'b' $,B@;z(bold) $N %U%)%s%H$r0UL#7^$9! #font shape $O! "0lHIE*$K$O'n' $,N)BN(upright)! "'it' $,%$%?%j%C%/(italic)! "'sl' $,<P BN(slanted)! "'sc' $,%9%b! <%k%-%c%T%?%k(small caps) $r0UL#$7$^$9! #0[Jkseries $dshapes $rDs6!$9$k%U%) %s%H$b$"$j$^$9! #

Nc:

Times-Roman $N%\! <%k%IBN(<~$j$NJ8;zNs$HF1$87A>u) $r;H$&KO:

```
set terminal cairolatex font 'ptm,bx'
```

Helvetica, %\! <%k%IBN! "%$%?%j%C%/$r;H$&$K$O:

```
set terminal cairolatex font 'phv,bx,it'
```

<~jHF1$8$G<PBN$N7A>u$N%U%)%s%H$r;H$&KO:

```
set terminal cairolatex font ',,sl'
```

%9%b! <%k%-%c%T%?%k$r;H$&KO

```
set terminal cairolatex font ',,sc'
```

3NJ}K!GO! "%F%-%9%H%U%)%s%H$@$1$,JQ99$5$1$^$9! #t<0%U%)%s%H$bJQ99$7$?$$$>19g$O! "%U%!%$%k"gnuplot.cfg" $+! "$^$?$O0J2<$G@bL@$9$k%*%W%7%g%s**header** $r;H$&I,MW$,$"j^$9! #

standalone %b!<%IGO!"%U%)%s%H%5%$%:$O%3%^%s%I **set terminal** $G;XDj$7$?%U%)%s%H%5%$%:$r<h$j$^$9!#;XDj7?%U%)%s%H%5%$%:$r;H$&$?aKO%U%!%$%k"size<size>.clo" $,LaTeX $N8!:w%Q%9$K$"$kI,MW$,$"j^$9!#%G%U%)%k%H$G$O10pt, 11pt, 12pt $r%5%]!<%H$7$F$$$^$9!#%Q%C%1!<%8"extsizes" $,%$%s%9%H!<%k5l$F$$$l$P!"8pt, 9pt, 14pt, 17pt, 20pt $bDI2C$5l^$9!#

%*%W%7%g%s **header** $CO1l$D$NJ8;zNs$r0z?tH7$F<hj!"$=$NJ8;zNs$r@8@.9kLaTeX %U%!%$%k$K=q$-=P$7$^$9!#**standalone** %b!<%IGO!"$=$l$O%W%j%"%s%V%k$N\begin{document} $ND>A0$K=q$-$^$9,!"**input** %b!<%I$G$O!"$=lO%0%i%U$K4X$9k9YF$N@_Dj$r6I=j2=9k$?$a$N\begingroup %3%^%s%I$N$ND>8e$K=q$-$^$9!#

Nc:

T1 %U%)%s%H%(%s%3!<%G%#%s%0$r;H$$!"%F%-%9%H%U%)%s%H$H?t<0%U%)%s%H$rTimes-Roman $K!"sans-serif %U%)%s%H$rHelvetica KJQ(kK$O:

```
set terminal cairolatex standalone header \
"\\usepackage[T1]{fontenc}\n\\usepackage{mathptmx}\n\\usepackage{helvet}"
```

%0%i%UFbGOB@;z(bold) $r;H$&$,!"%0%i%U30$N%F%-%9%HO=$&$7$J$$:

```
set terminal cairolatex input header "\\bfseries"
```

LaTeX $,%U%!%$%k"gnuplot.cfg" $r8+$D1k$H!"**standalone** %b!<%I$GO=lr%W%j"%s%V%k$K<h$j9~$_$^$9!#$3lO!"5i$K@_Dj$rDI2C9kNK;H$($^$9!#Nc: J8=q$N%U%)%s%H$r!"?t<0%U%)%s%H("mathptmx.sty" $,=hM}) $b9g$o$;$F Times-Roman, Helvetica, Courier K9kK$O:

```
\usepackage{mathptmx}
\usepackage[scaled=0.92]{helvet}
\usepackage{courier}
```

%U%!%$%k"gnuplot.cfg" $O!"%3%^%s%I **header** $G@_Dj$9$k%X%C%@!<>pJs$hjbA0KFI_9~$_$^9N$G!"'gnuplot.cfg" $G@_Dj$9kbNr **header** $r;H$C$F>e=q$-9k3H$,$G$-$^$9!#

Canvas

=PNO7A<0 **canvas** $O!"HTML5 $Ncanvas MWAG>e$KIA2h9kjavascript %3%^%s%I$N=89g$r@8@.7^$9!#=q<0:

```
set terminal canvas {size <xsize>, <ysize>} {background <rgb_color>}
                    {font {<fontname>}{,<fontsize>}} | {fsize <fontsize>}
                    {{no}enhanced} {linewidth <lw>}
                    {rounded | butt | square}
                    {dashlength <dl>}
                    {standalone {mousing} | name '<funcname>'}
                    {jsdir 'URL/for/javascripts'}
                    {title '<some string>'}
```

<xsize> $H<ysize> $OIA2hNN0h$N%T%/%;%kC10IGN%5%$%:$r@_Dj7^$9!#standalone %b!<%I$G$N%G%U%)%k%H$N%5%$%:$O!"600x400 %T%/%;%k$G$9!#%G%U%)%k%H$N%U%)%s%H%5%$%:$O10 $G$9!#

Cm %U%!%$%k canvastext.js $GDs6!$7$F$$$kHershey simplex Roman %U%)%s%H$N%"%9%-!<ItJ,$N%U%)%s%H0lD@1,MxMQG-$^$9!#3l$O!"%U%!%$%kcanvasmath.js GCV-49$($k3HbG$-!"$=3K$OUTF-8 %(%s%3!<%I$5l?Hershey simplex Greek $Hmath symbols $b4^$^lF$$$^$9!#B>$N=PNO7A<0$K9g$o$;$F!"**font "name,size"** $N7A<0$b;H$($kh&KJCF$$$^$9!#:#$NH3$m**name** $N%U%)%s%HL>ItJ,$OL5;k5l$^$9,!"$=$N$&A$K%V%i%&6$,L>A0IU$-%U%)%s%H$r%5%]!<%H$7$@$9G7g&!#

%G%U%)%k%H$N**standalone** %b!<%I$O!"HTML 5 $Ncanvas MWAG$r;HMQ7F%0%i%U$rIA2h$9kh$&$Jjavascript %3!<%I$r4^$`HTML %Z!<%8$r@8@.$7$^$9!#$=$NHTML %Z!<%8$O!"2 $D$NI,MWJjavascript %U%!%$%k'canvastext.js'!"'gnuplot_common.js' $K%j%s%/$7$^$9!#E@@~$r%5%]!<%H$7$F$$$kDI2C%U%!%$%k'gnuplot_dashedlines.js' $,I,MWG$9!#%G%U%)%k%H$G$O$=$l$i$O%m!<%+%k%U%!%$%k$X$N%j%s%/$G!"Unix 8_49$N%7%9%F%`GODL>oO=li%G%#%l%/%H%j/usr/local/share/gnuplot/<version>/js K"j^$9!#B>$N4D6-KD$$$F$O!"%$%s%9%H!<%k$K4X$9$kCm0U$r;2>H7F$/$@$5$$!#3N@_Dj$O!"%*%W%7%g%s**jsdir** KJLN%m!<%+%k%G%#%l%/%H%j!"$"$k$$$O0lHIE*$JURL $r;XDj$9k3HGJQ9gG-$^$9!#%0%i%U$r%j%b!<%H%/%i%$%"%s%H%^%7%s$G8+$lkh$&$K9k>l9g$O!"DL>o$O8e<T$N@_Dj,E,@Z$G7g$&!#

canvas =PNO7A<0$G@8@.$5lkIA2hO9YF%^%&%9A':n2DG=$G$9!#%-!<%o!<%I**mousing** $rDI2C$9kH!"**standalone** %b!<%I$N%0%i%U$N2<$K%^%&%9%H%i%C%-%s%0%\%C%/%9rD1^$9!#$3lO!"**canvastext.js** $,CV$+lF

$$kNHF1$8%m!<%+%k%G%#%l%/%H%j!"$^$?$O URL Fb$N!"'gnuplot_mouse.js' $H$$$&javascript %U%!%$%k$X$N%j%s%/$H'gnuplot_mouse.css' $H$$$&%^%&%9%\%C%/%9$K4X$9$k%9%?%$%k%7!<%H$bDI2C$7$^$9!#

%*%W%7%g%s **name** $O!"javascript N_$r4^$'%U%!%$%k$r0l$D@8@.7^$9!#$=l,4^$'javascript 4X?t$H!"$=l,IA2h9k canvas MWAG$N id $NN>J}$O!"0J2<$NJ8;zNs%Q%i%a!<%?$+$i<h$il^$9!#Nc($P0J2<$N%3%^%s%I

```
set term canvas name 'fishplot'
set output 'fishplot.js'
```

$O!"javascript 4X?t fishplot() $r4^$'%U%!%$%k$r@8@.$7!"$=$N4X?t$O%0%i%U$r id=fishplot $N canvas >e$KIA2h7^$9!#$3$Njavascript 4X?t$r8F$S=P$9 HTML %Z!<%8$O!"><e$G@bL@7?canvastext.js bFI_9~$^$J1l$P$$$1$^$;$s!#>e$Nh&$K@8@.$7$?!"$3$N fishplot $r<h$j3':'G>.$N HTML %U%!%$%k$O0J2<$Nh&KJj^$9:

```
<html>
<head>
    <script src="canvastext.js"></script>
    <script src="gnuplot_common.js"></script>
</head>
<body onload="fishplot();">
    <script src="fishplot.js"></script>
    <canvas id="fishplot" width=600 height=400>
        <div id="err_msg">No support for HTML 5 canvas element</div>
    </canvas>
</body>
</html>
```

3N%-%c%s%P%9>eKIA+lk$=$l$>$l$N%0%i%U$NL>A0$O!"fishplot_plot_1, fishplot_plot_2 EyHJj^$9!#30It $N javascript %k!<%A%s$G$=$lir;2>H9k3HbG$-$^$9!#Nc: gnuplot.toggle_visibility("fishplot_plot_2")

Cgm

cgm %I%i%$%P$O CGM =PNO (Computer Graphics Metafile Version 1) $r@8@.$7$^$9!#3N%U%!%$%k%U%)!<%^%C%H$O ANSI 5,3J=q X3.122-1986 "Computer Graphics - Metafile for the Storage and Transfer of Picture Description Information" $GDj5A$5lF$$$kbN$N0lItJ,$G$9!#

=q<0:

```
set terminal cgm {color | monochrome} {solid | dashed} {{no}rotate}
                 {<mode>} {width <plot_width>} {linewidth <line_width>}
                 {font "<fontname>,<fontsize>"}
                 {background <rgb_color>}
 [deprecated]    {<color0> <color1> <color2> ...}
```

solid $OA4$F$N6J@~$r<B@~GIA-!"Is$JE@@~%Q%?!<%s$bEIjDV7$^$9; <mode> $O **landscape**, **portrait**, **default** $N$$:l+; <plot_width> $O%]%$%s%HC10LGN%0%i%U$N2>Dj$5lF$$$kI}; <line_width> $O%]%$%s%HC10LGN@~I}(%G%U%)%k%H$O1); <fontname> $O%U%)%s%H$NL>A0(0J2<$N%U%)%s%H0lMw;2>H); $=$7$F<fontsize> $O%]%$%s%HC10LGN%U%)%s%H$N%5%$:(%G%U%)%k%H$O12) $G$9!#

:G=i$N6 DN%*%W%7%g%sOI$N=gHV$G;XDj7F$b9=$$$^$;$s!#**default** $rA*Br$9kH!"A4FN%*%W%7%g%sr=$N%G%U%)%k%H$NCMK7$^$9!#

@~$N?'$r **set term** %3%^%s%I$G@_Dj$9$k;EAH$_$O!":#$OHs?d>)$G$9!#Beoj$K!"GX7J?'$OJ,N%5l$?%-!<%Ibackground $G!"@~$N?'$O **set linetype** $G@_Dj$9Y-G7g&!#3NHs?d>)$N;EAH$_GO?'$O'xrrggbb' $N7A<0$G<u1D1^9,!"x $OJ8;z'x' $=$NbN!"'rrggbb' $O16 ?J?t$G$N@V!"NP!"@D$N@.J,$G$9!#:G=i$N?'$rGX7J?'H7$F;H$$!"$=$N8e$KB3$/?';XDj$r=g<!@~$N?'HH7F3djEvF$F$$$^7?!#

Nc:

```
set terminal cgm landscape color rotate dashed width 432 \
                linewidth 1  'Helvetica Bold' 12       # %G%U%)%k%H
set terminal cgm linewidth 2  14  # $d$d9-$$@~$H$d$dBg$-$$%U%)%s%H
set terminal cgm portrait "Times Italic" 12
set terminal cgm color solid    # LIE]$JE@@~$J$I>C$($F$7$^$(!
```

CGM $N%U%)%s%H (font)

CGM (Computer Graphics Metafile) %U%!%$%k$N:G=i$NItJ,!"%a%?%U%!%$%k$N5-=RItJ,$K$O!"%U%)%s%H%j%9%H (font table) $,4^$^lF$$$^$9!#2hA|$NK\BNIt$G$O!"%U%)%s%HO3$N%j%9%H$K$"$kHV9f$G;XDj$5l^$9!#%G%U%)%k%H$GO3$N%I%i%$%P$O0J2<$N 35 8D$N%U%)%s%H%j%9%H$r@8@.$7!"$5iK3N%j%9%H$N **Helvetica**, **Times**, **Courier** $N3F%U%)%s%H$N **italic** $r **oblique** GCV-4 9$ ($?$b$N!"$*hS$=$N5UKh$k 6 DNDI2C$N%U%)%s%H$, 4^$^l^$9 (Microsoft Office $H Corel Draw CGM $N import %U%#%k%?$O **italic** $H **oblique** $rF1$8bNH7$F07$&$+$i$G$9)!#

CGM fonts	
Helvetica	Hershey/Cartographic_Roman
Helvetica Bold	Hershey/Cartographic_Greek
Helvetica Oblique	Hershey/Simplex_Roman
Helvetica Bold Oblique	Hershey/Simplex_Greek
Times Roman	Hershey/Simplex_Script
Times Bold	Hershey/Complex_Roman
Times Italic	Hershey/Complex_Greek
Times Bold Italic	Hershey/Complex_Italic
Courier	Hershey/Complex_Cyrillic
Courier Bold	Hershey/Duplex_Roman
Courier Oblique	Hershey/Triplex_Roman
Courier Bold Oblique	Hershey/Triplex_Italic
Symbol	Hershey/Gothic_German
ZapfDingbats	Hershey/Gothic_English
Script	Hershey/Gothic_Italian
15	Hershey/Symbol_Set_1
	Hershey/Symbol_Set_2
	Hershey/Symbol_Math

3liN%U%)%s%H$N:G=i$N13 8D$O WebCGM $GMW5a$5lF$$kbN$G$9!#Microsoft Office $N CGM import %U%#%k%?$O$=$N13 8D$NI8=`%U%)%s%H$H'ZapfDingbats' $H'Script' $r%5%]!<%H$7$F$$^$9!#$7$+$7!"$=$N%9%/%j%W%H (script) %U%)%s%H$O'15' $H$$&L>A0G7$+%"%/%;%9$G$-$^$;$s!#Microsoft $N import %U%#%k%?$N font NCV-4 9$ ($K4X$9kh$j>\$7$$>pJsKD$$F$O!"

```
C:\Program Files\Microsoft Office\Office\Cgmimp32.hlp
```

$N%X%k%W%U%!%$%k!"$^$?$O

```
C:\Program Files\Common Files\Microsoft Shared\Grphflt\Cgmimp32.cfg
```

$N@_Dj%U%!%$%kJI$r%A%'%C%/$7F/$@$5$$!#

set term %3%^%s%I$G%G%U%)%k%H$N%U%)%s%H%j%9%HKJ%2DG=$G$9!#$=$N>19g!"$=$N;XDj7?%U%)%s%H$,:G=i$K8=ol$k?7$7$$%U%)%s%H%j%9%H$,:n$il^$9!#$=$N%U%)%s%HL>$K4X7F!"%9%Z%k!"C181$N@hF,$NBgJ8;z2=dI3$K%9%Z!<%s$k+JI$,!":n$ilk CGM %U%!%$%k$rI$'%"%W%j1!<%7%g%s$KHC$FE,@Z$JbN$G"$k$+$rAcsH3NG'9kI,MW$,$"j^$9!#(gnuplot HG0U$N MIL-D-28003A = '5r%"%W%j1!<%7%g%s$O!"%U%)%s%HL>$NBgJ8;z>.J8;z$N0c$$$OL5;k7^$9!#) ?7$7$$%U%)%s%H$r$$$/DbDI2C7?$>19g$O!"**set term** %3%^%s%I$r7+$jJV$7;HMQ$7F/$@$5$$!#

Nc:

```
set terminal cgm 'Old English'
set terminal cgm 'Tengwar'
set terminal cgm 'Arabic'
set output 'myfile.cgm'
plot ...
set output
```

set label %3%^%s%IGO?7$7$$%U%)%s%H$rF3F~$9k3HOG-$^$;$s!#

CGM $N%U%)%s%H%5%$%: (fontsize)

%U%)%s%H$O! "%Z! <%8$,6 %$%s%A$NI}G"kH2>Dj7F?-=L5l$^$9! **#size** %3%^%s%I$G%Z! <%8$N=D2#Hf$,JQ99$5lF$$$?$j! "CGM %U%!%$%k$,0[$J$kI}$KJQ49$5$l$F$$k>19g! "7k2LH7$F%U%)%s%H$N%5%$%:$b3HBg5l$?$j=L>.5l$?$j$9%k$3HKJj$^$9! #2>Dj5l$F$$kI}$rJQ99$9%kKO! "**width** %*%W%7%g%s$r;HMQ$7F/$@$5$$! #

Cgm linewidth

linewidth %*%W%7%g%s$O@~$NI}$r%]%$%s%HC10L(pt) $G@_Dj$7$^$9! #%G%U%)%k%H$NI}$O1 pt $G$9! **#fontsize** $d **width** %*%W%7%g%s$NH3mG@bL@5l$F$$kh&$K! "%Z! <%8$N<B:]$NI}$KhCF=$N=L<\$O1F6A$r<u$1$^$9! #

Cgm rotate

norotate %*%W%7%g%s$O%F%-%9%H$N2sE>r7$J$$$h$&$K7^$9! #Nc$($P Word for Windows 6.0c MQ$N CGM F~NO%U%#%k%?$O2sE>5l$?J8;zNs$r<u$1IU$1$^$9,! "Word $KIUB0$9$k DRAW %(%G%#%?$O$=$l$r<u$1IU1k3H$,$G$-$:! "%0%i%U$rJT=8$9kH(Nc$($P6J@~$K8+=P$7rD1k)! "A4FN2sE>5l$?J8;zNs$O?eJ?J}8~KJCFJ]B8$5$lF7$^$$! "Y <4$N8+=P$7$O%/j%C%W$5lk6-3&@~$r1[$(F7$^$&G7g&! **#norotate** %*%W%7%g%s$r;H$($P! "8+1I$(NNI/J>l=j$+$iY <4$N8+=P$7$,;O$^CF7^$$$^$9,! "JT=8$KhC$F%@%a! <%8$r<u1k3HOJ$/$Jj^$9! **#rotate** %*%W%7%g%s$O%G%U%)%k%H$N5sF0$rJ]>Z$7$^$9! #

Cgm solid

solid %*%W%7%g%s$OIA2h$NE@@~$N@~IA2h%9%?%$%k$rL58z$9kN$K;H$$$^$9! #$3lO! "%+%i! <$,M-8z$G$"$k>19g! "$^$?2E@@~K9k3HG%0%i%U$,8+$K$/$/Jk>19g$KM-MQ$G7g$&! **#dashed** %*%W%7%g%s$O%G%U%)%k%H$N5sF0$rJ]>Z$7! "3N>19g8D! 9$N@~<o$K0[JkE@@~$N%Q%?! <%s$,M?$($il^$9! #

CGM $N%5%$%:(size)

CGM %0%i%U$N%G%U%)%k%H$N%5%$%:$O! "2#CV$-(landscape) GOI}32599, =D23457! "=DCV$-(portrait) GOI}23457, =D32599 $G$9! #

Cgm width

CGM %U%!%$%k$NA4FND9$5$OCj>]E*$JC10L$r;}$A! "$=$N%U%!%$%krFI`%"%W%j1! <%7%g%s$,:G=*E*$J%0%i%U$N%5%$%:$r7hDj$7$^$9! #%G%U%)%k%HGO:G=*E*$J%0%i%U$NI}$O6%$%s%A(15.24 cm) G"kH2>Dj5l$F$$$^$9! #$3$NI}$O@5$7$%U%)%s%H%5%$%:$r7W;/9kNK;Hol! "**width** %*%W%7%g%s$GJQ99$G$-$^$9! #%-! <%o! <%I **width** $N8e$KI}$r%]%$%s%HC10L$G;XDj$7$^$9! #($3$3$G! "%]%$%s%H$O PostScript $HF1MM1/72 %$%s%A$r0UL#$7$^$9! #3NC10L$O TeX GO"big point" $H8F$PlF$$$^$9! #) B>$NC10L$+$iJQ49$9$kKO! "gnuplot $N?t<0$,;H$($^$9! #

Nc:

```
set terminal cgm width 432            # %G%U%)%k%H
set terminal cgm width 6*72           # >e$HF1$8CM
set terminal cgm width 10/2.54*72     # 10 cm $NI}
```

Cgm nofontlist

%G%U%)%k%H$N%U%)%s%H%j%9%H(font table) $O WebCGM $G4+9p$5lF$$$k%U%)%s%H$r4^$s$G$$$F! "3l$O Microsoft Office $H Corel Draw $N CGM (Computer Graphics Metafile) F~NO%U%#%k%?$KE,9g$7$F$$$^$9! #B>$N%"%W%j1! <%7%g%s$OO[$J$k%U%)%s%H! "$"$k$$$O[Jk%U%)%s%HL>$r;HMQ$9k+bCNl$^$;s,! "$=$l$O%^%Ke%"%k$K$O=q$+lF$$$J$$$+bCNl$^$;$s! #%*%W%7%g%s**nofontlist** (**winword6** $bF1$80UL#) $r;HMQ$9kH CGM %U%!%$%k$+$i%U%)%s%H%j%9%H$r:o=|7^$9! #$3$N>19g! "FI$_9~s@%"%W%j1! <%7%g%s$O%G%U%)%k%H$N%U%)%s%H%j%9%H$r;HMQ$9kG7g$&! #gnuplot O=$N>19gGb%U%)%s%HHV9f$NA*BrN?a$K<+J,$N%G%U%)%k%H$N%U%)%s%H%j%9%H$r;HMQ7^$9! #hCF! "'Helvetica' $,1 HV$KJj! "$=$l$,$"J?$N;HMQ$9$k%"%W%j1! <%7%g%s$N%G%U%)%k%H%U%)%s%H%j%9%H$N:G=i$N%bNKJj$^$9! #'Helvetica Bold' $,$=$N%U%)%s%H%j%9%H$N2HVL\$N%U%)%s%H$KBP1~$7! "B>$bF1MM$HJj$^$9! #

Context

ConTeXt $O(3($NIA2hN?aK) Metapost $H9bEY$KM;9g$7!"9bIJ<A$JPDF J8=q$r@8@.$9k?aNTeX $N%^%/%m%Q%C%1!<%8$G$9!#$3$N=PNO7A<0$O!"Metafun %=!<%9$r@8@.$7$^$9$,!"$3lO<jF0$GJT=8$G$-!"30It$+i[HsIN3Hr"J?$,@_Dj$G$-$^$9!#

ConTeXt + gnuplot %b%8%e!<%k$NJ?6QE*$J%f!<%6KO!"3N%Z!<%8rFI`hj$b!"**Using ConTeXt** $r;2>H$9k+!"ConTeXt $N gnuplot %b%8%e!<%k$N%^%K%e%"%k$r;2>H$9k3Hr?d>)7^$9!#

=PNO7A<0 **context** $O!"0J2<$N%*%W%7%g%s$r%5%]!<%H$7$F$$$^$9:

=q<0:

```
    set term context {default}
            {defaultsize | size <scale> | size <xsize>{in|cm}, <ysize>{in|cm}}
            {input | standalone}
            {timestamp | notimestamp}
            {noheader | header "<header>"}
            {color | colour | monochrome}
            {rounded | mitered | beveled} {round | butt | squared}
            {dashed | solid} {dashlength | dl <dl>}
            {linewidth | lw <lw>}
            {fontscale <fontscale>}
            {mppoints | texpoints}
            {inlineimages | externalimages}
            {defaultfont | font "{<fontname>}{,<fontsize>}"}
```

standalone GJ$%0%i%U(**input**) GO!"%*%W%7%g%s$O%0%i%U%5%$:$rA*Br$9$k**size**!"$9YF$N%i%Y%k$rG\N(<fontscale> $G?-=L$9$k**fontscasle**!"$*hS font %5%$%:$N$_0UL#$r;}$A!"B>$N%*%W%7%g%s$O7Y9p$J$/L5;k$5lkN_$G!"$=liO=$N%0%i%U%#C%/$rFI$_9~$`.tex %U%!%$%k$NJ}$G@_Dj$7F/$@$5$$!#85$NJ8=q$N%U%)%s%H$,12pt GOJ>$l9g$O!"E,@Z$J%U%)%s%H%5%$%:$r;XDj9k3Hr6/$/?d>)7^$9!#$=lKhj!"gnuplot $,%i%Y%kMQ$KIl$/$i$$$NBg$-$5$N%9%Z!<%9$r3NJ]9l$P$$$$+rCNk3H,G-$^$:!#

default $O!"$9YF$N%*%W%7%g%s$r%G%U%)%k%HNCMK%j%;%C%H7^$9!#

defaultsize $O!"IA2h%5%$:$r5in x 3in $K@_Dj$7$^$9!#**size** <scale> $O!"IA2h%5%$:$r%G%U%)%k%H%5%$:$N<scale> G\$K7^9,0z?t$r',' 6h@Z$j$G2$DM?$($?>l9g$O!":G=i$NbN$O2#$N%5%$:$r!"2$DL\$NbN$O?bD>%5%$:$r@_Dj$7$^$9!#$=$liN%5%$:$K$O!"C10L$H7F%$%s%A('in'), %;%s%A('cm') $,;H$($^$9$,!">JN,$7$?>l9g$O%G%U%)%k%HCMKBP9kHfG$"$kH_J7$^$9!#

input (%G%U%)%k%H) $O!"B>$N ConTeXt J8=q$+$i<h$j9~$a$k%0%i%U$r@8@.7^$9!#**standalone** $O!"$=lK?t9TDI2C$7!"$=$l<+?H$,$=$N$^$^3%s%Q%kG-kh$&$K7^$9!#$=$N>l9g!"**header** %*%W%7%g%s$,I,MW$KJk$+$b7l$^$;$s!#

standalone $N%0%i%U$K@_Dj/Dj5A/%^%/%m$rDI2C$7$?$>l9g$O **header** $r;HMQ$7F/$@$5$$!#%G%U%)%k%H$O **noheader** $G$9!#

notimestamp $O!"%3%a%s%HItJ,$NF|;~$N=PNO$rM^@)7^$9(%P!<%8%g%s4IM}%7%9%F%`$r;HCF$$$k>l9g!"F|IU$@$10c$&$bNr?7$7$%P!<%8%g%sH7$FEPO?$7$?$/OJ$$$G7g$&)!#

color (%G%U%)%k%H) $O!"%+%i!<IA2h$r@8@.7^9,!"**monochrome** $C0l@Zspecial $rF~$l$^$;$s!#Gr9u%W%j%s%?MQ$K$O!"$=$N5sF0$r3sJIwKJQ$($?J}$,$bCHNI$/$JkH$$$&%"%$%G%"$r;}CF$$k?M$O!"@'HsDs0F$7F/$@$5$$!#

rounded (%G%U%)%k%H) $H **mitered**, **beveled** $O!"@~J,$N@\9gIt$N7A>u$r@)8f$7!"**round** (default) $H **butt**, **squared** $O!"@~J,$NC<$N7A>u$r@)8f7^$9!#>\:Y$O!"PostScript $+PDF $N%j%U%!%l%s%9%^%K%e%"%k$r;2>H7F$/$@$5$$!#7c7/JQ2=9k4X?t$HB@$$@~MQKO!"@~J,$N@\9gIt$G$N@m$C?3QrHr1kh$&$K**rounded** $H **round** $r;H$&$H$$$$G7g$&!#(3$l$K4X$9$k0lHLE*$J;EAH$_$O!"3N%*%W%7%g%s$r3FIA2h%9%?%$%kKh$KJL!9$K;XDjG-kh$&gnuplot $,%5%]!<%H$9Y-$@$H;W$$$^$9!#)

dashed (%G%U%)%k%H) $O!"0[$J$k@~<c$K0[JkE@@~%Q%?!<%s$r;H$!"**solid** $O!"$9YF$NIA2h$K<B@~$r;HMQ$7$^$9!#

dashlength ($^$?$O **dl**) $O!"E@@~$N@~J,$ND9$5$r<dl> G\$7$^$9!#**linewidth** ($^$?$O **lw**) $O!"$9YF$N@~I}$r<lw> G\$7$^$9!#(lw 1 $O0.5bp $r0UL#$7!"3l$OMetapost $NIA2h$N%G%U%)%k%H$N@~I}$G9)**fontscale** $O!"%F%-%9%H%i%Y%k$r%G%U%)%k%H$NJ8=q%U%)%s%H$N<fontscale> G\$K3HBg7^$9!#

mppoints $O! "Metapost $GIA2h$5$1$?Dj5A:Q$_$NE@$N7A>u$r;HMQ7^$9!#**texpoints** $O! "4JC1$K@_DjG-$k5-9f%;%C%H$r;HMQ7^$9!#$3$1$O! "0J2<Nh$&$K7F ConTeXt $GDj5A$G$-$^$9:

```
\defineconversion[my own points][+,{\ss x},\mathematics{\circ}]
\setupGNUPLOTterminal[context][points=tex,pointset=my own points]
```

inlineimages $O! "%P%$%J%j2hA|$rJ8;zNs$H7F=q$-=P$7$^$9,! "$3$1$O ConTeXt MKIV N_$G5!G=7^$9!# **externalimages** $O! "PNG %U%!%$%k$r30It=PNO$7! "$3$1$O ConTeXt MKII $G5!G=$7$^$9!#$3$1$,F0:n$9k?aK$O! "gnuplot $, PNG 2hA|=PNO$r%5%]!<%H7F$$$kI,MW$,$"j^$9!#

standalone $N%0%i%U$G$O! "**font** $G%U%)%s%HL>$H%5%$%:$r@_DjG-$^$9!#standalone GJ$$%b!<%I(**input**) GO! "%F%-%9%H%i%Y%k$K==J,$J%9%Z!<%9$r3d$jEvFk$?$a$K%U%)%s%H%5%$%:N_,0UL#$r;}$A$^$9%3%^%s%I

```
set term context font "myfont,ss,10"
```

$O! "0J2<$Nh&KJj^$9:

```
\setupbodyfont[myfont,ss,10pt]
```

Nc$($P5i$KDI2C$G **fontscale** $r0.8 $K@_Dj$9kH! "7k2LH7$F%U%)%s%H$O8pt NBg-5KJj! "

```
set label ... font "myfont,12"
```

$O9.6pt KJj^$9!#

E,Ev$J%?%$%W%9%/%j%W%H%U%)%s%H($H%X%C%@!<) $rMQ0U$9kN$O<+J,$G9TCF5bJ/$P%U%)%s%H$N@ZjBX($O8z2L$r;}A^$;$s!#ConTeXt MKII (pdfTeX) $NI8=%U%)%s%H$O! "0J2<Nh$&$K7F;H$($^$9:

```
set terminal context standalone header '\usetypescript[iwona][ec]' \
    font "iwona,ss,11"
```

%U%)%s%H$NMxMQ$K4X9k ConTeXt $N:G?7$N>pJsKD$$$F$O! "ConTeXt $NJ8=q! "wiki! "%a!<%j%s%0%j%9%H(%"!<%+%$%v) $rC5$7F_F/$@$5$$!#

Nc:

```
set terminal context size 10cm, 5cm     # 10cm, 5cm
set terminal context size 4in, 3in      # 4in, 3in
```

UTF-8 %($%s%3!<%I%i%Y%k$r standalone (%Z!<%8A4BN) %0%i%U$G;HMQ$9kK$O:

```
set terminal context standalone header '\enableregime[utf-8]'
```

Requirements

ConTeXt MQ$N gnuplot %b%8%e!<%k:

http://ctan.org/pkg/context-gnuplot

$H! ":G?7$N ConTeXt $,I,MW$G$9!#$=3+$i gnuplot $r8F$S=P9K$O! "write18 $r2DG=$K9kI,MW$,$"j^$9!#$[HsIN TeX G[IUJ*GO! "$3$1$O texmf.cnf $G shell_escape=t H9k3HG@_DjG-$^$9!#

3N=PNO7A<0Hh$j>\$7$$%X%k%WHNcK4X7F$O0J2<$b;2>H7F$/$@$5$$:

http://wiki.contextgarden.net/Gnuplot

Calling gnuplot from ConTeXt

ConTeXt J8=q$G%0%i%U$r:n@.9k:G$b4JC1$JJ}K!$O0J2<$NDL$j:

```
\usemodule[gnuplot]
\starttext
\title{How to draw nice plots with {\sc gnuplot}?}
\startGNUPLOTscript[sin]
set format y "%.1f"
plot sin(x) t '$\sin(x)$'
\stopGNUPLOTscript
\useGNUPLOTgraphic[sin]
\stoptext
```

$3$1$O<+F0E*$K gnuplot $r<B9T$7! "$=$N7k2L$N2hA|$rJ8=qCf$K<h$j9~$_$^$9!#

Corel

corel =PNO7A<0$O CorelDraw MQ$N=PNO$G$9!#

=q<O:

```
     set terminal corel {  default
                           | {monochrome | color
                                {"<font>" {<fontsize>
                                   {<xsize> <ysize> {<linewidth> }}}}}
```

$3$3$G!"%U%)%s%H%5%$%:(**fontsize**) $H@~I}(**linewidth**) $O%]%$%s%HC10L!"2#I}(**xsize**) $H=DI}(**ysize**) $O%$%s%AC10L$G$9!#%G%U%)%k%HNCMO$=$l$>$l!"monochrome, "SwitzerlandLight", 22, 8.2, 10, 1.2 $G$9!#

Debug

3N%I%i%$%P$O**gnuplot** $N%G%P%C%0$N$?$a$KDs6!$5lF$$$kbN$G$9!#$*$=i/%=!<%9%3!<%I$r=$@5$9$k%f!<%6N_$,;HMQ$9kbNG7g$&!#

Domterm

domterm =PNO7A<0$O!"domterm, qtdomterm %W%m%0%i%'Ey$N DomTerm %?!<%_%J%k%(%_%e%l!<%?>e$GF0:n$7$^$9!#3l$O!"%?!<%_%J%k=PNOFb$XD>@\ SVG %0%i%U2hA|rKda9~$'$3Hr%5%]!<%H7F$$$^$9!#http://domterm.org $r;2>H$7F/$@$5$$!#

svg =PNO7A<0$N%X%k%W$rFIsG$/$@$5$$!#

Dumb

%@%'C<Kv(**dumb**) %I%i%$%P$O!"ASCII J8;z$r;HMQ$7$F%F%-%9%HNN0h$KIA2h7^$9!#%5%$%:$N;XDj$H2~9T@)8fMQ$N%*%W%7%g%s$,$"$j$^$9!#

=q<O:

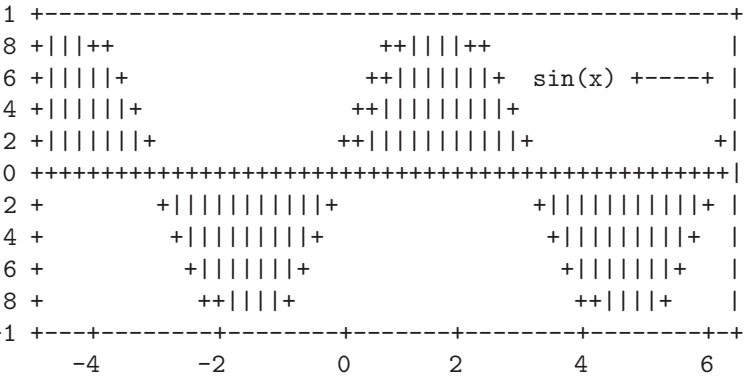
```
     set terminal dumb {size <xchars>,<ychars>} {[no]feed}
                       {aspect <htic>{,<vtic>}}
                       {[no]enhanced}
```

<xchars>, <ychars> $O%F%-%9%HNN0h$N%5%$%:$r@_Dj$7!"%G%U%)%k%H$O79 x 24 HJCF$$$^$9!#:G8e$N2~9T$O!"**feed** %*%W%7%g%s$,@_Dj5l$F$$$k>l9gN_=PNO5l$^$9!#

%*%W%7%g%s**aspect** $O!"%0%i%U$N%"%9%Z%/%HHf$N@)8f$K;HMQ7^$9!#$3lO?eJ?<4!"?bD><4$NL\@9$j9o$_$ND9$5$r@_Dj7^$9!#@0?t$N;XDjN_$,5v$5lF$$$F!"%G%U%)%k%H$O2,1 $G!"$3lO6&DL$N%9%/%j!<%s%U%)%s%H$N%"%9%Z%/%HHf$KBP1~$7$^$9!#

Nc:

```
     set term dumb size 60,15 aspect 1
     set tics nomirror scale 0.5
     plot [-5:6.5] sin(x) with impulse ls -1
```



Dxf

dxf %I%i%$%P$O!"AutoCad (%j%j!<%9 10.x) $K<h$j9~$'$3H,G-$k2hA|$r@8@.7^$9!#$3$N%I%i%$%P<+?H$K $O%*%W%7%g%s$O$"$j$^$;s,!"IA2h$K4X$9$k$$$/D+$NF'CD'$OB>$NJ}K!$GJQ9G-$^$9!#%G%U%)%k%HNBg-$5 $O AutoCad $NC10L$G$N 120x80 $G!"$3lO **set size** $GJQ9$G$-$^$9!#**dxf** $O7?'(Gr!"@V!"2+!"NP!"?e?'!"@D!"@V;g) $r;H$$$^9,!"3l$rJQ9$9kK$O%I%i%$%P%=!<%9%U%!%$%k$r=$@5$9kI,MW,$"$j$^$9!#Gr9u$N=PNOAuCV$r;H$&>19g!"$=li$N?'$O@~$NB@$5$N0c$$GI=8=5l$^$9!#>\:Y$O AutoCad $N0u:~/%W%m%C%?=PNO%3%^%s%I$K4X$9$k5-=R$r;2>H7F$/$@$5$$!#

Dxy800a

3N%I%i%$%P$O Roland DXY800A %W%m%C%?$r%5%]!<%H$7$^$9!#%*%W%7%g%sO"j^$;$s!#

Eepic

eepic %I%i%$%P$O LaTeX picture 4D6-$r3HD%$9kbNr%5%]!<%H7^$9!#$3lO **latex** %I%i%$%P$KBeokJL $JA*Br;h$G$9!#

3N%I%i%$%P$Khk=PNO$O!"LaTeX MQ$N"eepic.sty" %^%/%m%Q%C%1!<%8$H6&$K;Holk3Hr2>Dj7F$$$^$9!#$=lr;H$&$K$O!""eepic.sty" $H"epic.sty"!"$*hS"tpic" \special L?Na72$r%5%]!<%H$9$k%W%j%s%?%I%i%$%P$,I,MW$G$9!#$b$7!"$"J?$N;H$&%W%j%s%?%I%i%$%P$,$=$liN"tpic" \special L?Na$r%5%]!<%H$7$F$$J$>19g Gb!""eepicemu.sty" $r;H$&3HG=liN&AN$$/D+$r;H$(kh$&$KJj$^$9!#dvips $H dvipdfm $O "tpic" \special $r%5%]!<%H$7$F$$^$9!#

=q<O:

```
  set terminal eepic {default} {color|dashed} {rotate} {size XX,YY}
                     {small|tiny|<fontsize>}
```

%*%W%7%g%s: %*%W%7%g%sOG0U$N=gHV$GM?$($k3H$,$G$-$^$9!#'color' $O gnuplot $K \color{...} %3%^%s%I $r@8@.$5$;!"$=lKhj%0%i%U%r+%i!<K7$^$9!#3N%*%W%7%g%s$r;HMQ$9$k>19g$O!"latex J8=q$N%W%j%"%s %V%k$K \usepackage{color} $rF~$lkI,MW,$"$j$^$9!#'dashed' $O@~<o$KE@@~$r;HMQ$9k3Hr5v2D7^$9!#$3$N%*%W%7%g%s$r;XDj7J$$$H!"?'!9$JB@$5$N<B@~$N$_$,;Hol$^$9!#'dashed' $H 'color' $O0lJ}$N$_$,0UL#$r;}$A!"'color' $,;XDj$5l?>19g!"'dashed' $OL5;k$5l^$9!#'rotate' $OK\Ev$K2sE>(90 EY) 5l$?J8;zNs $r;HMQ$9kh$&$KJj$^$9!#;XDj7J$>19g$O!"1 J8;z1 J8;z!">e$K@Q$_>e2F$$/J}K!$G2sE>$5l?J8;z Ns$r:n$j$^$9!#3N%*%W%7%g%s$r;H$&>19g$O!"\usepackage{graphicx} $r%W%j%"%s%V%k$KF~lkI,MW$,$"j^$9!#'small' $O point %9%?%$%kGN%0%i%UIA2h$N0u$H7F\scriptsize $N5-9f$r;HMQ7^$9(B?J,$3lO TeX $G O@aG!"LaTeX2e G7$+;H$($J$$$G7g$&)!#%G%U%)%k%H$G$OI8=$N?t<0$N%5%$:$r;HMQ$7$^$9!#'tiny' $O!"$=lK\scriptscriptstyle $N5-9f$r;HMQ7^$9!#'default' $OA4$F$N%*%W%7%g%s$r%G%U%)%k%HNCMK%j;%C%H7^$9!#%G%U%)%k%H$O!"color OJ$7!"dashed line OJ$7!"5?;w2sE>(@Q$_>e$2) J8;zNs$N;HMQ!"Bg$-$J%5%$:$N5-9f$N;HMQ!"$G$9!#<fontsize> $Opicture 4D6-Fb$G$N%U%)%s%H%5%$:$r;XDj$9$k?t;z$G$9!#C10L$O pt (%]%$s%H) $G!"10 pt O[$\3.5 mm $G$9!#%U%)%s%H%5%$:$r;XDj7J$>19g!"A4$F$N%0%i%UFb$NJ8;z$O\footnotesize $K @_Dj$5l^$9!#

Cm0U: J8;z#($*$hS=$NB>(La)TeX $GFCJL$J0UL#$r;}$D$=$NB>$NJ8;z) $r\\(%P%C%/%9%i%C%7%e2 $D) $G%(%9%1!<%W$k3H$rK:$l$J$$$G$/$@$5$$!#%0%i%U$N3Q$,6a9.kHE@@~$O<B@~$Nh&KJj^$9!#($3l,tpic specials $N0lHIE*$JLdBjJN$+!"eepic.sty $ddvips/dvipdfm $N%P%0$,860xJN$+$O;dKOo+j^$;$s!#)%G%U%)%k%H$Neepic %0%i%U$NBg$-$5$O5x3 %$%s%A$G!"$3lOteminal %*%W%7%g%s$N **size** $GJQ992DG=$G$9!#?t$"kCfG!"E@(point) $O!"LaTeX $N%3%^%s%I"\Diamond", "\Box" JI$r;H$CFIA+l^$9!#$3li$N%3%^%s%I$O8=:_$OLaTeX2e $N%3%"$K$OB8:_$;$:latexsym %Q%C%1!<%8$K4^$^$l$F$$$^$9,!"$3$N%Q%C%1!<%84pK\G[I[$N0lIt$G"$j!"hC$FB?$/$N LaTeX $N%7%9%F%'$N0lItKJCF$$$^$9!#$3$N%Q%C%1!<%8$r;H$&$3HrK:lJ$$$G$/$@$5$$!#latexsym NBeojK amssymb %Q%C%1!<%8$r;H$&3H$b2DG=$G$9!#LaTeX $K4X$9$kA4$F$N%I%i%P%0$r;XDj$7;zNs$NG[CV$N@)8f$KFCJL$JJ}K!$rDs6!7^$9:'{'$G;O$^kJ8;zNs$O!"'}'GJD8kI,MW,$"$j$^$9$,!"$=$NJ8;zNsA4BN$,?eJ?J}8~Kb?bD>J}8~Kb%;%s%?%j%s$^$9!#[$G;O$^kJ8;zNs$N>19g$O!"0lCV$N;XDj$r9kJ8;zNs(t,b,l,r N&$A2 D^$G)$,B3$-!"<!$K']{'!"J8;zNsK\BN!"$G:G8e$K'}'H7$^9,!"3NJ8;zNs$O LaTeX $,LR-box H7$F@07A7^$9!#'\rule{}{}' $r;H$(P5iKNI$$$0lCV9go;$,2DG=$G7g$&!#

Nc: set term eepic

```
 $O!"%0%i%U$r picture 4D6-$K4^$^$l$? eepic %^%/%m$H$7$F=PNO$7$^$9!#
 $=$N%U%!%$%k$r LaTeX J8=q$K \input $G<h$j9~$s$G$/$@$5$$!#
```

set term eepic color tiny rotate 8
```
 eepic %^%/%m$r \color %^%/%m!"point 0u$O \scripscriptsize $NBg$-$5!"
 K\Ev$K2sE>$5$l$?J8;z$N;HMQ!"$*$h$SA4$F$NJ8;z$r 8pt $K%;%C%H$7$F=PNO
 $7$^$9!#
```

8+=P7N0LCV9go;$K4X$7$F: gnuplot $N%G%U%)%k%H(BgDq$=lJjKJk$,!"$=$&$G$J$$$3Hb$"$k):
```
      set title '\LaTeX\ -- $ \gamma $'
```

?eJ?J}8~Kb?hD>J}8~Kb%;%s%?%j%s%O:
```
      set label '{\LaTeX\ -- $ \gamma $}' at 0,0
```

0LCV$rL@<(E*$K;XDj(>e$K9g$o$;$k):
```
      set xlabel '[t]{\LaTeX\ -- $ \gamma $}'
```

B>$N8+=P$7-L\@9jND9$$8+=P7KBP9k8+@Q$j:
```
      set ylabel '[r]{\LaTeX\ -- $ \gamma $\rule{7mm}{0pt}}'
```

Emf

emf %I%i%$%P$O EMF (Enhanced Metafile Format) %U%!%$%k$r@8@.7^$9!#$3$N7A<0$N%U%!%$%k$OB?$/$N MS-Windows %"%W%j%1!<%7%g%s$GG'<1$G$-$^$9!#

=q<O:
```
     set terminal emf {color | monochrome}
                      {enhanced {noproportional}}
                      {rounded | butt}
                      {linewidth <LW>} {dashlength <DL>}
                      {size XX,YY} {background <rgb_color>}
                      {font "<fontname>{,<fontsize>}"}
                      {fontscale <scale>}
```

monochorome %b!<%I$O@^$l@~$rE@@~$N%Q%?!<%s$r=[4D$5;FBGA=P7^$9!#**linewidth** <**factor**> $OA4$F $N@~I}$r3$3$G;XDj9kCMG\$K7^$9!#**dashlength** <**factor**> $O!"B@$$@~KOJXMxG7g&!#<**fontname**> $O%U%)%s%HL>!"<**fontsize**> $O%]%$%s%HC10LGN%U%)%s%HNBg-5G$9!#

=PNO2hA|$N7A<0E*$J(L>P+jN)%5%$%:$O!"%G%U%)%k%HGOE,Ev$JC10L$G$N1024x768 KJCF$$$^$9!#%*%W%7%g%s **size** $r;H$CFJLJ7A<0E*$J%5%$%:$r;XDj$G$-$^$9!#

3HD%J8;zNs=hM}%b!<%I(enhanced text mode) $O!"%W%m%]!<%7%g%J%kJ8;z4V3V$r6a;w$7h&H7$^$9!#%b%N%9%Z!<%9%U%)%s%H$r;H$&19g!"$"$k$$$O3$N6a;w$r9%$^$J$>19g!"%*%W%7%g%s **noproportional** $r;H$&3HG3$NJd@5$r*%UKG$-$^$9!#

%G%U%)%k%H$N@_Dj$O!"**color font "Arial,12" size 1024,768** $G!"**default** $rA*Br$9kHA4FN%*%W%7%g%s$,$=$N%G%U%)%k%H$NCMKJj^$9!#

Nc:
```
     set terminal emf 'Times Roman Italic, 12'
```

Emxvga

emxvga, **emxvesa**, **vgal** $N3F%I%i%$%PO=l>$l SVGA, vesa SVGA, VGA %0%i%C%U%#%C%/%\!<%I$N PC $r%5%]!<%H$7$^$9!#3liO DOS!"$^$?$O OS/2 >e$G!""emx-gcc" $G%3%s%Q%$%k5l$?$k3H$r0U?^$7$F$$$^$9!#$3liKO5i$K VESA %Q%C%1!<%8$H SVGAKIT $,I,MW$G$9!#$3li$O Johannes Martin (JMARTIN@GOOFY.ZDV.UNI-MAINZ.DE) $,J]<i$7 David J. Liu (liu@phri.nyu.edu) $,3HD%$7$F$$$k%i%$%V%i%j$G$9!#

=q<O:
```
     set terminal emxvga
     set terminal emxvesa {vesa-mode}
     set terminal vgal
```

M#0l$N%*%W%7%g%s$O **emxvesa** KBP9$k vesa $N%b!<%I$G!"%G%U%)%k%HGO$=$l$OG640x480x256 HJCF$$$^$9!#

Epscairo

=PNO7A<0 **epscairo** $O! "cairo, pango %i%$%V%i%j$rMQ$$$F EPS =PNO(Encapsulated PostScript) $r@8@.$7$^$9!#
cairo $O version 1.6 0J9_$,I,MW$G$9!#

>\:Y$O! "**pdfcairo** =PNO7A<0$N%X%k%W$r;2>H7F$/$@$5$$!#

Epslatex

epslatex %I%i%$%P$O LaTeX $G=hM}$9Y-=PNO$r@8@.$7$^$9!#

=q<0:

```
     set terminal epslatex   {default}
     set terminal epslatex   {standalone | input}
                             {oldstyle | newstyle}
                             {level1 | leveldefault | level3}
                             {color | colour | monochrome}
                             {background <rgbcolor> | nobackground}
                             {dashlength | dl <DL>}
                             {linewidth | lw <LW>}
                             {rounded | butt}
                             {clip | noclip}
                             {palfuncparam <samples>{,<maxdeviation>}}
                             {size <XX>{unit},<YY>{unit}}
                             {header <header> | noheader}
                             {blacktext | colortext | colourtext}
                             {{font} "fontname{,fontsize}" {<fontsize>}}
                             {fontscale <scale>}
```

epslatex =PNO7A<0$O! "J8;zNs$r PostScript %3!<%I$K4^$^$;$kBeoj$K LaTeX %U%!%$%k$K0\$9$3$H$r=|$1$P **terminal postscript eps** F1MM$KIA2h$7$^$9!#hC$F! "**postscript terminal** $HB?$/$N%*%W%7%g%s$,6&DL$G$9!#

version 4.0 $+$i 4.2 $N4V$K! "postscript =PNO7A<0HNhjNI$$8_49@-N?aK epslatex =PNO$OJQ99$5$1$^7?!#IA2h%5%$%:$O 5 x 3 %$%s%A$+$i5 x 3.5 %$%s%AXHJQ99$5$1!"J8;zI}$O=>Mh$O%U%)%s%H%5%$%:$N 50% $H8+$J7F$$$^7?$,!"8=:_$O 60% $HI>2A$7$F$$$^$9!#$h$jB?$/$N Postscript $N@<c$d5-9f$b;H$o1^$9!#DJA0$N>uBVK[$\Ey$7$>uBV$K9kKO%*%W%7%g%s **oldstyle** $r;XDj$7F$/$@$5$$!#(<B:]KO4/o:$+$J0c$$,;Dj^$9: 5-9f$N%5%$%:$,o:$+$K0c$$!"L\@99o$_(tics) $O=>Mh$NH>J,KJCF$$$^9,$=$1$O **set tics scale** $GJQ99$G$-$^$9!#$=7FLp(arrow) $K4X$7F$O postscript =PNO7A<0$G;H$($kA4FN5!G=$,MxMQ$G$-$^$9!#)

0J2<Nh$&$J%(%i!<%a%C%;!<%8$,=P$?>19g:

```
     "Can't find PostScript prologue file ... "
```

0J2<;2>H: **postscript prologue (p. 234)**!#$=$7F=$N;X<($K=>CF$/$@$5$$!#

%*%W%7%g%s **color** $O%+%i!<$rM-8z$K$7! "**monochrome** $O3EMWAG$r9u$HGrIA2h$7$^$9!#5i$K! "**monochrome** $O3%?'$N **palette** $b;HMQ$7$^$9$,!"$3$1$O! "L@<(E*$K **colorspec** $G;XDj$5$1$?ItIJ$N?'$rJQ99$7$^$;$s!#

dashlength $^$?$O **dl** $OE@@~$N@~J,$ND9$5$r<DL>(0 hjBg$-$$<B?t) $K@_Dj$7! "**linewidth** $^$?$O **lw** $OA4$F$N@~$NI}$r<LW> $K@_Dj$7$^$9!#

%G%U%)%k%HGO! "@8@.$5$1$k PostScript %3!<%I$O! "FC$K%U%#%k%?%j%s%0$dfilledcurves Nh$&$JG3$\$3$JNN0h$N%Q%?!<%sEIjDV7K*$$F! "PostScript Level 2 H7$F>R2p$5$1$F$$$k8@15!G=$r;H$$^$9!#PostScript Level 2 $N5!G=$O>r7$E*$KJ]8n$5$1$F$$$F! "PostScript Level 1 $N%$%s%?!<%W%j%?%,(%i!<$r=P$5:!"$`7$m%a%C%;!<%8$+PostScript Level 1 Kh$k6a;wG"$k3H$rI=<(($9kh$&KJCF$$$^$9!#**level1** %*%W%7%g%s$O! "$3$1iN5!G=$r6a;w$9$k PostScript Level1 $GBeMQ$7! "PostScript Level 2 %3!<%I$r01@Z;HMQ$7$^$;$s!#$3$1$O8E$$%W%j%s%?$d! "Adobe Illustrator $N8E$$%P!<%8%g%sJIGI,MWKJk$+$b$7$1$^$;$s!#$3$N%U%i%0 **level1** $O=PNO$5$1$?PostScript %U%!%$%k$N"$k019T$r<j$GJT=8$9k3HG! "8e$+$i6/(B)E*$K PostScript Level 1 5!G=$r ON/OFF K9k3HbG-$^$9!#level 2 $N%3!<%I$,4^$^$1$F$$$k>19g! ">e$N5!G=$O8=o1JJ$$$+! "3N%U%i%0$,;%C%H$5$1$?>19g! "$"$k$$$O PostScript %$%s%?%W%j%?%W%m%0%i%`$, level 2 0J>e$N PostScript $r2r<a$9kH$O8@$oJ+C?>19g$K7Y9pJ8$KCV$-4$9oj$^$9!#**level3** %*%W%7%g%s$O! "%S%C%H%^%C%W2hA|$N PNG 2=$N5!G=$rM-8zK7$^$9!#$=$1Kh$j=PNO%5%$%:r+Jj:o8:G-$^$9!#

rounded $O! "@~$NC<$d@\9gIt$r4]$/$7! "%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9!#

clip $O! "PostScript K9YF$N=PNO$r BoundingBox (PostScript $N3OOH) $G%/%j%C%W$9k3Hr;X<(7^$9;%G%U%)%k%H$O **noclip** $G$9!#

palfuncparam $O **set palette functions** $+$i=PNO$N79$-rINh$&$K%3!<%I2=9k$+$r@)8f7^$9!#2r@OE*$J?'$N@.J,4X?t(**set palatte functions** $G@_Dj$5$1$k) $O! "postscript =PNO$G$O79$-$N@~7AJd40$rMQ$$$F%3!<%I2=$5$1$^$9: $^$:?'$N@.J,4X?t$, <samples> 8D$NE@$GI8K\2=$5$1! "$=$7F=1i$NE@$O! "7k2LH7$F@~7AJd40$H$NJP:9$, <maxdeviation> 0JF'b$K<}$^kh$&$K:o=|$5$1$^$9!#$[$HsIA4FNM-8z$J%Q%1%C%H$G! "%G%U%)%k%H$N<samples> =2000 $H<maxdeviation>=0.003 NCMr$=$N$^$^;H$&$N$,NI$$G7g$&!#

PostScript =PNO$N%G%U%)%k%H$NBg$-$5$O10 %$%s%Ax 7 %$%s%A$G$9!#EPS =PNO$N%G%U%)%k%HNBg-5O5 x 3.5 %$%s%A$G$9!#%*%W%7%g%s **size** O3$1$i$r%f!<%6$,;XDj7?bN$KJQ9$7$^$9!#%G%U%)%k%HGOX $HY $N%5%$%:$NC10L$O%$%s%A$H$_$J$5$1$^$9$,! "B>$NC10L(8=:_$Ocm N_) $b;H$&3HOG$-$^$9!#IA2h$N BoundingBox (PostScript %U%!%$%k$N3OOH) $O! "%5%$%:$,JQ9$5$1$?2hA|$rCzEY4^$'h&$K@5$7$/@_Dj$5$1$^$9!#%9%/%j!<%s:BI8$O! "%*%W%7%g%s **size** $G;XDj$5$1$?IA2hOH$NA4BN$, 0.0 $+$i1.0 KJj^$9!#Cm0U: $3$1$O! "0JA0$O! "=PNO7A<0GN@_Djhj$b! "%3%^%s%I **set size** $G@_Dj$7$?J}$,$$$$! "$H8@$C$F$$?3H$NJQ9$r0UL#7^$9!#0JA0$NJ}K!GO BoundingBox $OJQ9$5$1$:$K;D$CF7$^$$! "%9%/%j!<%s:BI8$,<B:]$NIA2h$N8B3&$KBP1~7F$$^$;$sG7$?!#

blacktext $O! "$?H(%+%i!<%b!<%IGbA4FNJ8;zNs$r9u$G=q$-$^$9!#

epslatex %I%i%$%P$OJ8;zNs$NG[CV$N@)8f$KFCJL$JJ}K!$rDs6!$7$^$9: (a) '{' $G;O$^$kJ8;zNs$O! "}' GJD8kI,MW,$"$j$^$9$,! "$=$NJ8;zNsA4BN$, LaTeX KhCF?eJ?J}8~Kb?hD>J}8~Kb%;%s%?%j%s%0$5$1$^$9!#(b) '[' $G;O$^$kJ8;zNs$N>19g$O! "0LCV$N;XDjr9$kJ8;zNs (t,b,l,r,c N&$A2 D^$G) $,B3$-! "<!$K']{'! "J8;zNsK\BN! "$G:G8e$K'}' H7$^9,! "3NJ8;zNs$O LaTeX $, LR-box H7$F@07A7^$9!#\rule{}{} $r;H$(BP5iKNI$$0LCV9go;$,2DG=$G7g$&!#0J2<$b;2>H: %I%i%$%P **pslatex (p. 234)** $K4X$9$k@bL@!#J#?t9T$N8+=P7r:n@.9kKO\shortstack $r;HMQ$7F/$@$5$$!#Nc$($P! "

```
set ylabel '[r]{\shortstack{first line \\ second line}}'
```

set label %3%^%s%I$N%*%W%7%g%s **back** $O;H$($^$9$,! "B>$N=PNO7A<0NbNH$O>/$70cCF$$$^$9!#**front** $N>19g$N8+=P7,B>$NA4$F$NMWAG$N>e$K=PNO$5$1$kNKBP7F! "**back** $r;H$C$?8+=P$7$OB>$NA4FNMWAG$N2<$K=PNO$5$1$^$9!#

3N%I%i%$%P$O2 DNJL$N%U%!%$%k$r:n$j$^$9!#l DO?^$N eps $NItJ,$G! "b&1DO LaTeX $NItJ,$G$9!#LaTeX %U%!%$%k$NL>A0$O! "**set output** %3%^%s%INbN,;Hol! "eps %U%!%$%k$NL>A0O=$N3HD%;R(DL>o **.tex**) $r**.eps** KCV-49$($?bNKJj^$9!#=PNO%U%!%$%k$r;XDj$7J1lP LaTeX =PNO$O9T$Jo1$^$;$s! **multiplot** %b!<%I0J30GO! "<!$NIA2h$r9TJ&A0K=$N=PNO%U%!%$%k$r%m!<%:$9kN$rK:$l$J$$$G$/$@$5$$!#

LaTeX $NJ8=q$G?^$r<h$j9~$'$K'\input{filename}' H7F/$@$5$$!#**eps** %U%!%$%k$O\includegraphics{...} %3%^%s%I$G<h$j9~$'$N$G! "$hCFLaTeX $N%W%j%"%s%V%k$K\usepackage{graphicx} $bF~$lkI,MW,$"$j$^$9!#**textcolour** %*%W%7%g%s$G?'IU$-$NJ8;zNs$r;HMQ7F$$k>19g$O! "LaTeX $N%W%j%"%s%V%k$K\usepackage{color} $bF~$lkI,MW,$"$j$^$9!#

3N eps %U%!%$%k$+$i 'epstopdf' $r;H$C$F pdf %U%!%$%k$r:n$k3HbG$-$^$9!#graphics %Q%C%1!<%8$,E,@Z$K@_Dj$5$1$F$$$k>19g! "$=$N LaTeX $N%U%!%$%k$O! "JQ9$J7K pdflatex KhCF$b=hM}$G$-! "$=$N>19g eps %U%!%$%kNBeojK pdf %U%!%$%k$,<h$j9~$^1l$^$9!#

%U%)%s%H$NA*Br$K4X9k5sF0$O%X%C%@!<%b!<%I$N8$7$^$9!#$I$N>19g$G$b! "M?$(il$?%s%H%5%$%:$O%9%Z!<%9$N7W;;KAcs$H;HMQ$5$1$^$9!#**standalone** %b!<%I$,;HolJ+C?>19g$O! "include $5$1$k>l=j$G$N<B:]$N LaTeX %U%)%s%H%U%)%s%H%5%$%:$,;HolkN$G! "$hCF%U%)%s%H$NJQ9$K$O LaTeX %3%^%s%I$r;HCF$/$@$5$$!#Nc$($P%U%)%s%H%5%$%:$H7FLaTeX J8=qCf$G12pt $r;H$&>19g$O! "%*%W%7%g%s'"" 12' $r;H$$$^$9!#$3$N>19g%U%)%s%HL>$OL5;k$5$1$^$9!#**standalone** $r;H$&>19g$O! "M?$(il$?%)%s%H$H%U%)%s%H5%$%:$,;Hol$^$9!#>\:Y$O2<5-$r;2>H7F$/$@$5$$!#

J8;zNs$,%+%i!<$GI=<($5$1k+$+$I$&$+$O TeX $N Bool CMJQ?t \ifGPcolor $H\ifGPblacktext $G@)8f$7$^$9!#\ifGPcolor $, true $G\ifGPblacktext $, false $N>19g$N$_J8;zNs$O%+%i!<$GI=<($5$1$^$9!#$=1i$O@8@.$5$1$k TeX %U%!%$%k$rJQ9$9$k$+!"$^$?$O TeX %U%!%$%k$GBg0hE*$KM?$(F/$@$5$$!#Nc$($P

```
\newif\ifGPblacktext
\GPblacktexttrue
```

r"J?$N%U%!%$%k%W%j"%s%V%k$K=q$-$^$9!#ItJ,E*$J;JCM$,M?$($ilF$$J$$H$-$N$_F/$-$^$9!#

epslatex =PNO7A<0$r;H$&>19g!"**set output** %3%^%s%I$GTeX %U%!%$%k$NL>A0$r3HD%;RIU$-(DI>o".tex") $GM?$(F/$@$5$$!#eps %U%!%$%k$NL>A0O=$N3HD%;R$r".eps" KCV-49$($?L>A0KJj^$9!#

standalone %b!<%I$r;H$&>19g!"$=$NLaTeX %U%!%$%k$K40A4$JLaTeX $N%X%C%@$,IU2C5l!"eps %U%!%$%k$N %U%!%$%kL>$K$O"-inc" $,DI2C$5l^$9!#**standalone** %b!<%I$O!"dvips, pdfTeX, VTeX $r;H$&>19g$K@5$7$%5 %$:$G=PNO$5lkh&$JTeX %U%!%$%k$r:n$j$^$9!#%G%U%)%k%H$O **input** %b!<%I$G!"3l$O\input %3%^%s%I $r;H$C$F!"JL$N

LaTeX %U%!%$%k$+iFI_~$^$lkh$&$J%U%!%$%k$r@8@.7^$9!#

"" $+ "default" 0J30$N%U%)%s%HL>$,M?$(il$?>19g!"$=lOLaTeX $N%U%)%s%HL>$H2r<a5l$^$9!#$=$l $O!"fontname,fontseries,fontshape' $N!"%3%s%^$G6h@Zil$?3 $DOJ2<$NItJ,$+$iJj$^$9!#%G%U%)%k%H$N%U%) %s%H%7%'%$%W!"%U%)%s%H%7%j!<%:$,;H$$?$>19g$O$=$liO>JN,G-$^$9!#D^$j!"%U%)%s%HL>$KBP9k@5<0$J =q<0$O!"'[fontname][,fontseries][,fontshape]' HJj^$9!#$=$N$$:lNItJ,$bL>A0$K4X7F$OLaTeX $N%U%) %s%HBN7O$N47=,$K=>$$^$9!#fontname $O3 $+$i4J8;z$ND9$5$G!"<!$Nh&$J5,B'$G:nil$F$$^$9:1 $DL\$, %U%)%s%H$N@=B$85$rI=$7!"<!$N2 D,%U%)%s%HL>!"%*%W%7%g%s$GDI2C$5lk1 DOFCJL$J%U%)%s%H$r0UL#$7!" Nc$($P'j' $O5l<0$N?t;z$r;}$D%U%)%s%H!"'x' $O expert %U%)%s%HEy$HJC$F$$^$9!#0J2<$K$O!"B?/$N%U%)%s %H$NL>A0$K$D$$F=q$+$l$F$$^$9!#

http://www.tug.org/fontname/fontname.pdf

Nc$($P'cmr' $O Computer Modern Roman %U%)%s%H!"'ptm' $O Times-Roman, 'phv' $O Helvetica Ey$rI=$7 $^$9!#%U%)%s%H%7%j!<%:$OJ8;z$N@~$NB@$5$r0UL#$7!"BgH>$O'm' $GIaDL("medium")!"'bx' $^$?$O'b' $,B@;z (bold) %U%)%s%H$r0UL#7^$9!#%U%)%s%H%7%'%$%W$C0lHI$K'n' $,N)BN(upright)!"'it' $O%$%?%j%C%/!"'sl' $O<PBN (slanted)!"'sc' $O>.$5$$BgJ8;z(small caps) HJj^$9!#$3liHC0[Jk%U%)%s%H%7%j!<%:$d%U%)%s%H%7%' %$%W$GM?$(il$k%U%)%s%H$bB8:_7^$9!#

Nc:

Times-Roman $GB@;z(%7%'%$%W$O<~$j$NJ8;zNs$HF1$8$b$N) $r;H$&>19g:

```
set terminal epslatex 'ptm,bx'
```

Helvetica $GB@;z$G%$%?%j%C%/$r;H$&>19g:

```
set terminal epslatex 'phv,bx,it'
```

<PBN$N%7%'%$%W$G<~$j$N%U%)%s%H$r;H$B3$1$k>19g:

```
set terminal epslatex ',,sl'
```

>.7?$NBgJ8;z(small caps) $r;H$&>19g:

```
set terminal epslatex ',,sc'
```

3NJ}K!GOJ8;zNs$N%U%)%s%H$N$_$,JQ99$5$l$^$9!#?t<0$N%U%)%s%H$bJQ99$7$?$>19g$O!""gnuplot.cfg" %U%! %$%k$+$^$?$O **header** %*%W%7%g%s$r;H$&I,MW$,$"$j$^$9$,!"$3lK$D$$F$O0J2<$K=q$-$^$9!#

standalone %b!<%IGO!"%U%)%s%H%5%$:$O **set terminal** %3%^%s%I$GM?$(il$?%U%)%s%H%5%$:$,;H$ol^$9!#;XDj$7$?%U%)%s%H%5%$:$,;H$(k?aKOLaTeX $N8!:w%Q%9$K"size<size>.clo" $H$$&%U%!%$%k$,B8:_7J 1lPJj^$;$s!#%G%U%)%k%HGO10pt, 11pt, 12pt $,%5]!<%H$5lF$$^$9!#%Q%C%1!<%8"extsizes" $,%$%s %9%H!<%k5l$F$$$l$P!"8pt, 9pt, 14pt, 17pt, 20pt $bDI2C$5l^$9!#

%*%W%7%g%s **header** $OJ8;zNsOz?t$r<hj^$9!#$=$NJ8;zNsO!"@8@.$5lkLaTeX %U%!%$%k$K=q$-9~$^l^$9!# **standalone** %b!<%I;r;H$&>19g!"$=$NJ8;zNsO%W%j"%s%V%k$N\begin{document} %3%^%s%I$ND>A0$K=q$-9~$^ l^$9!#**input** %b!<%I$G$O!"$=$NJ8;zNs$O\begingroup %3%^%s%I$ND>8e$KCV$+$l!"IA2hXN@_Dj$,$9YF6I=jE*KJkh$&$K7$^$9!#

Nc:

T1 %U%)%s%H%(%s%3!<%G%#%s%0$r;H$$!"J8;zNs!"?t<0%U%)%s%H$rTimes-Roman $H$7!"%5%s%;%j%U%U%)%s%H$r Helvetica $HJQ99$9$k>19g:

```
set terminal epslatex standalone header \
"\\usepackage[T1]{fontenc}\n\\usepackage{mathptmx}\n\\usepackage{helvet}"
```

IA2h$N30$NJ8;zNsKO1F6A$rM?$($J$$$h$&$KIA2hFb$GB@;z(boldface) %U%)%s%H$r;H$&>19g:

```
set terminal epslatex input header "\\bfseries"
```

%U% !%$%k "gnuplot.cfg" $, LaTeX KhCF8+D1ilkH! "**standalone** %b! <%I$r; H$C$F$$$k>19g$O! "$=lO @8@.5l$k LaTeX J8=q$N%W%j%"%s%V%k$K<h$j9~$^$l$^$9! #$=$l$OI2C$N@_Dj$r9T$J$&$N$K; H$ ($^$9! #Nc$ ($P! " J8=q$N%U%)%s%H$r TImes-Roman, Helvetica, Courier $HJQ99$7! "("mathptmx.sty" $G07$olF$$$k) ?t<0%U%) %s%H$rF~$l$k>19g:

```
\usepackage{mathptmx}
\usepackage[scaled=0.92]{helvet}
\usepackage{courier}
```

%U% !%$%k "gnuplot.cfg" $O **header** %3%^%s%I$GM?$($ilk%X%C%@>pJs$NA0$KFI$_9~$^l^$9! #$hCF! ""gnuplot.cfg" $G9T$Jol$k@_Dj$N$$/D+$r **header** $r; H$C$F>e=q$-9k3H,G-$^$9! #

Epson_180dpi

3N%I%i%$%P$O% (%W%=%s%W%j%s%?$N$$/D+H=lKN '; w9kbN$r%5%]! <%H$7$^$9! #

epson_180dpi $H **epson_60dpi** O=l>$l 180dpi (%I%C%H/%$%s%A), 60dpi $N2rA|EY$N Epson LQ 7?24 %T %s%W%j%s%?MQ$N%I%i%$%P$G$9! #

epson_lx800 $O Epson LX-800, Star $N NL-10 $d NX-1000, PROPRINTER JINE,EvJ%W%j%s%?$KN.MQ$G $-$k! "0lHIE*$J9 %T%s%W%j%s%?%I%i%$%P$G$9! #

nec_cp6 $O NEC CP6 $d Epson LQ-800 JI$N%W%j%s%?$G; H$ ($k! "0lHIE*$J24 %T%s%W%j%s%?MQ$N%I%i%$%P $G$9! #

okidata %I%i%$%P$O9 %T%s$N OKIDATA 320/321 I8= '%W%j%s%?$r%5%]! <%H$7$^$9! #

starc %I%i%$%P$O Star %+%i! <%W%j%s%?MQ$G$9! #

tandy_60dpi %I%i%$%P$O9 %T%s 60dpi $N Tandy DMP-130 %7%j! <%:MQ$G$9! #

dpu414 %I%i%$%P$O Seiko DPU-414 46G.%W%j%s%?MQ$G$9! #

nec_cp6 KO%*%W%7%g%s$,$"j^$9:

=q<0:

```
set terminal nec_cp6 {monochrome | colour | draft}
```

%G%U%)%k%HGOGr9u (monochrome) $G$9! #

dpu414 KO%*%W%7%g%s$,$"j^$9:

=q<0:

```
set terminal dpu414 {small | medium | large} {normal | draft}
```

%G%U%)%k%H$O medium (= %U%)%s%H%5%$:) $G normal $G$9! #$*$9$9$aNAH_9go;$O! "**medium normal** $+ **small draft** $G$9! #

Excl

excl %I%i%$%P$O EXCL %l! <%6! <%W%j%s%?! <$d1590 $N%h$&$J Talaris %W%j%s%?$r%5%]! <%H7^$9! #%*%W%7%g%s O"j^$;$s! #

Fig

fig %I%i%$%P$O Fig %0%i%U%#%C%/8@8lGN=PNO$r@8@.$7$^$9! #

=q<0:

```
set terminal fig {monochrome | color}
                 {landscape | portrait}
                 {small | big | size <xsize> <ysize>}
                 {metric | inches}
                 {pointsmax <max_points>}
                 {solid | dashed}
```

```
{font "<fontname>{,<fontsize>}"}
{textnormal | {textspecial texthidden textrigid}}
{{thickness|linewidth} <units>}
{depth <layer>}
{version <number>}
```

monochrome $H **color** $O 2hA|$rGr9uK9k+ **color** K9k+$r7hDj$7$^$9! #**small** $H **big** $O! "%G%U%)%k%H$N **landscape** %b!<%IGO%0%i%U$r5x3 %$%s%AK9k+8x5 %$%s%A$K9k$+! "**portrait** %b!<%I$G$O3x5 %$%s%AK9k+5x8 %$%s%A$K9k$+$r7hDj7^$9! #**size** $OIA2hHO0O$r<xsize>*<ysize> $K@_Dj(JQ99) 7^$9! #3N>l9g$NC10L$O! "**inches** $+**metric** $+$N@_DjKhCF$=$l$>$l%$%s%A$+%;%s%A%a!<%H%k$+$KJj$^$9! #3N@_Dj$O "xfig" GNJT=8KBP9$k%G%U%)%k%H$NC10LH7Fb;Hol$^$9! #

pointsmax <**max_points**> $O@^$l@~$N:GBgE@?t$r@_Dj7^$9! #

solid $O! "<B@~(solid) $N linestyle $,A4It;H$olF7^C?8e$G<+F0E*$K;Hol$kE@@~$N;HMQ$rM^@)$7! "JL$J7A$GI=<(7^$9! #

font $O! "%F%-%9%H%U%)%s%H%U%'! <%9L>$r<fontname> $K! "%U%)%s%H%5%$%:$r<fontsize> %]%$%s%H$K@_Dj$7$^$9! #**textnormal** $O%F%-%9%H%U%i%0$N@_Dj$r;%C%H$7$F postscript %U%)%s%H$rA*Br$7! "**textspecial** $O%F%-%9%H%U%i%0$r LaTeX special $K@_Dj$7! "**texthidden**, **textrigid** O=l>$lL5I=<($N%F%-%9%H! "%9%1!<%j%s%0$5$l$J$$%F%-%9%HMQ$N%U%i%0$r@_Dj7^$9! #

depth $OA4$F$N@~$HJ8;zNsKBP9$k! "=E$JjK4X9k%G%U%)%k%H$N?<$5(depth layer) $r@_Dj$7$^$9! #%G%U%)%k%H$N?<$5$O10 $G! ""xfig" $G%0%i%U$N>e$K2?$+$r>e=q$-9k$?$a$NM>CO$r;D7F$$$^$9! #

version $O@8@.$5lk fig =PNO$N=q<0%P! <%8%g%s$r@_Dj7^$9! #8=:_$O! "%P! <%8%g%s 3.1 $H 3.2 N_$,%5%]!<%H$5lF$$$^$9! #

thickness $O%G%U%)%k%H$N@~$NB@$5$r@_Dj$7! ";XDj5lJ1lP 1 KJj^$9! #B@$5$NJQ99$O! "**plot** %3%^%s%I$N **linetype** NCMK 100 G\$N?t$r2C$(k3HG<B8=G-$^$9! #F1MM$K! "(%G%U%)%k%H$N?<5KBP9k) 3FIA2hMWAG$N?<$5NCMO <linetype> $K 1000 G\$N?t$r2C$(k3HG@)8fG-$^$9! #hCF=$N?<$5$O <layer>+<linetype>/1000 KJ$j! "@~$NB@5O(<linetype>%1000) /100 HJj^9,! "$=$NCM$, 0 $N>l9g $O%G%U%)%k%H$N@~$NB@$5KJj^$9! #**linewidth** $O**thickness** $HF15A$G$9! #

plot %3%^%s%I$N **point** %9%?%$kKh$kIA2h$N:]$N5-9f$r **fig** %I%i%$%P$GDI2C9k3HbG$-$^$9! #5-9f$N;XDj$O(**pointtype** $NCM) % 100 $N50 0J>e$NCM$,;H$o$l! "$=NEIjDV7NG;5O<pointtype> % 5 NCMG@)8f$7! "$=$NNX3T$O9u(<pointtype> % 10 < 5 $N>l9g) $^$?$O8=:_$N?'$G=q$+l^$9! #MxMQ2DG=$J5-9f$O0J2<$NDLjG$9! #

```
50 - 59:  1_
60 - 69:  @5J}7A
70 - 79:  $R$77A
80 - 89:  >e8~$-$N;03Q7A
90 - 99:  2<8~$-$N;03Q7A
```

3liN5-9fNBg-5O%U%)%s%HNBg-5H4X78$7$F$$$^$9! #%G%U%)%k%H$G$O5-9f$N?<5O! "NI$$%(%i!<%P!<$r<B8=$9k?aK! "@~$N?<$5hj1$@$1>.$5$$$CMKJCF$$$^$9! #<pointtype> $, 1000 hjBg$-$$>l9g! "?<5O<layer> +<pointtype>/1000-1 KJj^$9! #<pointtype>%1000 $, 100 hjBg$-$$>l9gEIjD$V$7?'$O(<pointtype>%1000)/100-1 KJj^$9! #

M-8zJEIjDV$7?'(1 $+$i9) $O! "9u! "@D! "NP! "?e?'! "@V! ";g! "2+! "Gr! "0E$$@D(Gr9u%b!<%IGO1 $+$i6 $^$G$O9u$G7 $+$i9 $^$G$OGr) $G$9! #

<linetype> $H<pointtype> $N>\:Y$K$D$$$F$O! "0J2<;2>H: **plot with (p. 100)**! #

big %*%W%7%g%s$O0JA0$N%P!<%8%g%s$N **bfig** %I%i%$%P$NBeMQIJ$G9,! "3N%I%i%$%P$O:#$O%b$&%5%]!<%H5l$F$$$^$;$s! #

Nc:

```
set terminal fig monochrome small pointsmax 1000  # %G%U%)%k%H

plot 'file.dat' with points linetype 102 pointtype 759
```

$O! "2+?'$GEIjDV5l?1_$r@8@.$7! "$=$l$iNX3T$OI}1 $N@D$$@~$G$9! #

```
plot 'file.dat' using 1:2:3 with err linetype 1 pointtype 554
```

$O9u$$@~Kh$k% (%i!<%P!<$H@VGEIjDV5l$?1_$r@8@.7^$9!#$3$N1_$O@~hj$b 1 AX$@$1>e$KJj$^$9 (%G%U%)%k%HGO?<5O9)!#

1_$N>e$K% (%i!<%P!<$r=q$/KOOJ2<Nh$&$K7F$/$@$5$$!#

```
plot 'file.dat' using 1:2:3 with err linetype 1 pointtype 2554
```

Ggi

ggi %I%i%$%P$OX $dsvgalib Nh$&$J0[Jk%?!<%2%C%H>e$GF0:n7^$9!#

=q<0:

```
set terminal ggi [acceleration <integer>] [[mode] {mode}]
```

X GO!"%&%#%s%I%&%^%M!<%8%c$N5!G=$r;HCF%&%#%s%I%&$N%5%$%:$rJQ9$9k3HOG-$^$;s,!"%b!<%I$r mode %*%W%7%g%s$r;HCF!"Nc$ ($P0J2<$Nh&$KJQ9$9k3H,G-$^$9:

```
- V1024x768
- V800x600
- V640x480
- V320x200
```

B>$N%b!<%I$K$D$$$F$O!"ggi (libggi) $N%I%-%e%a%s%H$r;2>H7F$/$@$5$$!#%-!<%o!<%I **mode** $CDI2C$7Fb7J$/$F$b7k9=$G$9!#libggi $N%^%K%e%"%k%Z!<%8$G>R2p5l$F$$$kh&$K!"4D6-JQ?t$G%?!<%2%C%H$rA*Br$9k3Hr$*4+$a7^$9!#X >e$G DGA $r;H$&Ji!"Nc$ ($P0J2<$Nh&K7F/$@$5$$!#

```
bash> export GGI_DISPLAY=DGA
csh>  setenv GGI_DISPLAY DGA
```

acceleration $O!"AjBPE*$J%]%$%s%?F0:n%$%Y%s%H$rH/@8$9$k%?!<%2%C%H(Nc$ ($P DGA) GN$_;HMQ5l!"@5$N@0?t$GAjBPE*$J5wN%KBP9$kG\N((@Q0x;R) $rI=$7$^$9!#%G%U%)%k%H$N acceleration $O7 $G$9!#

Nc:

```
set term ggi acc 10
set term ggi acc 1 mode V1024x768
set term ggi V1024x768
```

Gif

=q<0:

```
set terminal gif
       {{no}enhanced}
       {{no}transparent} {rounded|butt}
       {linewidth <lw>} {dashlength <dl>}
       {tiny | small | medium | large | giant}
       {font "<face> {,<pointsize>}"} {fontscale <scale>}
       {size <x>,<y>} {{no}crop}
       {animate {delay <d>} {loop <n>} {{no}optimize}}
       {background <rgb_color>}
```

PNG, JPEG, GIF 2hA|$O!"30It%i%$%V%ijlibgd $r;H$C$F@8@.$5l^$9!#GIF $NIA2h$O!"ImageMagick %Q%C%1!<%8$N%=%U%H'display' K=$N=PNO$r0J2<Nh$&$K%Q%$%WGEO9$3HGBPOCE*$KI=<(5;$k3H$,G-$^$9:

```
set term gif
set output '| display gif:-'
```

<!$NIA2h%3%^%s%I$+iN=PNO$O!"display %&%#%s%I%&>e$GBPOCE*$K<space> rBGD3H$G8+$k3H$,G-$^$9!#8=:_$NIA2h$r%U%!%$%k$KJ]B8$9kK$O!"display %&%#%s%I%&$G:8%/%j%C%/$7!"**save** $rA*Br$7F/$@$5$$!#

transparent $O!"%I%i%$%P$KGX7J?'$NF)L@2=(transparent) $r9T$&h&;X<(7^$9!#%G%U%)%k%H$O **notransparent** $G$9!#

%*%W%7%g%s **linewidth** $H **dashlength** $O3HBgN($G!"IA2h5lk9YF$N@~$K1F6A$rM?$($^$9!#9JoA!"3liOMM!9$JIA2h%3%^%s%I$GMW5a5lkCMK3];;5l$^$9!#

butt $O@~J,$NIA2h$G!"$=$NC<$NE@GNO_$@$7$r5/$3$5$J$IA2h%a%=%C%I$r;H$&$h$&%I%i%$%P$K;X<($7$^$9!#3N@_Dj$O!"@~I}$,1 hjBg$-$$>19gKN$_M-8z$G$9!#$3$N@_Dj$O!"?eJ?@~!"?bD>@~$NIA2h$N>19g$KM-MQ$G7g$&!#%G%)%k%H$O **rounded** (4]$a) $G$9!#

%U%)%s%H$NA*Br$N>\:Y$O!"$d$dJ#;($G$9!#0J2<$KF1$80UL#$r;}$D4JC1$JNc$r<($7$^$9:

```
set term gif font arial 11
set term gif font "arial,11"
```

hj>\$7$$>pJsKD$$$F$O!"**fonts** $N2<$N3:Ev9k%;%/%7%g%s$r;2>H$7F/$@$5$$!#

%*%W%7%g%s **animate** O"J?$N<j85$K$"$kgd %i%$%V%i%j,%"%K%a!<%7%g%s gif $N:n@.$r%5%]!<%H9k>19gKN$_M-8z$G$9!#:n@.$5lk2hA|$NI=<(4V3V$O!"1/100 ICC10L$G;XDj$G$-$^$9(%G%U%)%k%H$O5)!#$?$@$7<B:]$NI=<(4V3V$O!";HMQ$9$kI=<(%=%U%H$KhC$FJQ2=$7$^$9!#%"%K%a!<%7%g%s$N7+$jUV$72s?t$b;XDjG-$^$9$,!"%G%U%)%k%H$O0 G=lOL58B$N7+$jUV7r0UL#7^$9!#%"%K%a!<%7%g%s2hA|Ns$O!"<!$N **set output** $+ **set term** %3%^%s%I$KhC$F=*N;$7$^$9!#%*%W%7%g%s **optimize** $O!"%"%K%a!<%7%g%s$K4X9k2 DN8z2L$r;}$A$^$9!#

1) %"%K%a!<%7%g%sA4BNrDL8$FC10l$N%+%i!<%^%C%W$,;HMQ$5l^$9!#$3lO%"%K%a!<%7%g%s$NA4$F$N%U%l!<%`$G;HMQ$5$l$kA4$F$N?'$,:G=i$N%U%l!<%`$GDj5A5l$F$$$kI,MW$,$"j^$9!#

2) 2DG=Ji$P!"8D!9$N%U%l!<%`$0l$DA0$N%U%l!<%`$H0c$&ItJ,N_$,%"%K%a!<%7%g%s%U%!%$%k$KJ]B8$5l^$9!#$3lO%U%!%$%k%5%$%:$r>.$5$/$7F/l^9,!"F)L@2=5!G=$r;HMQ$7$F$$$k>19gKOF/$+$J$$$+b7l^$;$s!#

3l$iN>J}$N:GE,2=Oh$j>.$5$$%5%$%:$N=PNO%U%!%$%k$r:nm&H9kbNG9,!"B?J,$=$N8:>/NL$O!"D9$$%"%K%a!<%7%g%s$+$^$?$O%U%l!<%`%5%$%:$,$H$F$b>.$5$J>19g$K$N$_0UL#$,$"$kDxEY$G$7$g$&!#%*%W%7%g%s **nooptimize** $O$3$l$i$N8z2L$r$$:$l$bL58z$K$7$^$9!#3F%U%l!<%`O!"8D!9$N%+%i!<%^%C%W(%W%i%$%Y!<%H%+%i!<%^%C%W)$r;H$!"4]4HJ]B8$5$l$F$$$-$^$9!#0l$DCm0U$7F*$-$^9,!":GE,2=5l$F$$$J$%"%K%a!<%7%g%s%U%!%$%k$O30It%f!<%F%#%j%F%#%r;H$C$F8e=hM}$9k3H,G-$^$9$7!"$=$N8e=hM}$KhC$F gnuplot $N:GE,2=$hjb>.5J%U%!%$%k,:n$ilk$+$b7l$^$;$s!#%G%U%)%k%H$G$O **nooptimize** $G$9!#

=PNOIA2h%5%$%:<x,y>$O%I%/%;%kC10L$GM?$($^$9!#%G%U%)%k%H$O640x480 $G$9!#0J2<$b;2>H **canvas (p. 23)**, **set size (p. 159)**!#IA2h=*N;8e$NC<$NM>Gr$O!"%*%W%7%g%s **crop** $G<h$j=|$/$3H,G-!"$=$N7k2LH7F=$N2hA|%5%$%:$O>.$5$/$Jj^$9!#%G%U%)%k%H$O **nocrop** $G$9!#

Nc

```
set terminal gif medium size 640,480 background '#ffffff'
```

3NNc$O medium %5%$%:$N!"Bg$-$5JQ99ITG=$G2sE>G-$J$$$AH$_9~$_%U%)%s%H$r;HMQ$7!"F)L@2=5l$J$$$GX7J?'H7$FGr(16?J?t$N24bit RGB)$r;HMQ$7$^$9!#

```
set terminal gif font arial 14 enhanced
```

3l$O!"'arial'$H$$$&%'!<%9L>$N%9%1!<%i%V%k%U%)%s%H$r8!:w$7!"%U%)%s%H%5%$%:$r14pt $K@_Dj$7$^$9!#%U%)%s%H$N8!:w$,INh&$K9T$olk$+$K$D$$$F$O0J2<;2>H **fonts (p. 33)**!#3l$O%9%1!<%i%V%k%U%)%s%H$JNG!"3HD%J8;zNs=hM}%b!<%I;HMQG-$^$9!#

```
set term gif animate transparent opt delay 10 size 200,200
load "animate2.dem"
```

3l$O!"%"%K%a!<%7%g%s GIF %U%!%$%k$N:n@.MQ$K gif=PNO7A<0$r3+$-$^$9!#%"%K%a!<%7%g%sNs$N8D!9$N%U%l!<%`$O!"I8=`%G%b%U%!%$%k=8K"$k%9%/%j%W%H%U%!%$%k animate2.dem KhCF@8@.5l$^$9!#

Gpic

gpic %I%i%$%P$OFSF (the Free Software Foundations) $N"groff" %Q%C%1!<%8$NCf$NGPIC 7A<0$N%0%i%U$r@8@.$7$^$9!#%G%U%)%k%HNBg-5O5 x 3 %$%s%A$G$9!#%*%W%7%g%s$O6E@$K4X$9kbNN_$G!"%G%U%)%k%H$G$O(0,0) $G$9!#

=q<0:

```
set terminal gpic {<x> <y>}
```

$3$3$G **x** $H **y** $NC10L$O%$%s%A$G$9!#

C1=c$J%0%i%U$r@07A9kKO0J2<Nh$&$K7^$9!#

```
groff -p -mpic -Tps file.pic > file.ps
```

pic $+$i$N=PNO$O%Q%$%W$Geqn KEO9$3$HbG$-$kNG!"'set label' $H**set {x/y}label** %3%^%s%I$G%0%i%U$KJ#; ($J4X?t$N<0$rF~$lk3Hb2DG=$G$9!#Nc$ ($P!"

```
set ylab '@space 0 int from 0 to x alpha ( t ) roman d t@'
```

H9lP!"0J2<$N%3%^%s%I$KhC$Fy<4$Ke:No$J@QJ,$,8+=P$7IU$1$5$l$^$9!#

```
gpic filename.pic | geqn -d@@ -Tps | groff -m[macro-package] -Tps
    > filename.ps
```

3Nh&K7$F:n$il??^$OJ8=q$Ke:NoKEvFO^kh$&$K?-=L9k3H$,$G$-$^$9!#pic 8@8l$O4JC1$KM}2r$G$-$kNG!"I,MWJiMF0W$K%0%i%U$rD>@\JT=8G-$^$9!#**gnuplot** $G:n$ilk pic %U%!%$%k$NA4FN:BI8$Ox+gnuplotx, y+gnuploty $N7A$GM?$($il^$9!#%G%U%)%k%H$G$Ox, y NCMO0 $G$9!#$$$/D+$N%U%!%$%kKBP7F=$Nx,y $r0 $H@_Dj$7$F$$$k9T$r:o=|$9lP!"0J2<Nh$&$K7FJ#?t$N%0%i%U$r0lDN?^NCfKF~lF7^$&$3HbG-$^$9(%G%U%)%k%HNBg-5O5.0x3.0 %$%s%A):

```
.PS 8.0
x=0;y=3
copy "figa.pic"
x=5;y=3
copy "figb.pic"
x=0;y=0
copy "figc.pic"
x=5;y=0
copy "figd.pic"
.PE
```

3l$O!"2#$K2 $D!"=D$K2 D:DJBs$@4 DN%0%i%U$+$iJk!"8%$%s%A$N9-5N?^$r@8@.7^$9!#

0J2<Nh$&$Kx, y $r;XDj$9k3HG$bF1$8$3$H$,$G$-$^$9!#

```
set terminal gpic x y
```

Grass

grass %I%i%$%P$OGRASS COM}>pJs%7%9%F%'$N%f!<%6$, **gnuplot** $rMxMQ$9k3Hr2DG=K7$^$9!#>\$7$$>pJsKD$$$F$O grassp-list@moon.cecer.army.mil $KO"Mm$r<hCF$/$@$5$$!#%Z!<%8$OGRASS %0%i%U%&%#%s%I%&$N8=:_$N%U%l!<%'$K+l^$9!#%*%W%7%g%s$O$"$j$^$;$s!#

Hp2623a

hp2623a %I%i%$%P$O%R%e!<%l%C%H%Q%C%+!<%I(Hewlett Packard) HP2623A $r%5%]!<%H$7$^$9!#%*%W%7%g%sO"j^$;$s!#

Hp2648

hp2648 %I%i%$%P$O%R%e!<%l%C%H%Q%C%+!<%I(Hewlett Packard) HP2647 $HHP2648 $r%5%]!<%H$7$^$9!#%*%W%7%g%sO"j^$;$s!#

Hp500c

hp500c %I%i%$%P$O%R%e!<%l%C%H%Q%C%+!<%I(Hewlett Packard) <R$NHP DeskJet 500c $r%5%]!<%H$7$^$9!#3lKO2rA|EY$H05=L$K4X9k%*%W%7%g%s,$"$j$^$9!#

=q<0:

```
set terminal hp500c {<res>} {<comp>}
```

res 75, 100, 150, 300 (DPI; dots per inch) **comp** "rle" "tiff" 75 dpi

Hpgl

hpgl HP7475A HPGL **eject** eject

```
set terminal hpgl {<number_of_pens>} {eject}
```

```
set terminal hpgl 8 eject
```

hp7550

```
set terminal hpgl 4
```

hp7580b

pcl5 Hewlett-Packard Designjet 750C Hewlett-Packard Laserjet III, Hewlett-Packard Laserjet IV HPGL-2 **set encoding iso_8859_1** **set encoding cp850** **set encoding (p. 121)**

```
set terminal pcl5 {mode <mode>} {<plotsize>}
    {{color {<number_of_pens>}} | monochrome} {solid | dashed}
    {font <font>} {size <fontsize>} {pspoints | nopspoints}
```

<mode> **landscape** **portrait** <plotsize> **letter** ("8 1/2" X 11") **legal** ("8 1/2" X 14") **noextended** ("36" X 48") (letter **extended** ("36" X 55") (legal **color** <number_of_pens> **monochrome** **solid** **dashed** <font> **stick**, **univers**, **cg_times**, **zapf_dingbats**, **antique_olive**, **arial**, **courier**, **garamond_antigua**, **letter_gothic**, **cg_omega**, **albertus**, **times_new_roman**, **clarendon**, **coronet**, **marigold**, **truetype_symbols**, **wingdings** <fontsize> (point type) **nopspoints** **pspoints** postscript terminal HP Laserjet IV HP Laserjet III Designjet 750C 2,3 (univers, stick) laserjet

landscape, noextended, color (6 pens), solid, univers, 12

```
point, nopspoints
```

pcl5 8-bit **set encoding**

HPGL

Hpljii

hpljii %I%i%$%P$OHP Laserjet Sries II %W%j%s%?$r!"**hpdj** %I%i%$%P$OHP DeskJet 500 %W%j%s%?$r%5%]!<%H7^$9!#$3li$N%I%i%$%PGO!"2rA|EY$NA*Br$,2DG=$G$9!#

=q<0:

```
set terminal hpljii | hpdj {<res>}
```

$3$3$G**res** $O75, 100, 150, 300 $N$$$:1+$N2rA|EY(DPI; dots per inch) $G!"%G%U%)%k%H$O75 $G$9!#9b2rA|EYGN%i%9%?%i%$%:$O$?$/5s$N%a%b%j$rI,MWH7$^$9!#

hp500c %I%i%$%P$O**hpdj** H[$\F1$8G9$,!"**hp500c** $O2C$($F%+%i!<$H05=L$b%5%]!<%H$7$F$$$^$9!#

Hppj

hppj %I%i%$%P$OHP PaintJet $HHP3630 %W%j%s%?$r%5%]!<%H7^$9!#%*%W%7%g%s$O%U%)%s%H$rA*Br$9kbN,$"$kN_$G$9!#

=q<0:

```
set terminal hppj {FNT5X9 | FNT9X17 | FNT13X25}
```

Cf4V%5%$%:%U%)%s%H(FNT9X17) $,%G%U%)%k%H$G$9!#

Imagen

imagen %I%i%$%P$OImagen %l!<%6%W%j%s%?$r%5%]!<%H$7$^$9!#3l$O1 %Z!<%8$KJ#?t$N%0%i%U$rG[CV9k3H$b2DG=$G$9!#

=q<0:

```
set terminal imagen {<fontsize>} {portrait | landscape}
                    {[<horiz>,<vert>]}
```

fontsize $O%G%U%)%k%H$G$O12 %]%$%s%H$G!"%l%$%"%&%H$N%G%U%)%k%H$O**landscape** $G$9!#<**horiz**> $H<**vert**> $O%0%i%U$r2#J}8~$H=DJ}8~$K2?NsCV$/$+$r;XDj$7$^$9!#3liN%G%U%)%k%H$O1 $G$9!#

Nc:

```
set terminal imagen portrait [2,3]
```

3l$O!"1 %Z!<%8$K6 DN%0%i%U$r2#$K2 Ns!"=D$K3 Ns!"=DCV$-(portrait) $GG[CV$7$^$9!#

Jpeg

=q<0:

```
set terminal jpeg
       {{no}enhanced}
       {{no}interlace}
       {linewidth <lw>} {dashlength <dl>} {rounded|butt}
       {tiny | small | medium | large | giant}
       {font "<face> {,<pointsize>}"} {fontscale <scale>}
       {size <x>,<y>} {{no}crop}
       {background <rgb_color>}
```

PNG, JPEG, GIF 2hA|$O!"30It%i%$%V%ijlibgd $r;H$C$F@8@.$5l^$9!#BgDq$N>19g!"C10l$NIA2h$J$iPNG $NJ}$,8~$$$F$$$F!"GIF $O%"%K%a!<%7%g%sMQ$G$9!#$=li$OB;<:$N>/$J$$$2hA|7A<0$G!"B;<:$N$"$kJPEG 7A<0 hj$b>e<A$N2hA|$r@8@.$7$^$9!#3l$O!"FC$K%Y%?EIjDY7$?GX7J$G$N%+%i!<$N<B@~!"D^j^5Kgnuplot $,@8@.$9$kE57?E*$J2hA|KBP7FOCm0U9Y$-$3HG$9!#

%*%W%7%g%s**interlace** $O!"%W%m%0%l%C%7%VJPEG 2hA|$r@8@.$7$^$9!#%G%U%)%k%H$O**nointerlace** $G$9!#

%*%W%7%g%s**linewidth** $H**dashlength** $O3HBgN($G!"IA2h5lk9YF$N@~$K1F6A$rM?$($^$9!#9JoA!"3liOMM!9$JIA2h%3%^%s%I$GMW5a5lkCMK3];;5l$^$9!#

butt $O@~J,$NIA2h$G!"$=$NC<$NE@GNO_$@$7$r5/$3$5$J$$IA2h%a%=%C%I$r;H$&h&%I%i%$$P$K;X<($7$^$9!#3N@_Dj$O!"@~I}$,1hjBg$-$$>19gKN$_M-8z$G$9!#$3$N@_Dj$O!"?eJ?@~!"?bD>@~$NIA2h$N>19g$KM-MQ$G7g$&!#%G%U%)%k%H$O **rounded** (4]$a) $G$9!#

%U%)%s%H$NA*Br$N>\:Y$O!"$d$dJ#;($G$9!#0J2<$KF1$80UL#$r;}$D4JC1$JNc$r<($7$^$9:

```
    set term jpeg font arial 11
    set term jpeg font "arial,11"
```

hj>\$7$$>pJsKD$$$F$O!"**fonts** $N2<$N3:Ev9k%;%/%7%g%s$r;2>H$7F/$@$5$$!#

=PNCIA2h%5%$:<x,y> $O%T%/%;%kC10L$GM?$($^$9!#%G%U%)%k%H$O640x480 $G$9!#0J2<$b;2>H: **canvas (p. 23)**, **set size (p. 159)**!#IA2h=*N;8e$NC<$NM>Gr$O!"%*%W%7%g%s **crop** $G<h$j=|$/$3H,G-!"$=$N7k2LH7F=$N2hA|%5%$:$O>.$5$/$Jj^$9!#%G%U%)%k%H$O **nocrop** $G$9!#

Kyo

kyo $H **prescribe** $N%I%i%$%P$O Kyocera (5~%;%i) %l!<%6!<%W%j%s%?$r%5%]!<%H$7$^$9!#3NN><T$NM#0l$N0c$$$O!"**kyo** $, "Helvetica" $r;H$&NKBP7F **prescribe** $, "Courier" $r;H$&3H$@$1$G$9!#%*%W%7%g%sO"j^$;$s!#

Latex

=q<0:

```
     set terminal {latex | emtex} {default | {courier|roman} {<fontsize>}}
                  {size <XX>{unit}, <YY>{unit}} {rotate | norotate}
```

%G%U%)%k%HGO!"$=$lrKda9~$`U8=q$N%U%)%s%H$N@_Dj$r0z$-7Q$.$^$9$,!"Be$o$j$K Courier (cmtt) $+ Roman (cmr) %U%)%s%H$N$$:$l$+$K$9$k*%W%7%g%s$,;H$($^$9!#$=$N:]$O%U%)%s%H%5%$:$b;XDj$G$-$^$9!#$"$J$?$N DVI %I%i%$%P$,G$0U$N%5%$:$N%U%)%s%H$r:n$j=P$9$3$H$,$G$-$J$$>19g(Nc$($P dvips)!"I8=`E*$J 10, 11, 12 %]%$%s%H%5%$:GJsH$+$7$N$$$G$/$@$5$$!#

METAFONT %f!<%6XN7Y9p: METAFONT $OL/$J%5%$:$O9%$_$^$;$s!#

LaTeX $K4X$9$kA4$F$N%I%i%$%P$OJ8;zNs$NG[CV$N@)8f$KFCJL$JJ}K!$rDs6!7^$9:'{'$G;O$^$kJ8;zNs$O!"'}'$GJD8kI,MW$,$"j^9,!"$=$NJ8;zNsA4BN$,?eJ?J}8~$K$b?bD>J}8~$K$b%;%s%?%j%s%0$5l^$9!#[' $G;O$^$kJ8;zNs$N>19g$O!"0lCV$N;XDjr9$kJ8;zNs(t,b,l,r N&$A2 D^$G) $,B3$-!"<!$K']{'!"J8;zNsK\BN!"$G:G8e$K'}' H7$^9,!"3NJ8;zNs$O LaTeX $, LR-box H7$F@07A7^$9!#'\rule{}{}' $r;H($P5i$KNI$$$0lCV9go;$,2DG=$G7g$&!#

?t$"$kCf$G!"E@(point) $O!"LaTeX $N%3%^%s%I"\Diamond" $H"\Box" $r;H$CFIA+l^$9!#$3li$N%3%^%s%I$O8=:_$O LaTeX2e $N%3%"$K$OB8:_$;$:!"latexsym %Q%C%1!<%8$K4^$^$l$F$$^9,!"3N%Q%C%1!<%84pK\G[I[$N0lit$G$"$j!"hC$FB?$/$N LaTeX $N%7%9%F%'$N0lit$K$JCF$$^$9!#$3$N%Q%C%1!<%8$r;H$&$3HrK:lJ$$$G$/$@$5$$!#B>$NE@<o$O!"amssymb %Q%C%1!<%8$N5-9f$r;HMQ7^$9!#

%G%U%)%k%H$k%H$NIA2h%5%$:$O5 inch !_3 inch G9$,!"%*%W%7%g%s **size** G3lr%f!<%6$N4uK>$9kbNKJQ99G-$^$9!#$^$?!"%G%U%)%k%HGOX $HY $N%5%$:$NC10L$Oinch G9$,!"B>$NC10L$r;H$&3H$b2DG=$G$9(8=:_$Ocm N_)!#

'rotate' $r;XDj$9kH!"J8;zNs$N2sE>!"FC$Ky<4$N%i%Y%k$N2sE>$,2DG=$KJj$^$9(graphics $+ graphicx %Q%C%1!<%8$,I,MW)!#$=$N>19g!"y<4%i%Y%k$r'@Q$_>e$27?'$K9k;EAH$_$CDd;_5l$^$9!#

Nc8+=P7N0lCV9go;$K4X$7$F: gnuplot $N%G%U%)%k%H(BgDo$=lJjKJk$,!"$=$&$G$J$$$3Hb$"$k):

```
      set title '\LaTeX\ -- $ \gamma $'
```

?eJ?J}8~Kb?bD>J}8~Kb%;%s%?%j%s%0:

```
      set label '{\LaTeX\ -- $ \gamma $}' at 0,0
```

0lCV$rL@<(E*$K;XDj(>e$K9g$o$;$k):

```
      set xlabel '[t]{\LaTeX\ -- $ \gamma $}'
```

B>$N8+=P$7-L\@9jND9$$8+=P7KBP9k8+@Q$j:

```
      set ylabel '[r]{\LaTeX\ -- $ \gamma $\rule{7mm}{0pt}}'
```

Linux

linux %I%i%$%P$K$O;XDj$9$k%*%W%7%g%s$O2?b"j^$;$s!#$=$l$O%G%U%)%k%H$N%b!<%IMQK4D6¬JQ?t GSVGAMODE $r;2>H$7$^$9!#b7$=$l$,@_Dj$5lF$$$J1l$P 1024x768x256 $r%G%U%)%k%H$H7F;HMQ7^9,!"$=$l$,$G$¬$J1l$P 640x480x16 (I8=`$N VGA) H7$^$9!#

Lua

3N **lua** =PNO%I%i%$%P$O!"BP>]@h;XDjIA2h%U%!%$%k$r:n@.9k$?$a$N!"30It Lua %9%/%j%W%H$HNAH_9go;$G5!G=$7$^$9!#8=:_%5%]!<%H$7F$$kBP>]$O!"TikZ -> pdflatex N_$G$9!#

Lua $K4X$9$k>pJs$O!"http://www.lua.org $G;2>H$G¬$^$9!#

=q<0:

```
  set terminal lua <target name> | "<file name>"
                       {<script_args> ...}
                       {help}
```

%9%/%j%W%HMQ$K'target name'!"$^$?$O$zMQIdIU$¬$N'file name' $,I,?\$G$9!#%9%/%j%W%H$N'target name' $rM?$($?>19g$O!"3N=PNO7A<0$O!"'gnuplot-<target name>.lua" r^$:%m!<%+%k%G%#%l%/%H%j$GC5$7!"$=lK<:GT9k$H4D6¬JQ?t GNUPLOT_LUA_DIR $rC5$7$^$9!#

$=$NB>N9YF$N0z?t$O!"A*Br7?%9%/%j%W%H$KI>2A$5$;$kh&$KM?$(il$^$9!#Nc$($P!"set term lua tikz help' $O!"%9%/%j%W%H$=$l<+?H$K!"%9%/%j%W%HMQ$N%*%W%7%g%s$HA*Br$K4X$9$kDI2C$N%X%k%W$rI=<($5$;$^$9!#

Lua tikz

TikZ %I%i%$%P$O!"HFMQ Lua =PNO7A<0$N=PNO%b!<%I$N1lDG$9!#

=q<0:

```
   set terminal lua tikz

    {latex | tex | context}
    {color | monochrome}
    {nooriginreset | originreset}
    {nogparrows | gparrows}
    {nogppoints | gppoints}
    {picenvironment | nopicenvironment}
    {noclip | clip}
    {notightboundingbox | tightboundingbox}
    {background "<colorpec>"}
    {size <x>{unit},<y>{unit}}
    {scale <x>,<y>}
    {plotsize <x>{unit},<y>{unit}}
    {charsize <x>{unit},<y>{unit}}
    {font "<fontdesc>"}
    {{fontscale | textscale} <scale>}
    {dashlength | dl <DL>}
    {linewidth | lw <LW>}
    {nofulldoc | nostandalone | fulldoc | standalone}
    {{preamble | header} "<preamble_string>"}
    {tikzplot <ltn>,...}
    {notikzarrows | tikzarrows}
    {rgbimages | cmykimages}
    {noexternalimages|externalimages}
    {bitmap | nobitmap}
    {providevars <var name>,...}
    {createstyle}
    {help}
```

0z?tH7$FD9$5rI,MWH9k%*%W%7%g%sKD$$F$O!"C10L$,;XDj$5$1$F$$J$1$1P=$N%G%U%)%k%H$O'cm' HJj^$9!#$9YF$ND9$5KO!"0J2<$NC10L$r;HMQG-$^$9: 'cm', 'mm', 'in' $^?$O'inch', 'pt', 'pc', 'bp', 'dd','cc' (LuCm in $C%$%s%A(1in=2.54cm), pt $C%]%$%s%H(72.27pt=1in), pc $C%Q%$%+(1pc=12pt), bp $C%S%C%0%]%$%s%H(72bp=1in), dd $ODidot %]%$%s%H(26.6dd=1cm), cc $OCicero (1cc=12dd))!#?tCM$HC10L$N4V$K6uGr$rF~1F$O$$1$^$;$s!#

'monochrome' $O!"@~$N?'IU1rL58z$K$7!"EIjDY7$r3%?'3,D4$K@ZjBX($^$9!#

'originreset' $O!"TikZ 2h$N86E@$r!"IA2h$N:82<3Q$X0\F0$7$^$9!#$3$1$O$$/D+$NIA2h$r01DN tikzpicture 4D6-F'b$K@0Ns$9kN$K;HMQ$G$-$^$9!#$3$1$O!"multiplot!"pm3d IA2hGO==J,KO%F%9%H$5$1$F$$^$;$s!#

'gparrows' $O!"TikZ $,Ds6!$9$kLp(arrow) NBeojK!"gnuplot FbIt$NLp(arrow) $NIA2h4X?t$r;HMQ7^$9!#

'gppoints' $O!"TikZ $,Ds6!$9$kIA2h5-9f$NBeoj$K!"gnuplot FbIt$N5-9fIA2h4X?t$r;HMQ$7$^$9!#

'nopicenvironment' $O!"'tikzpicture' 4D6-$N@k8@$r<jF0$G9T$&$h$&$K9k$?$aK=lr>JN,7^$9!#$3$1$Khj!"IA2h$NA08e$K!"$"$k PGF/TikZ %3!<%I$rD>@\F~$1k3H,G-$^$9!#

'clip' $O!"IA2h$rDj5A$5$1$?%-%c%s%P%9%5%$:$G%/j%C%T%s%0$7$^$9!#%G%U%)%k%H$O'noclip' $G!"$3$1$O%-%c%s%P%9%5%$:$r4^$'G>.$N6k7A3OOHN_$r@_Dj$7$^$9!#%*%W%7%g%s'plotsize' $+'tightboundingbox' $r;HMQ$7$?>19g$O6k7A3OOH$b%/j%C%T%s%0$NH"$b$$$:1b@_Dj7^$;$s!#

'tightboundingbox' $r@_Dj$9kH!"%*%W%7%g%s'clip' $OL5;k$5$1!":G=*E*$J6k7A3OOH$O tikz $,7W;;$9$k<+A3$J3OOHKJj^$9!#

'background' $O!"GX7J?'$r0z?t<colorspec> $G;XDj$7$?CM$K@_Dj7^$9!#<colorspec> $OM-8z$J?'L>$+!"'#'$N8e$K16?J?t$rCV$/3%P%$%H$N RGB %3!<%I(Nc$($P'#ff0000' $O?@V)$N$$:1+GJ$1$1$P$$1$^;$s!#>JN,7?>19g$OGX7J$OF)L@KJj^$9!#

%*%W%7%g%s'size' $O!"%-%c%s%P%9%5%$:$N2$D$ND9$5<x>, <y> rI,MWH7^$9!#%G%U%)%k%H$N%-%c%s%P%9%5%$:$O12.5cm x 8.75cm $G$9!#

%*%W%7%g%s'scale' $O!"%*%W%7%g%s'size' $HF1Ey$N5!G=G9$,!"$3$N<x>, <y> $OD9$5GOJ/!"3HBgN(KJj^$9!#

%*%W%7%g%s'plotsize' $O!"%-%c%s%P%9%5%$:NBeojKIA2hNN0h$N%5%$:$N@_Dj$r9T$^{9},!"$=l,DI>o$N gnuplot $N5sF0$G$9!#$3$N%*%W%7%g%s$r;HMQ9k$H!"$o$:$+$KHsBP>N$J9o$_I}$r:nk+b7l^$;$s!#originreset' Nh$&$K!"3N%*%W%7%g%s$r multiplot $dpm3d IA2h$G;HMQ9k$H!"ITET9g$J7k2L$r>7$/62l,$"$j$^$9!#$=$lKBeo$kJ}K!$H7F!"9YFN margin $r0$H@_Dj7?>e$G%*%W%7%g%s'noclip' $r;HMQ$9$k!"$H$$$&<jb"j^$9!#$3$N>19g$O!"IA2hNN0h$OM?$($?%-%c%s%P%9%5%$:NBg-5KJj$^$9!#

%*%W%7%g%s'charsize' $O!";HMQ$9$k%U%)%s%H$N?eJ?5%$:$H?bD>%5%$:$NJ?6QCMrI,MWH7^$9!#$"J?$N TeX J8=qF'b$G3$1$rINh&$K;HMQ$9$k+$K$D$$F$O!"%5%s%W%k$H7F@8@.$5$1$k%9%?%$%k%U%!%$%k$r8+F/$@$5$$!#

%*%W%7%g%s'fontscale', 'textscale' KO!"L<\Hf%Q%i%a!<%?$,I,MW$G$9!#%0%i%UFb$N9YFNJ8;zNs$,$=$N=L<\Hf$G?-=L$5$1$^$9!#

%*%W%7%g%s 'dashlength' $^$?$O 'dl' $O!"E@@~GK@~ItJ,$ND9$5$r<DL> G\$7$^$9$,!"$3$1$O@5$N<B?t$G$9!#'linewidth' $^$?$O'lw' $O!"$9YF$N@~I}$r<LW> G\$7$^$9!#

%*%W%7%g%s'tex', 'latex', 'context' $O!"TeX =PNO7A<0$NA*Br$G$9!#%G%U%)%k%H$O LaTeX $G$9!#$=$N%9%?%$%k%U%!%$%krFI_9~$'$K$O!"$"J?$?$NJ8=q%U%!%$%k$N@hF,$KBP1~$9$k9T$rF~lF$/$@$5$$:

```
\input gnuplot-lua-tikz.tex    % (plain TeX $N>19g)
\usepackage{gnuplot-lua-tikz}  % (LaTeX $N>19g)
\usemodule[gnuplot-lua-tikz]   % (ConTeXt $N>19g)
```

'createstyle' $O!"$=$N%9%/%j%W%H$+$i TeX/LaTeX/ConTeXt %9%?%$%k%U%!%$%k$rF3$-=P$7!"$=li$rE,@Z$J%U%!%$%k$K=q$-=P$7$^$9!#

'fulldoc' $^$?$O'standalone' $O!"$=N^$^%3%s%Q%$%kG-kh$&$J40A4$J LaTeX J8=q$r@8@.7^$9!#

'preamble' $^$?$O'header' $O!"standalone %b!<%I$N%I%-%e%a%s%H$N%W%j%"%s%V%k$KDI2C LaTeX %3!<%I$r=PNO$9kN$K;HMQ$5l^$9!#

%*%W%7%g%s'tikzplot' GO!"%3^%s%I'\path' NBeojK'\path plot' $r;HMQ$7$^$9!#$=$l$KB3$/@~<o(linetype) $N?tCM$N%j%9%H(<ltn>,...) O=lK1F6A5l$kIA2h@~$rDj5A7^$9!#$9YF$N@~<o$KBP$7!"01$D$NIA2h%9%?%$%k,B8:_7^$9!#1 0J>e$N9YFN@~<oKBP7$F!"%G%U%)%k%H$NIA2h%9%?%$%k$O'smooth' $G$9!#

%*%W%7%g%s'tikzarrows' $r;HMQ$9kH!"%f!<%6$NDj5A$7$?gnuplot $NLp(arrow) $N%9%?%$%k$r TikZ NLpN%9

%?%$%k$K3djEvF$^$9!#3l$O!"Lp$NDj5A$N3Q$NCM$r' 8m$C$F;HMQ$9$k' 3HGJ5l$F$$$^$9!#Nc$($P!"3Q'7' KhkLpN%9%?%$%k$O TikZ %9%?%$%k'gp arrow 7' $K3d$jEvFi$l!"B>$KM?$($il?CMO9YFL5;k5l$^$9!#%G%U%)%k%HGO!"TikZ =PNO7A<0O9YFNLpKBP7F%9%F%k%97A$NLp@h$r;HMQ7^$9!#%G%U%)%k%H$N gnuplot Nh$&$K9kKO!"%*%W%7%g%s 'gparrows' $r;HMQ$7F/$@$5$$!#

'cmykimages' GO!"%$%s%i%$%s2hA|%G!<%?KBP7$F RGB %+%i!<%b%G%k$NBeoj$K CMYK %b%G%k$r;HMQ7^9,!"B>N9YF$N?'(@~$N?'JI)$O!"$=li$,!"Nc($P xcolors %Q%C%1!<%8$G=hM}$5lkNG!"3N%*%W%7%g%s$NlF6A$r<u1^$;$s!#3N%*%W%7%g%s$O!"2hA|$,%$%s%i%$%s2hA|GJ$/30It%G!<%?$G$"$k>l9g$OL5;k$5l^$9!#

%*%W%7%g%s 'externalimages' $r;HMQ$9kH!"9YFN%S%C%H%^%C%W2hA|$r30It$N PNG 2hA|H7$F=q$-=P$7!"$=li$,J8=q$N%3%s%Q%$%k;~$KFI$_9~$^lkh&KJj^$9!#DVI %U%!%$%k!"$*$hS=$N8e$N PostScript %U%!%$%k$r@8@.9kKO!"PNG %U%!%$%k$r EPS %U%!%$%k$K!"UL$KJQ49$9kI,MW,$"$j$^$9!#3l$ONc($P ImageMagick $N **convert** $G9T$($^$9!#F)L@2=%S%C%H%^%C%W2hA|$O>o$K30It PNG 2hA|H7$F@8@.$7$^$9!#

%*%W%7%g%s 'nobitmap' $O!"%M%$%F%#%V$N PS, PDF %$%s%i%$%s2hA|7A<0$NBeoj$K!"2hA|$rEI$jD Y$5l?D9U}7AH7$F%l%s%@%j%s%0$7$^$9!#3N%*%W%7%g%s$O!"2hA|$,%$%s%i%$%s2hA|GJ$/30It%G!<%?$G"$k>l9g$OL5;k5l$^$9!#

%*%W%7%g%s 'providevars' $O!"gnuplot $NFbItJQ?t!"%f!<%6JQ?t$r!"TeX %9%/%j%W%HFbGb%3%^%s%I'\gpgetvar{<var name>}' $r;HMQ$9k3HGMxMQ2DG=K5$;$^$9!#MxMQ$G$-$kJQ?t$N0lMw$r8+kK$O!"'show variables all' %3%^%s%I$r;HMQ$7F/$@$5$$!#

J8;zNs<fontdesc> KO!"Nc($P'\small' Nh$&$JTeX/LaTeX/ConTeXt $GM-8z$J%U%)%s%H%3%^%s%I$rF~$lk3HbG-!"$=$l$O!"'font=<fontdesc>" $N7A<0$N%N!<%I%Q%i%a!<%?H7$ED>@\EO$5l^$9!#$3lO!"$"$k%N!<%I%K3!<%I$rD I2C$9kNKVo6H4V0c$($F!WH($^$9!#Nc($P'\small,yshift=1ex' $bM-8z$G9,!",yshift=1ex' $bM-8z$G!"3AiO8=:_$N%U%)%s%H@_D j$rJQ9$7$^$;$s!#7+$7%j%9%H$NBh2 0z?t$ONc30$G$9!#$=l,<?tCM>{C10L} $N7A<0$N?tCM$N>l9g!"$=lOB>$N=PNO7A<0$G$=$&G"kh$&$K%U%)%s%H%5%$:$H2r<a5l!"Bh1 0z?t$KD I2C$5lF7^$$$^$9!#C10L$,>JN,5l$?CM$O'pt' C10L$H2r<a$5l^$9!#Nc($P!"'\sffamily,12,fill=red' $O!"GX7J?'$,@V$G12pt $NLaTeX sans serif %U%)%s%H$r@_D j$7$^$9!#F1$8$3H,ConTeXt Kb8@$($^$9!#Nc$($P!"'\switchtobodyfont[iwona],10' $O%U%)%s%H$r10pt %5%$:$NIwona $KJQ99$7$^$9!#Plain TeX %f!<%6$O!"%U%)%s%H%5%$:$NUQ99$O:G=i$N0z?t$GL@<(E*$K9T$oJ1lP$$$1$^$;$s!#%F%-%9%H%\%C%/%9$N=L<\$r@5$7$/<hF@9kh&!"2$DL\$bF1$8CM$K@_D j9Y$-$G$9!#

J8;zNs$OC10l!"$"$k$$$OFs=E0zMQIdFb$KF~$lkI,MW,$"$j$^$9!#Fs=E0zMQIdG/$/$il?J8;zNsKO!"2~9T$N'\n' JI$NFCJL$JJ8;z$rF~$lk3H,G-$^$9!#

Mf

mf %I%i%$%P$O METAFONT %W%m%0%i%'XNF~NO%U%!%$%k$r:nj^$9!#$hCF$=$N?^$O TeX $NJ8=q$fGOJ8;z$HF1$8h&$K;H$&3H$,$G$-$^$9!#

J8=qfG?^$r;H$&KO!"**gnuplot** $N=PNO$9$k%U%!%$%k$rF~NO$H7F METAFONT %W%m%0%i%'$r<B9T$9kI,MW,$"$j$^$9!#hC$F!"%f!<%6$O%U%)%s%H,:nil$k%W%m%;%9$H?7$7$/:nC?%U%)%s%H$r%I%-%e%a%s%H$K<h$j9~$'$?$a$N4pACN<1$,I,MWHJj^$9!#$7$+$7!";HMQ9k%5%$%H$G METAFONT %W%m%0%i%'$,E,@Z$K@_D j5l$F$$$l$P!"7P83$N$J$$%f!<%6O&&LdBjJ/A':nOG$-$k$G7$g$&!#

%0%i%UCf$NJ8;z$O METAFONT $NJ8;z%;%C%H$K4p$E$$$F%5%]!<%H5l$^$9!#8=>uGO Computer Modern Roman %U%)%s%H%;%C%H$,F~NO$G9,!"%f!<%6OI,MWJ%U%)%s%H$r2?$G$b<+M3$KA*V3H,G-$^$9!#$?$@7=$NA*$s$@%U%)%s%H$N METAFONT %=!<%9%U%!%$%k;,H$($k>uBV$KJC$F$$$kI,MW$,$"j^$9!#8D!9$NJ8;z$O METAFONT NCfGJL!9$N%T%/%A%c!<JQ?t$KJ]B8$5$l!"U8;z$,I,MWKJC?2?H$-$K3$liNJQ?t$,A':n(2sE>!"?-=LEy) 5l$^$9!#7gE@$O!"METAFONT %W%m%0%i%'$,2r<aKMW9$k;~4V$G$9!#$"$k7W;;5!($D$^$j PC) GO!"%T%/%A%c!<JQ?tr?$/$5$s;HMQ$7$9$.k3HG!";H$($k%a%b%jNNIN8E3&$,LdBj$r5/$3$9$3$Hb"j^$9!#

mf %I%i%$%P$K$O%*%W%7%g%s$O$"$j$^$;$s!#

METAFONT $N;H$J}

- =PNO7A<0 (terminal) $r METAFONT $K%;%C%H:

```
set terminal mf
```

- =PNO%U%!%$%kL>$r@_D j!#Nc$($P:

```
set output "myfigures.mf"
```

- %0%i%U$NIA2h!#3F%0%i%U$QJL!9$NJ8;z$r@8@.$7!"$=$N%G%U%)%k%H$NBg$-$55$O5x3 %$%s%AG9$,!"$3NBg-5O**set size 0.5,0.5** Nh$&$K7FIs$J%5%$%:KG$b<+M3$KJQ99G-$^$9!#

- **gnuplot** $r=*N;

- **gnuplot** $N=PNC%U%!%$%kKBP7$F METAFONT $r<B9T$7!"TFM %U%!%$%k$H GF %U%!%$%k$r:nj^$9!#%0%i%U$O3dHBg-$$(5x3 %$%s%A) NG!"memmax NCM,>/J/Hb 150000 G"$k METAFONT $r;H$&I,MW$,$"kG7g$&!#Unix GO!"$=lODL>o bigmf $H$$$&L>A0$G%$%s%9%H!<%k5l$F$$$kG7g&!#0J2<GO!"virmf %3%^%s%I$, big HG$N METAFONT G"kH2>Dj$7!"<B9TNc$r<(7^$9:

- METAFONT $NN)$A>e$2:

```
virmf '&plain'
```

- =PNCAuCV$NA*Br: METAFONT %W%m%s%W%H('*') >e$G<!$Nh&KBGA$^$9:

```
\mode:=CanonCX;      % $"$J$?$N;HMQ$9$k%W%j%s%?$r;XDj
```

- 3HBgN((magnification) $NA*Br(%*%W%7%g%s):

```
mag:=1;              % $"$J$?$N9%$_$NCM$r;XDj
```

- **gnuplot** $G:n$C$?%U%!%$%k$rF~NO:

```
input myfigures.mf
```

E57E*$JUnix %^%7%s$G$O!"virmf '&plain' $r<B9T$9$k%9%/%j%W%H"mf" $,$"kN$G!"virmf &plain NBeojKmf $r;H$($^$9!#3lKh$jmfput.tfm $Hmfput.$$$gf ($$$ $O=PNCAuCV$N2rA|EY) $N2 DN%U%!%$%k$,:nil$^$9!#>e$N:n6H$O!"9YFr%3%^%s%I%i%$%s>e$G4JC1$K<B9T$9k3HbG-$^$9:virmf '&plain' '\mode:=CanonCX; mag:=1; input myfigures.mf' 3N>l9g!":nil$k%U%!%$%kL>$Omyfigures.tfm $Hmyfigures.300gf $H$$$&L>A0KJj^$9!#

- gftopk $r;H$C$FGF %U%!%$%k$+$iPK %U%!%$%k$r@8@.:

```
gftopk myfigures.300gf myfigures.300pk
```

gftopk $,:n$k%U%!%$%k$NL>A0O"J?$,;HMQ$9$kDVI %I%i%$%P$K0MB8$7$^$9NG!"%5%$%H$NTeX $N4IM}<T$K%U%)%s%HL>$N5,B'$K$D$$$FJ9$$$F$/$@$5$$!#<!$KTFM %U%!%$%k$HPK %U%!%$%krE,EvJ%G%#%l%/%H%j$K%$%s%9%H!<%k9k$+$^$?$O4D6-JQ?t$rE,@Z$JCM$K@_Dj$7$^$9!#DL>o$=$l$O!"TEXFONTS $K%+%l%s%H%G%#%l%/%H%j$r4^ak3H$H!"$"J?$,;HMQ$9$kDVI %I%i%$%P$,;HMQ$7$F$$$k4D6-JQ?t(I8=`E*$JL>A0$O$"$j$^$;$s,...) KBP7$FF1$8$3Hr<dlP:Q$_$^$9!#3l$O TeX $,%U%)%s%H%a%H%j%C%/(TFM) %U%!%$%k$r8+$D$1!"DVI %I%i%$%P, PK %U%!%$%k$r8+$D1ilkh&K9k?aKI,MW$J:n6H$G$9!#

- J8=qK=$N%0%i%U$rF~lk$?$a$K TeX K=$N%U%)%s%HL>$r;X<(:

```
\font\gnufigs=myfigures
```

3F%0%i%U$O!":G=i$N%0%i%U$,J8;z0!"2HVL\$N%0%i%U$,J8;z1 $H$$$&h&$K!"$=l>$l0l$D$NJ8;z$H7FJ]B8$5$l$F$$$^$9!#>e5-$N:n6H$r9T$J$&$H!"%0%i%UO=$NB>$NJ8;z$HF1$8h&$K;H$&3H$,$G$-!"Nc$($P%0%i%U1$H2 $rJ8=q$f$K%;%s%?%j%s%0$7FCV/$?$a$Kplain TeX %U%!%$%kCfG9Y-3H$O:

```
\centerline{\gnufigs\char0}
\centerline{\gnufigs\char1}
```

$@$1$G$9!#bAms LaTeX GO picture 4D6-$r;H$C$F\makebox $H\put %^%/%m$GG$0U$N0LCV$K%0%i%U$rG[CV9k3H$,$G$-$^$9!#

3NdjU}$O!"0lEY%U%)%s%H$r@8@.7F7^$($P!"BgI}$K;~4V$N@aLsKJj^$9:TeX $O%0%i%U$rJ8;zH7$F;H$$!"$=$l$rG[CV$9kK$O4$/>/$J$$;~4V7+;HMQ7^$;$s$7!"%0%i%U$hjbJ8=q$NU}$,=$@5$9k3H,B?$$$G7g$&$+$i!#$=7F3l$O TeX $N%a%b%j$N@aLsKbJj$^$9!#METAFONT %I%i%$%P$r;H$&$b$&:G8e$N0lDNMxE@$O!"@8@.$5lk DVI %U%!%$%k,K\Mh$N%G%P%$%9s0MB8$J7AKJkH$$$&3H$G$9!#$=$l$O eepic $dtpic %I%i%$%PNh$&$J\special %3%^%s%I$rA4$/;HoJ$$$+iG$9!#

Mif

mif %I%i%$%P$OFrame Maker MIF %U%)!<%^%C%H(version 3.00) $N=PNC$r@8@.7^$9!#$3lO15*10 cm $N%5%$%:$NMIF %U%l!<%'$r=PNC$7!"F1$8%Z%s$G=q$+lk%0%i%U$N4pK\MWAG$OF1$8MIF %0%k!<%W$K%0%k!<%W2=5l

$^$9! #**gnuplot** $N 1 %Z!<%8$K$*$1$k%0%i%U$N4pK\MWAG$O0l$D$N MIF %U%l!<% `$KIA2h$5$l!"$$$/$D$+$N MIF %U%l!<% `$O0lDNBg$-$J MIF %U%l!<% `Fb$K=8$ail$^$9! #J8; zNs$G; H$olk MIF %U%)%s%H$O "Times" $G$9! #

MIF 3.00 %I%i%$%P$G$O$$/D+$N%*%W%7%g%s$,@_DjG-$^$9! #

=q<O:

```
set terminal mif {color | colour | monochrome} {polyline | vectors}
                 {help | ?}
```

colour $O@~<o(line type) >= 0 $N@~$r%+%i!<(MIF separation 2–7) $G! "**monochrome** $OA4$F$N@~$r9u(MIF separation 0) $GIA2h$7$^$9! #**polyline** $O6J@~$rO"B36J@~H7$FIA2h$7! "**vectors** $O6J@~$r%Y%/%H%k$N=8$^jH7FIA2h7^$9! #**help** $H? $O%*%s%i%$%s%X%k%W$rI8=`%(%i!<=PNO$KI=<(7^$9! #N><T$O$=$N;HMQK!$NC;$$@bL@$r=PNO$7! "**help** $O99$K%*%W%7%g%s$bI=<($7$^$9! #

Nc:

```
set term mif colour polylines    # %G%U%)%k%H
set term mif                     # %G%U%)%k%H
set term mif vectors
set term mif help
```

Mp

mp %I%i%$%P$OMetapost %W%m%0%i%`$XF~NO$9$k$3$H$r0U?^$7$?=PNO$r@8@.$7! "$=$N%U%!%$%k$KBP$7$FMetapost $r<B9T$9$k$H%0%i%U$r4^$`EPS %U%!%$%k$,:nil$^$9! #%G%U%)%k%HGOOMetapost $OA4$F$NJ8; zNs$r TeX KDL7$^$9! #3l$O%?%$%H%k$d8+=P$7KG0U$N TeX $N5-9f$rK\<AE*$K; H$&3H$,$G$-$k! "$H$$$&MxE@$r; }$D3H$r0UL#$7$^$9! #

=q<O:

```
  set term mp {color | colour | monochrome}
              {solid | dashed}
              {notex | tex | latex}
              {magnification <magsize>}
              {psnfss | psnfss-version7 | nopsnfss}
              {prologues <value>}
              {a4paper}
              {amstex}
              {"<fontname> {,<fontsize>}"}
```

%*%W%7%g%s **color** $O@~$r%+%i!<$G=q$/3H$r0UL#$7($=$l$r%5%]!<%H$9$k%W%j%s%?$d%G%#%9%W%l%$>e$G)! "**monochrome** ($^$?$O2?$b;XDj7J$>19g) $O9u$N@~$,A*Br$5l^$9! #%*%W%7%g%s **solid** $O@~$r<B@~GIA-! "**dashed** ($^$?$OL5;XDj) $O@~$r0[Jk%Q%?!<%s$NE@@~$GIA$-,$1$^$9! #**solid** $,;XDj$5lF$+$D **color** $,;XDj$5lJ$+$C$?>19g! "$[Hs$IA4$F$N@~$,F1$8$bNKJj$^$9$,! "$3lb2?$+$N>19gKOM-MQG7g&$+$iG'ailF$$$^$9! #

%*%W%7%g%s **notex** $O40A4$K TeX $r1*2s$7$^$9NG! "3N%*%W%7%g%s$N85$G$O8+=P$7KO TeX $N%3!<%I$O;H$&$3H,G-$^$;$s! #$3lO! "8E$$%0%i%U%!%$%k! "$"$k$$O TeX GOFC<15-9fH7$F2r<a$5lF7^$& **$**$d**%** Nh$&$J0lHLE*$JJ8; zr?$/5s; H$&%U%!%$%kN?a$KMQ0U$5lF$$$^$9! #

%*%W%7%g%s **tex** $O! "TeX $G=hM}$9$kJ8; zNs$r=PNO9kh&$K@_Dj$7$^$9! #

%*%W%7%g%s **latex** $O! "LaTeX $G=hM}$9$kJ8; zNs$r=PNO9kh&$K@_Dj$7$^$9! #3lKhCF TeX GO;H($J$$$1lI LaTeX GO;H(kb$N! "Nc$($PJ,?t$r\frac $G=q$$?j9k3H,G-$^$9! #3N%*%W%7%g%s$r;H$&>19g$O! "4D6-JQ?t TEX $K LaTeX $N<B9T%W%m%0%i%`L>(DL>o$O latex) $r@_Dj$9$k$+! "$"$k$$O **mpost −tex=<LaTeX** $N<B9T%W%m%0%i%`L>> **...** H9k3HrK:lJ$$$G$/$@$5$$! #$=$&GJ$$$H metapost $O%F%-%9%H$N=hM}$K TeX $r;H$*$&$H7F<:GT7F7^$&$G7g$&! #

TeX K*1k%U%)%s%H%5%$%:$NJUQ99$O?t<0$K$O8z2L$,J/! "$=$Nh&$JUQ99$r9TJ&HF$b4JC1$JJ}K!$O! "Bg0hE*$K3HBgN((magnification factor) $r@_Dj$9$k0J30$K$O"$j$^$;$s! #$=l,%*%W%7%g%s **magnification** $N0UL#$G$9! #$=$N>19g$O3HBgN($r8e$m$K; XDj$9kI,MW,$"$j$^$9! #A4FNJ8; z(%0%i%UGOJ/) O3$NN($G3HBg5l$^$9! #?t<0$r%G%U%)%k%H$N10pt 0J30$NB>$N%5%$%:$G=q$-$?>19gO3$1$r; HMQ7F$/$@$5$$! #$?$@; DG0J3HKA4FN?t<0$,F1$8%5%$%:$KJCF7$^$$$^9,! "7+$7! "0J2<$N MP =PNO$NJT=8$K4X9k@bL@$r; 2>H$7

F/$@$5$$!#**mag** $O**notex** $N85$G$bF/$-$^$9$,!"$=lr9TJ&0UL#$,$J$$/$i$$(0J2<$K=R$Y$k) %U%)%s%H %5%$%:%*%W%7%g%sO&$^$/F/$-$^$9!#

%*%W%7%g%s **psnfss** $O postscript %U%)%s%H$r LaTeX HAH_9go;$F;HMQ$7$^$9!#3N%*%W%7%g%s$O LaTeX $,;H$olk>l9gN_0UL#$r;}$A$^$9NG!"<+F0E*$K**latex** %*%W%7%g%s$,A*Br5l$^$9!#3N%*%W%7%g%s$O0J2<$N LaTeX %Q%C%1!<%8$r;HMQ$7$^$9:inputenc(latin1), fontenc(T1), mathptmx, helvet(scaled=09.2), courier, latexsym, textcomp

%*%W%7%g%s **psnfss-version7** $b postscript %U%)%s%H$r LaTeX HAH_9go;$F;HMQ$7$^$9(**latex** $,<+F0E*$K A*Br5l$^$9) $,!"0J2<$N LaTeX %Q%C%1!<%8$r;HMQ$7$^$9:inputenc(latin1), fontenc(T1), times, mathptmx, helvet, courier

%*%W%7%g%s **nopsnfss** $O%G%U%)%k%H$G!"I8=`E*$J%U%)%s%H(2?$b;XDj5l$F$$$J1l$P cmr10) $,;H$ol^$9!#

%*%W%7%g%s **prologues** $CDI2C$NCM$r0z?t$K;}$A!"metapost %U%!%$%k$K**prologues:=**<$=$NCM> $H$$&9T$r DI2C$7$^$9!#CMH7$F**2** $r;XDj$9kHmetapost $O eps %U%!%$%k$r:n$kh&$K postscript %U%)%s%H$r;HMQ$7!" $=$lKhj=$N7k2L$ONc$($P ghostscript JI$G;2>H$G$-$kh&KJj^$9!#I8=`$G$O metapost $O TeX $N %U%)%s%H$r;HMQ$7$^$9$N$G!"$=$l$r;2>H$9$k$K$O(La)TeX $N%U%!%$%k$K<h$j9~$^`I,MW$,$"$j$^$9!#

%*%W%7%g%s **noprologues** $O%G%U%)%k%H$G!"prologue $G;XDj$7$?$$+Jk9T$bDI2C$5l^$;$s!#

%*%W%7%g%s **a4paper** $O[**a4paper**] $r documentclass $KDI2C$7$^$9!#I8=`GO letter MQ;f(%G%U%)%k%H) $,;H ol$^$9!#3N%*%W%7%g%s$O LaTeX GN$_;H$ol^9N$G!"<+F0E*$K**latex** %*%W%7%g%s$,A*Br$5l^$9!#

%*%W%7%g%s**amstex** $O!"<+F0E*$K**latex** %*%W%7%g%s$rA*Br$7!"0J2<$NLaTeX %Q%C%1!<%8$r;HMQ7^$9: amsfonts, amsmath(intlimits)!#%G%U%)%k%HGO3liO;HMQ5l$^$;$s!#

0zMQId$G0O$^l?L>A0$O%U%)%s%HL>$rI=$7!"**set label** $d**set title** $GL@<(E*$K%U%)%s%H$,M?$(il$J$$>l9g$O 3N%U%)%s%H$,;H$ol^$9!#%U%)%s%H$O TeX $,G'<1$G$-$k(TFM %U%!%$%k$,B8:_9k) bN$r;H$&I,MW$,$" j^$9!#%G%U%)%k%H$G$O**notex** $,A*Br$5lF$$$J1l$P "cmr10" $,!"$=$&$GJ1lP "pcrr8r" (Courier) $,;H$ol^$9!#**notex** $N85$G$b!"Metapost KOTFM %U%!%$%kOI,MWG$9!#**pcrr8r.tfm** $O LaTeX psnfss %Q%C %1!<%8$N Courier %U%)%s%HL>$H7FM?$($ilF$$$^$9!#**notex** $N%G%U%)%k%H$+$i%U%)%s%H$rJQ9$9$k>l9g$O!" >/$J$/$H$b 32-126 $N%3!<%IHC0O$O ASCII %(%s%3!<%G%#%s%0$K0lCW$9kbNrA*sG$/$@$5$$!#**cmtt10** b[$\;H$($^$9$,!"$7$+$7$3$l$O%3!<%I 32 (%9%Z!<%9) $K%9%Z!<%9$GOJ$J8;z$,F~CF$$$^$9!#

%5%$%:$O5.0 $+$i99.99 $N4V$NG$0U$N?t;z$r;XDj$G$-!"$JN,5l$?>l9g$O10.0 $,;H$ol^$9!#$JkY$/**magstep** %5%$%:!"D^$j1.2 $N@0?t$+$^$?$O0.5 >h$N10 G\$r>.?t0J2<27eL$K~$r4]a?CM$r;HMQ$9k3Hr$*4+$a$7 $^$9!#$=$lO=l, TeX $N%7%9%F%`$G:Gbh$/;H$olk%U%)%s%H$N%5%$%:$@$+iG$9!#

A4FN%*%W%7%g%s$O>JN,2DG=$G$9!#%U%)%s%H$r;XDj9k>l9gO=lO(I,MWJi%5%$%:$bD1$F)0lHV:G8e$K;X Dj9kI,MW$,$"j^$9!#%U%)%s%HL>$K$=$N%5%$%:pJs$,4^$^$l$F$$?H7Fb!"%5%$%:$rJQ$($kKO%U%)%s%H %5%$%:$r;XDj9kI,MW$,$"j^$9!#Nc$(ŞP**set term mp "cmtt12"** $O cmtt12 rG%U%)%k%H$N%5%$%:G"$k 10 $K=L$a$F;H$$^$9!#$=lOB?J,K>$^$J$$3HG7g$&$7cmtt10 $r;H$&J}$,NI$$G7g$&!#

0J2<$N ascii J8;z$O!"TeX GOFCJL$K07$ol^$9:

```
$, &, #, %, _;  |, <, >;  ^, ~,  \, {, }
```

$, #, &, _, % $N5 DO!"Nc$($P**$** H9k3HGMF0WK=lr%(%9%1!<%WG-$^$9!#<, >, | $N3 DO!"Nc$($P**$**<**$** Nh$&&$K?t<0%b!<%IFdlP$&^$/$$$-$^$9!#;DjNbN$K4X$7FO>/$7 TeX $N2sHr:v$,I,MW KJj^9,!"E,EvJh$$ TeX $NK\$,$=$l$r;XF3$7F/lkG7g&!#

8+=P7rFs=E0zMQId$G0O$^`>l9g!"TeX %3!<%I$N%P%C%/%9%i%C%7%e$O%(%9%1!<%W$K(2 $D=q$/)I,MW$,$"j^ $9!#C10l0zMQId$r;H$($P$=$lrHr1k3HOG-$^$9$,!":#EY$O2~9TH7$F**n** $r;H$(J/Jj$^$9!#3l$r =q$$F$$k8=:_!"gnuplot 3.7 $O**plot** %3%^%s%I$GM?$($il?%?%$%Hk$O!"JL$J>l=j$GM?$($il?>l9gHO0[$J $k=hM}$r7^$9$7!"0zMQId$N%9%?%$%kK+$+$O i$:TeX %3%^%s%I$N%P%C%/%9%i%C%7%e$OFs=E2=$7$?J}$,NI$5 $=$&$G$9!#

Metapost $N2hA|$O TeX $NU8=qFb$G0lHL$K;H$olF$$$^$9!#Metapost $O%U%)%s%H$r TeX $,9T$J$&$N$HA4$/F1 $8J}K!$G07$$!"$=$l$OB>$NBgDq$NU8=q@07A%W%m%0%i%`$H$O0[$JCF$$$^$9!#%0%i%U$, LaTeX $NU8=q$Kgraphics %Q%C%1!<%8$G<h$j9~$^$l!"$"$k$$$O epsf.tex $r;H$C$F plainTeX $K<h$j9~$^$l!"$=$7$F dvips ($^$?$OB>$N dvi $+$i ps XNUQ49%=%U%H) $G PostScript $KUQ49$5lk>l9g!"$=$N%0%i%UFb$NU8;z$OBgDq$O@5$7$/07$olF$$$k G7g&!#7+$7!"Metapost =PNG$r$=$N$^$^ PostScript %$%s%?%W%j%?$KAwCF$b!"%0%i%UFb$NU8;z$O=PNG$5 lJ$$$G7g$&!#

Metapost $N;H$$J}

- $^$:terminal %I%i%$%P$r Metapost $K@_Dj!"Nc$($P:

```
set terminal mp mono "cmtt12" 12
```

- =PNC%U%!%$%k$rA*Br!"Nc$($P:

```
set output "figure.mp"
```

- %0%i%U$r:n@.!#3F plot ($^$?$O multiplot $N3F%0%k!<%W) O=1>lJLJMetapost beginfig...endfig %0%k!<%W$KJ,$1il$^$9!#$=$N%G%U%)%k%H$N%5%$%:$O5x3 %$%s%AG9$,!"$=1O **set size 0.5,0.5** H+!"$=$&7?$$H;W$&E,Ev$J3d9gr=Nh$&$K;XDj9k3H$GJQ99$G$-$^$9!#

- gnuplot $r=*N;!#

- gnuplot $N=PNC%U%!%$%kKBP7$FMetapost $r<B9T$7$FEPS %U%!%$%k$r:n@.:

```
mpost figure.mp  OR  mp figure.mp
```

Metapost %W%m%0%i%'L>$O%7%9%F%'$K0MB8$7!"Unix GCDI>o **mpost** $G!"B>$NB?$/$N%7%9%F%'GO **mp** $G$9!#Metapost $O3F%0%i%U$KBP7F1 D:DNEPS %U%!%$%k$r@8@.7^$9!#

- $=$N%0%i%U$rJ8=q$K<h$j9~$'KOLaTeX graphics %Q%C%1!<%8$d!"plainTeX GOepsf.tex $r;HMQ

```
\usepackage{graphics} % LaTeX
\input epsf.tex       % plainTeX
```

TeX DVI =PNC$rPS $KJQ49$9%kNK!"dvips 0J30$NDVI %I%i%$%P$r;H$&>l9g$O!"LaTeX %U%!%$%k$K0J2<$N9T$rF~$lkI,MW,$"$k$+$bCNl^$;$s:

```
\DeclareGraphicsRule{*}{eps}{*}{}
```

:nil$?3F%0%i%U$OJ,N%7?%U%!%$%k$KJC$F$$$F!":G=i$N%0%i%U$N%U%!%$%k$O!"Nc$($P figure.0, 2 $DL\$CNc$($P figure.1 Nh$&$JL>A0KJj^$9!#$hCF!"3 $DL\$N%0%i%U$rJ8=q$K<h$j9~$'$?$aK"J?$,$7J1lP$$$1$J$$3HO0J2<N_$G$9:

```
\includegraphics{figure.2} % LaTeX
\epsfbox{figure.2}         % plainTeX
```

mp %I%i%$%P$Npostscript %I%i%$%P$KBeokMxE@$O!"$b7"kH9l$P!"$=1OJT=82DG=$J=PNC$G$"$k$H$$$&3HG7g&!#3N=PNC$r2DG=$J8B$je:No$K9k$?$a$N!"$+Jj$NEXNO$,J'ol$^$7$?!#Metapost 8@81$K4X9k$=$&$$C$?CN<1$N$*$+2G!"%G%U%)%k%H$N@<o$d?'$OG[Ns **lt**[] $d**col**[] $rJT=8$9k3HGJQ99G-kh$&$KJj$^$7$?!#KB@~/E@@~!"%+%i!</Gr9u$H$$C$?A*Br$b!"?25 6CMH7$FDj5A$5lF$$k **dashedlines** $d**colorlines** $rJQ99$9k3HG9TJ($^$9!#%G%U%)%k%H$N **tex** %*%W%7%g%s$,M-8z$J>l9g!"%V%m%C%/ **vebatimtex...etex** $rJT=8$9k3HG!"%i%Y%kJ8;z%U%)%s%HKBP9$kBg0hE*$JUQ99$,9T$J$($^$9!#FC$K!"b7K>$'$J$i LaTeX $N%W%j%"%s%V$k$rDI2C$9k3HbG-!"$=$N>l9g LaTeX $N;}$D5%$%:JQ99%3%^%s%I$r;H$($kNG:GBg$N=@Fp@-$rH/4xG-kG7g&!#$?$@$7!"Metapost $K plainTeX GJ$/LaTeX $r<B9T$5;kh$&!"E,@Z$JMP @_DjJQ?t$r@_Dj$9k3HrK:lJ$$G$/$@5!#

Next

next %I%i%$%P$K$O@_Dj$N$?$a$N$$/D+$N%*%W%7%g%s$,$"$j$^$9!#

=q<0:

```
     set terminal next {<mode>} {<type> } {<color>} {<dashed>}
               {"<fontname>"} {<fontsize>} title {"<newtitle>"}
```

<mode> $O **default** N_;XDjG-!"$=$N>l9gA4FN%*%W%7%g%s$,%G%U%)%k%HKJj^$9!#<type> $O **new** $+ **old** $G!"**old** $O8E$$C10l%&%#%s%I%&$rMW5a$7$^$9!#<color> $O **color** (%+%i!<) $+ **monochrome** (Gr9u)!""<dashed> $O **solid** (<B@~$N$_) $+ **dashed** (E@@~$,M-8z)!""<fontname>" $OM-8z$JPostScript %U%)%s%H$NL>A0$r!"<fontsize> $OPostScript %]%$%s%HC10LGN%U%)%s%H$N%5%$%:$r!"<title> $OGnuTerm %&%#%s%I%&$N%?%$%H%k$r=l>$l@_Dj$7$^$9!#%G%U%)%k%H$O **new**, **monochrome**, **dashed**, "Helvetica", 14pt $G$9!#

Nc:

```
set term next default
set term next 22
set term next color "Times-Roman" 14
set term next color "Helvetica" 12 title "MyPlot"
set term next old
```

E@NBg-5O **set linestyle** $GJQ99$G$-$^$9!#

Openstep (next)

openstep (next) %I%i%$%P$K$O@_Dj$N$?$a$N$$$/D+$N%*%W%7%g%s$,$"$j$^$9!#

=q<O:

```
set terminal openstep {<mode>} {<type> } {<color>} {<dashed>}
           {"<fontname>"} {<fontsize>} title {"<newtitle>"}
```

<mode> $O **default** N_;XDjG-!"$=$N>l9gA4FN%*%W%7%g%s$,%G%U%)%k%HKJj^$9!#<type> $O **new** $+ **old** $G!"**old** $O8E$$C10l%&%#%s%I%&$rMW5a$7$^$9!#<color> $O **color** (%+%i!<) $+ **monochrome** (Gr9u)!" <dashed> $O **solid** (<B@~$N$_) $+ **dashed** (E@@~$,M-8z)!""<fontname>" $OM-8z$J PostScript %U%)%s%H$NL> A0$r!"<fontsize> $O PostScript %]%$%s%HC10LGN%U%)%s%H$N%5%$:$r!"<title> $O GnuTerm %&%#%s%I%&$N %?%$%H%k$r$=$l$>$l@_Dj7^$9!#%G%U%)%k%H$O **new**, **monochrome**, **dashed**, "Helvetica", 14pt $G$9!#

Nc:

```
set term openstep default
set term openstep 22
set term openstep color "Times-Roman" 14
set term openstep color "Helvetica" 12 title "MyPlot"
set term openstep old
```

E@NBg-5O **set linestyle** $GJQ99$G$-$^$9!#

Pbm

=q<O:

```
set terminal pbm {<fontsize>} {<mode>} {size <x>,<y>}
```

<fontsize> $O **small** $+ **medium** $+ **large** $G!"<mode> $O **monochrome** $+ **gray** $+ **color** $G$9!#%G%U%) %k%H$NIA2h%5$%:$O640 %T%/%;%k$NI}$G480 %T%/%;%k$N9b5G$9!#=PNO%5$%:$O!"x $Hy $NN>J}$r8 %T%/%; %kG\$7$?$bNK:G$b6a$/Jkh&$K6uGr$,DI2C5l$^$9!#I,MWG"lP!"3N6uGrItJ,$O8e$G<h$j=|$/3H$, G-$^$9!#

pbm %I%i%$%P$N=PNO$O<mode> Khj^$9: **monochrome** $O portable bitmap (PBM; 1 %T%/%;%k1 %S%C %H) $r!"**gray** $O portable graymap (PGM; 1 %T%/%;%k3 bit) $r!"**color** $O portable pixmap (PPM; 1 %T%/%; %k4 %S%C%H) $r=PNO$7$^$9!#

3N%I%i%$%P$N=PNO$O!"NETPBM KhCFDs6!5l$kMM!9$J2hA|JQ49!"2hA|=hM}%D!<%k$G;H$&3H$,$G$-$^ $9!# Jef Poskanzer $N PBMPLUS %Q%C%1!<%8$K4pE/ NETPBM $O!">e5-$N PBM 7A<0$+$i GIF, TIFF, MacPaint, Macintosh PICT, PCX, X11 %S%C%H%^%C%W!"$=$NB>B?$/$N7A<0$KJQ49$9$k%W%m%0%i%'$rDs6!7^$9!# 40A4$J>pJs$O http://netpbm.sourceforge.net/ K"j^$9!#

Nc:

```
set terminal pbm small monochrome                # %G%U%)%k%H
set terminal pbm color medium size 800,600
set output '| pnmrotate 45 | pnmtopng > tilted.png'  # NETPBM $rMxMQ
```

Pdf

[Hs?d>)] 3N=PNO7A<0$O!"%U%j!<$GOJ$$%i%$%V%i%j PDFlib (GmbH Munchen) $r;HMQ$7$F PDF (Portable Document Format) %U%!%$%k%r:n@.$7$^$9!#b7$"$J$?,>&MQHG$N PDFlib %i%$%;%s%9%r;}$C$F$$$F!"$=$l$,

Ds6 !9kFCJL$J5 !G=$rI,MWH9kNJiJLG9$,! "$=$&$GJ1lPBeoj$K cairopdf =PNO7A<0$r;H$&J}$,$$$$ G7g&! #gnuplot GO wxt $+qt $NBPOC7?=PNO7A<0$+ib PDF %U%!%$%k$rEG$-=P$5$;$k3H$O2DG=$G$9! #

=q<0:

```
set terminal pdf {monochrome|color|colour}
                 {{no}enhanced}
                 {fname "<font>"} {fsize <fontsize>}
                 {font "<fontname>{,<fontsize>}"} {fontscale <scale>}
                 {linewidth <lw>} {rounded|butt}
                 {dl <dashlength>}
                 {size <XX>{unit},<YY>{unit}}
```

%G%U%)%k%HGO! "8D! 9$N@~<o$KBP7F0 [Jk?'$rMQ$$$^$9! #**monochrome** $rA*Br$9kHA4FN@~<o$r9u$GIA $-$^9,! "%b%N%/%m%b! <%IGbEIjDV7NN0h$d%i%$%s%9%?%$%k$G$OL@< (E*$K?'$r;HMQ$9k3H,G-$^$9! #

<font> $O%G%U%)%k%H$G;Hol$k%U%)%s%HL> (%G%U%)%k%H$G$O Helvetica) $G<fontsize> $O%]%$%s%HC10LGN %U%)%s%H%5%$%: (%G%U%)%k%H$G$O12) $G$9! #INh&$J%U%)%s%H$,;H$ ($F! "?7$7$%U%)%s%H$r%$%s%9%H! <%k$9 kK$O! "$H$$$C$?$3HK4X7F$O! "%m! <%+%k$K%$%s%9%H! <%k$5lF$$$k pdflib $N%I%~%e%a%s%H$r;2>H7F$/$@ $5$$! #

%*%W%7%g%s **enhanced** $O! "3HD%J8;zNs=hM}5 !G=(2<IU$-J8;z! ">eIU$-J8;z! "$*$h$SJ#?t$N%U%)%s%H$NMxMQ) $r M-8z$K7^$9! #0J2<;2>H: **enhanced (p. 25)**! #

IA2hK*1kA4FN@~$NI}$O **linewidth** $G;XDj$9$k0x;R<n> $GA}2C$9k3H,G-$^$9! #F1MM$K! "**dashlength** $O%G%U%)%k%H$NE@@~$N6uGrItJ,$KBP9k@Q0x;R$G$9! #

rounded $O! "@~$NC<$d@\9gIt$r4]$/$7! "%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9! #

PDF =PNO$N%G%U%)%k%H$N%5%$%:$O! "5inch x 3inch $G$9! #%*%W%7%g%s **size** $O! "$3lr%f! <%6$N;XDj$9kbNX JQ9$7$^$9! #%G%U%)%k%H$N X, Y %5%$%:$NC10L$O%$%s%A$G$9,! "B>$NC10L$b;HMQ2DG=$G$9 (8=:_$O cm N_)! #

Pdfcairo

=PNO7A<0 **pdfcairo** $O! "PDF =PNO$r@8@.7^$9! #<B:]$NIA2h$O! "2D %0%i%U%#C%/%i%$%V%i%jG"$k cairo $H! "J8;zNs$NG[CV$H%l%s%@%j%s%0MQ$N%i%$%V%i%j pango $r7PM3$7$F9T$ol^$9! #

=q<0:

```
set term pdfcairo
             {{no}enhanced} {mono|color}
             {font <font>} {fontscale <scale>}
             {linewidth <lw>} {rounded|butt|square} {dashlength <dl>}
             {background <rgbcolor>
             {size <XX>{unit},<YY>{unit}}
```

3N=PNO7A<0$O! "3HD%J8;zNs=hM}%b! <%I (enhanced text mode) $r%5%]! <%H$7$F$$$F! "%U%)%s%H$d=q<0%3%^%s %I (>eIU! "2<IUJI) $r%i%Y%k$dB>$NJ8;zNs$KKd$a9~$'3H$,$G$-$^$9! #3HD%J8;zNs=hM}%b! <%I$N=q<0$OB>$N gnuplot $N=PNO7A<0$H6&DL$G$9! #>\:Y$O! "0J2<;2>H: **enhanced (p. 25)**! #

IA2hK*1kA4FN@~$NI}$O **linewidth** $G;XDj$9$k0x;R<lw> $GJQ9$G$-$^$9! #%G%U%)%k%H$N@~I}$O0.5 %] %$%s%H$G$9! #(1 "PostScript" %]%$%s%H= 1/72 %$%s%A= 0.353 mm)

rounded $O! "@~$NC<$d@\9gIt$r4]$/$7$^$9! #%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9! #

PDF =PNO$N%G%U%)%k%H$N%5%$%:$O! "5inch x 3inch $G$9! #%*%W%7%g%s **size** $O! "$3lr%f! <%6$N;XDj$9kbNX JQ9$7$^$9! #%G%U%)%k%H$N X, Y %5%$%:$NC10L$O%$%s%A$G$9,! "B>$NC10L$b;HMQ2DG=$G$9 (8=:_$O cm N_)! # **size** %*%W%7%g%s$G;XDj$5l?3HKh$kIA2h$NC<$+$iC<$^$G$NNN0h$O! ">o$K%/%j! <%s:BI8$N0.0 $+$i1.0 $K BP1~$7$^$9! #

<font> $O! ""FontFace,FontSize" $N=q<0! "$D$^$j%U%)%s%HL>$H%5%$%:$r%+%s%^$G6h@ZC?0lDNJ8;zNs$H$7 $FI=5-$7$^$9! #FontFace $O! "'Arial' Nh$&$JDL>o$N%U%)%s%HL>$G$9! #%U%)%s%HL>$rM?$ (J>19g! "pdfcairo =PNO7A<0GO'Sans' $,;HMQ$5l^$9! #FontSize $O%]%$%s%HC10LGN%U%)%s%H%5%$%:$G$9! #;XDj$7J>19g$O! " pdfcairo =PNO7A<0$G$O12 %]%$%s%H%5%$%:$NI8='%U%)%s%H$,;HMQ$5l^$9! #$7$+$7! "3N=PNO7A<0$N%Q%i%a!<%?fontscale $N%G%U%)%k%H$O0.5 JN$G! "8+$+1N%U%)%s%H%5%$%:$O! "PDF =PNO$r%U%k%5%$%:$G8+$?>19ghj $b>.$5$/$JkG7g&! #

```
Nc :
    set term pdfcairo font "Arial,12"
    set term pdfcairo font "Arial" # %U%)%s%HL>$N$_JQ99
    set term pdfcairo font ",12" # %U%)%s%H%5%$%:$N$_JQ99
    set term pdfcairo font "" # %U%)%s%HL>$H%5%$%:$r%j%;%C%H
```

%U%)%s%H$O! "DI>o$N%U%)%s%H=hM}5!9=Kh$j<hF@$5$1$^$9! #Windows GO! "%U%)%s%H$O%3%s%H%m! <%k%Q%M%k$N "%U%)%s%H" $N9 'L\$G9=@.$5$18+D1i1kbNG! "UNIX GO! "%U%)%s%H$O "fontconfig" $G=hM}$5$1$^$9! #

J8; zNs$N%1%$%"%&%H$K; HMQ$5$1$k%i%$%V%i%j Pango $O! "utf-8 $K4p$E$$$F$$$^9N$G! "pdfcairo =PNO7A<0$G $O! "J8; z%3! <%I$r utf-8 $KJQ49$9kI,MW,$"$j$^$9! #%G%U%)%k%H$NF~NOJ8; z%3! <%I$O! "$"$J$?$,; HMQ7F$$$k 'locale' $K4p$E$-$^$9! #B>$NJ8; z%3! <%IK7$?$$>19g$O! "$"J?$,$I$NJ8; z%3! <%I$r; HCF$$$kN+$r3N<B$K gnuplot $,$o$+$kh&K7F/$@$5$$! #>\:YKD$$$F$O! "0J2<; 2>H: **encoding (p. 121)**!#

pango $O! "unicode %^%C%T%s%0$GJ%U%)%s%HKBP7FOM=4|$;$L7k2L$rM?$(k+b7l^$;$s! #Nc$ ($P Symbol %U%)%s%H$KBP7F$O! "pdfcairo =PNO7A<0$O! "U8; z%3! <%I$r unicode $KJQ49$9k?aKhttp://www.unicode.org/$GDs6!$5$1$k%^%C%T%s%0$rMxMQ$7$^$9! #J*! "'the Symbol font" $O! "Acrobat Reader $H0l=o$K "SY____.PFB" H7$FG[I[$5$1$F$$$k Adobe Symbol %U%)%s%HG"kH2r<a$5$1k3HKCm0U7F$/$@$5$$! #3NBeoj$K! " OpenOffice.org $H0l=o$K "opens__.ttf" H7$FG[I[$5$1$k OpenSymbol %U%)%s%H$,F1$8J8; z$rDs6!$7$F$$^$9! #Microsoft $b Symbol %U%)%s%H("symbol.ttf") $rG[I[$7$F$$$^9,! "$3$1$O0[$J$kJ8; z%;%C%H$KJC$F$$$F! "$$$/D+$O7g$1$F$$$^$9$7! "$$$/D+$O?t<05-9f$KJQoCF7$^$C$F$$$^$9! #$"J?$N%G%U%)%k%H$N@_DjGJsi$+$NLdBj$,5/$-$?>19g (Nc$ ($P%G%b%9%/%j%W%H enhancedtext.dem $,$Acs$HI=< ($5$1$J$$$H$$C$?>19g) $O! "Adobe $+ OpenOffice $N Symbol %U%)%s%H$r%$%s%9%H! <%k$7$F! "Microsoft $N Symbol %U%)%s%H$r:o=|7J$$$H$$1$J$$+b7$1$^$;$s! #'windings" Nh$&$JB>$NHsI8=`$N%U%)%s%HGbF0:n9k3H$,Js9p$5$1$F$$$^$9! #

IA2h$N%1%s%@%j%s%0$O! ":#NH3mJQ99G-$^$;$s! #=PNO$rhjNI$/$9k?aK3N%1%s%@%j%s%0$O! "%"%s%A%(%$%j%"%9! "%*! <%P! <%5%s%W%j%s%0$N2 DN5!9=$r; }CF$$$^$9! #%"%s%A%(%$%j%"%9$O! "?eJ?$d?bD>GJ$@~$r3ji+$KI=<($7$^$9! #%*! <%P! <%5%s%W%j%s%0$O! "%"%s%A%(%$%j%"%9HAH$G%T%/%;%k$hjb>.$5$$%5%$%:$G$N@:EY$rDs6!$7! "gnuplot $,Hs@0?t:BI8$ND>@~$r=q$1kh$&$KJj$^$9! #$3$1$O! "BP3QJ}8~$ND>@~(Nc$ ($P 'plot x') $,:81&$KMI1kNrHr1^$9! #

Pm

pm %I%i%$$P$O! "%0%i%U$,IA2h$5$1$k OS/2 %W%1%<%s%F! <%7%g%s%^%M! <%8%c%&%#%s%I%&$rDs6!$7$^$9! #$=$N%&%#%s%I%&$O:G=i$N%0%i%U$,IA2h$5$1$?H-$K3+$+1^$9! #$3$N%&%#%s%I%&$O0u:~! "%/%j%C%W%\! <%IXN%3%T! <! "$$$/D+$N@~<o$d?'$ND4@0$N$?$a$N5!G=! "$=7F$=$1<+?H$N%*%s%i%$%s%X%k%W$r; }$C$F$$$^$9! #**multiplot** %*%W%7%g%s$b%5%]! <%H$5$1$F$$$^$9! #

=q<0:

```
    set terminal pm {server {n}} {persist} {widelines} {enhanced} {"title"}
```

persist $r; XDj$9kH! "3F%0%i%UO=1>$1<+?H$N%&%#%s%I%&$r; }$A! "$=$N9YFN%&%#%s%I%&$O **gnuplot** $,=*N;$7$?8e$b3+$$$?$^^{K}J$j$^$9! #**server** $r; XDj$9kH! "A4FN%0%i%U$CF1$8%&%#%s%I%&F'b$K8=$o$1! "$=1O **gnuplot** =*N;8e$b3+$$$?$^^{K}J$j$^$9! #3N%*%W%7%g%s$O! "$5iKDI2C$N?t0z?t$r<h$j! "$=$N?t; z$O%5!<%P%W%m%;%9$N%$%s%9%?%s%9KJj^$9! #$hCFF1; ~$KJ#?t$N%5!<%P%&%#%s%I%&$r; H$&3H$,$G$-$^$9! #

widelines $r; XDj$9kH! "A4FN%0%i%U$OI}$N9-$$@~GIA+1^$9! #**enhanced** $r; XDj$9kH! ">eIU$-J8; z$d2<IU$-J8; z! "U#?t$N%U%)%s%H$r; H$&3H$,$G$-$^$9(>\:Y$O! "0J2<; 2>H: **enhanced text (p. 25)**)!#%3%"PostScript %U%)%s%H$N%U%)%s%HL>$O1J8; z$K>JN,$G$-$^$9(T/H/C/S O=1>$1 Times/Helvetica/Courier/Symbol $r0UL#$7$^$9)!#

title $r; XDj$9kH! "$=$1$OIA2h%&%#%s%I%&$N%?%$%H%k$H7F; Ho1$^$9! #$=$1$O%5!<%P%$%s%9%?%s%9L>H7Fb; Ho1! "$=$1$ODI2C$N?t0z?t$r>e=q$-7^$9! #

@~$NI}$O **set linestyle** $GJQ99$G$-$^$9! #

Png

=q<0:

```
    set terminal png
```

```
{{no}enhanced}
{{no}transparent} {{no}interlace}
{{no}truecolor} {rounded|butt}
{linewidth <lw>} {dashlength <dl>}
{tiny | small | medium | large | giant}
{font "<face> {,<pointsize>}"} {fontscale <scale>}
{size <x>,<y>} {{no}crop}
{background <rgb_color>}
```

PNG, JPEG, GIF 2hA|$O!"30It%i%$%V%i%jlibgd $r;H$C$F@8@.$5l^$9!#PNG $NIA2h$O!"ImageMagick %Q%C %1!<%8$N%=%U%H'display' K=$N=PNC$r0J2<Nh$&$K%Q%$%WGEC9$3HGBPOCE*$KI=<(5;$k3H$,G-$^$9:

```
set term png
set output '| display png:-'
```

<!$NIA2h%3%^%s%I$+iN=PNC$O!"display %&%#%s%I%&>e$GBPOCE*$K<space> rBGD3H$G8+$k3H$,G-$^$9!#8=:_$NIA2h$r%U%!%$%k$KJ]B8$9kK$O!"display %&%#%s%I%&$G:8%/%j%C%/$7!"**save** $rA*Br$7F/$@$5$$!#

transparent $O!"%I%i%$%P$KGX7J?'$NF)L@2=(transparent) $r9T$&h&;X<(7^$9!#%G%U%)%k%H$O **notransparent** $G$9!#

interlace $O!"%I%i%$%P$K%$%s%?!<%l!<%9GIF $r@8@.$9kh$&;X<($7$^$9!#%G%U%)%k%H$O **nointerlace** $G$9!#

%*%W%7%g%s **linewidth** $H **dashlength** $O3HBgN($G!"IA2h5lk9YF$N@~$K1F6A$rM?$($^$9!#9JoA!"3liOMM!9$JIA2h%3%^%s%I$GMW5a5lkCMK3];;5l$^$9!#

%G%U%)%k%HGO!"=PNO5l$k PNG 2hA|$O256 8D$KHV9fIU$1il$??'$r;HMQ7^$9!#Be$ojK%*%W%7%g%s **truecolor** $r;H$($P!"24 %S%C%H/%T%/%;%k$N?'>pJs$r;}$D TrueColor 2hA|$,@8@.$5l^$9!#F)L@2=EI$jDV$7(transparent fill) $r;HMQ$9kH$-$O!"3N%*%W%7%g%s **truecolor** $,I,MW$KJj$^$9!#0J2<;2>H: **fillstyle (p. 163)**!#GX7J$NF)L@2=$O!"HV9fIU$12hA|$+TrueColor 2hA|$G2DG=$G$9!#

butt $O@~J,$NIA2h$G!"$=$NC<$NE@GNO_$@$7$r5/$3$5$J$$IA2h%a%=%C%I$r;H$&h&%I%i%$%P$K;X<(7^$9!#$3$N@_Dj$O!"@~I}$,1 hjBg$-$$>19gKN$_M-8z$G$9!#$3$N@_Dj$O!"?eJ?@~!"?bD>@~$NIA2h$N>19g$KM-MQ$G7g$&!#%G%U%)%k%H$O **rounded** (4]$a) $G$9!#

%U%)%s%H$NA*Br$N>\:Y$O!"$d$dJ#;($G$9!#0J2<$KF1$80UL#$r;}$D4JC1$JNc$r<($7$^$9:

```
set term png font arial 11
set term png font "arial,11"
```

hj>\$7$$>pJsKD$$$F$O!"**fonts** $N2<$N3:Ev9k%;%/%7g%s$r;2>H$7F/$@$5$$!#

=PNOIA2h%5%$%:<x,y> $O%T%/%;%kC10L$GM?$($^$9!#%G%U%)%k%H$O640x480 $G$9!#0J2<$b;2>H: **canvas (p. 23)**, **set size (p. 159)**!#IA2h=*N;8e$NC<$NM>Gr$O!"%*%W%7%g%s **crop** $G<h$j=|$/$3H,G-!"$=$N7k2LH7F=$N2hA|$5%$%:$O>.5/Jj$^$9!#%G%U%)%k%H$O **nocrop** $G$9!#

Nc

```
set terminal png medium size 640,480 background '#ffffff'
```

3NNc$Omedium %5%$%:$N!"Bg$-$5JQ99ITG=$G2sE>G-$J$$AH$_9~$_%U%)%s%H$r;HMQ$7!"F)L@2=5l$J$$GX7J?'H7$FGr(16 ?J?t$N24bit RGB) $r;HMQ$7$^$9!#

```
set terminal png font arial 14 size 800,600
```

3l$O!"'arial' $H$$$&%U%'!<%9L>$N%9%1!<%i%V%k%U%)%s%H$r8!:w$7!"%U%)%s%H%5%$%:$r14pt $K@_Dj$7$^$9!#%U%)%s%H$N8!:w$,INh&$K9T$olk$+$K$D$$$F$O0J2<;2>H: **fonts (p. 33)**!#

```
set terminal png transparent truecolor enhanced
```

3l$O!"24 %S%C%H/%T%/%;%k$N?'>pJs$r;HMQ$7!"GX7J$rF)L@2=$7$^$9!#$=$7$FI=<($5lkJ8;zNs$NG[CV@)8f$H7F **enhanced text** %b!<%I$r;HMQ$7$^$9!#

Pngcairo

=PNG7A<0 **pngcairo** $O! "PNG =PNG$r@8@.7^$9!#<B:]$NIA2h$O! "2D %0%i%U%#%C%/%i%$%V%i%jG"$kcairo $H! "J8;zNs$NG[CV$H%l%s%@%j%s%0MQ$N%i%$%V%i%jpango $r7PM3$7$F9T$ol^$9!#

=q<0:

```
set term pngcairo
                {{no}enhanced} {mono|color}
                {{no}transparent} {{no}crop} {background <rgbcolor>
                {font <font>} {fontscale <scale>}
                {linewidth <lw>} {rounded|butt|square} {dashlength <dl>}
                {pointscale <ps>}
                {size <XX>{unit},<YY>{unit}}
```

3N=PNG7A<0$O! "3HD%J8;zNs=hM}%b!<%I(enhanced text mode) $r%5%]!<%H$7$F$$$F! "%U%)%s%H$d=q<0%3%^%s%I(>eIU! "2<IUJI) $r%i%Y%k$dB>$NJ8;zNs$KKd$a9~$'3H$,$G$-$^$9!#3HD%J8;zNs=hM}%b!<%I$N=q<0$OB>$N gnuplot $N=PNG7A<0$H6&DL$G$9!#>\:Y$O! "0J2<;2>H: **enhanced (p. 25)**!#

IA2hK*1kA4FN@~$NI}$O! "0x;R<lw> $GJQ99$G$-$^$9!#

rounded $O! "@~$NC<$d@\9gIt$r4]$/$7$^$9!#%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9!#

PNG =PNG$N%G%U%)%k%H$N%5%$%:$O! "640 x 480 %T%/%;%k$G$9!#%*%W%7%g%s **size** $O! "$3lr%f!<%6$N;XDj$9kbNXJQ99$7$^$9!#%G%U%)%k%H$NX, Y %5%$%:$NC10L$O%T%/%;%k$G$9,!"B>$NC10L$b;HMQ2DG=$G$9(8=:_$O cm $H%$%s%A)!#%5%$%:$r cm $+%$%s%A$GM?$(kH$=$l$O! "2rA|EY72 dpi GN%T%/%;%k?t$KJQ4 9$5l^$9!#**size** %*%W%7%g%s$G;XDj5l$?$3HKhkIA2h$NC<$+$iC<$^GNNN0h$O! ">o$K%9%/%j!<%s:BI8$N0.0 $+$i1.0 $KBP1~$7$^$9!#

<font> $O! ""FontFace,FontSize" $N=q<0! "$D$^$j%U%)%s%HL>$H%5%$%:$r%+%s%^$G6h@ZC?0lDNJ8;zNsH7$FI=5-$7$^$9!#FontFace $O! "'Arial' Nh$&$JDL>o$N%U%)%s%HL>$G$9!#%U%)%s%HL>$rM?$(J>19g! "pngcairo =PNG7A<0GO'Sans' $,;HMQ$5l^$9!#FontSize $O%]%$%s%HC10LGN%U%)%s%H%5%$%:$G$9!#;XDj$7J>19g$O! "pngcairo =PNG7A<0$G$O12 %]%$%s%H$N%5%$%:$,;HMQ$5l^$9!#

```
Nc :
    set term pngcairo font "Arial,12"
    set term pngcairo font "Arial" # %U%)%s%HL>$N$_JQ99
    set term pngcairo font ",12" # %U%)%s%H%5%$%:$N$_JQ99
    set term pngcairo font "" # %U%)%s%HL>$H%5%$%:$r%j%;%C%H
```

%U%)%s%H$O! "DI>o$N%U%)%s%H=hM}5!9=Kh$j<hF@$5l^$9!#Windows GO! "%U%)%s%H$O%3%s%H%m!<%k%Q%M%k$N "%U%)%s%H" $N9'L\$G9=@.$5$18+D1ilkbNG! "UNIX GO! "%U%)%s%H$O "fontconfig" $G=hM}$5l^$9!#

J8;zNs$N%l%$%"%&%H$K;HMQ$5lk%i%$%V%i%jPango $O! "utf-8 $K4p$E$$$F$$$^9N$G! "pngcairo =PNG7A<0$G $O! "J8;z3!<%I$r utf-8 $KJQ4 9$9kI,MW,$"$j$^$9!#%G%U%)%k%H$NF~NOJ8;z3!<%I$O! "$"$J$?$,;HMQ7F$$$k 'locale' $K4p$E$-$^$9!#B>$NJ8;z3!<%IK7$?$,INJ8;z3!<%I$r;H$C$F$$$kN+$r3N<B$K gnuplot $,$o$+$kh&K7F/$@$5$$!#>\:YKD$$$F$O! "0J2<;2>H: **encoding (p. 121)**!#

pango $O! "unicode %^%C%T%s%0$GJ%U%)%s%HKBP7FOM=4|$;$L7k2L$rM?$(k+b7l^;$s!#Nc$($PSymbol %U%)%s%H$KBP7F$O! "pngcairo =PNG7A<0$O! "U8;z3!<%I$r unicode $KJQ4 9$9k?aK http://www.unicode.org/GDs6!5l$k%^%C%T%s%0$rMxMQ7^$9!#$J$*!"'the Symbol font" $O! "Acrobat Reader $H0l=o$K "SY____.PFB" H7$FG[I[$5lF$$$k Adobe Symbol %U%)%s%HG"kH2r<a5lk3HKCm0U7F$/$@$5$$!#3NBeoj$K! "OpenOffice.org $H0l=o$K "opens___.ttf" H7$FG[I[$5lk OpenSymbol %U%)%s%H$,F1$8J8;z$rDs6!$7$F$$^$9!#Microsoft $bSymbol %U%)%s%H("symbol.ttf") $rG[I[$7$F$$^{9},!"3l$OO[$J$kJ8;z%;%C%H$KJC$F$$$F! "$$$/D+$O7g$1$F$$^{9}7! "$$$/D+$O?t<05-9f$KJQoCF7$^$C$F$$$^$9!#$"J?$N%G%U%)%k%H$N@_DjGJsi$+$NLdBj$,5/$-$?>19g(Nc$($P%G%b%9%/%j%W%Henhancedtext.dem $,$Acs$HI=<($5lJ$$H$$C$?>19g) $O! "Adobe $+OpenOffice $NSymbol %U%)%s%H$r%s%9%H! <%k7F! "Microsoft $NSymbol %U%)%s%H$r:o=|7J$$H$$1$J$$+b7l^$;$s!#

IA2h$N%l%s%@%j%s%0$O! "cairo $Hpango %i%$%V%i%j,%5%]!<%H9kHC0CGN%*!<P!<%5%s%W%j%s%0! "%"%s%A%(%$%j%"%9! "%U%)%s%H%R%s%F%#%s%0$r;HMQ$7$^$9!#

Postscript

postscript %I%i%$%P$G$O$$/D+$N%*%W%7%g%s$,@_DjG-$^$9!#

```
=q<0:
     set terminal postscript {default}
     set terminal postscript {landscape | portrait | eps}
                             {enhanced | noenhanced}
                             {defaultplex | simplex | duplex}
                             {fontfile [add | delete] "<filename>"
                              | nofontfiles} {{no}adobeglyphnames}
                             {level1 | leveldefault | level3}
                             {color | colour | monochrome}
                             {background <rgbcolor> | nobackground}
                             {dashlength | dl <DL>}
                             {linewidth | lw <LW>}
                             {rounded | butt}
                             {clip | noclip}
                             {palfuncparam <samples>{,<maxdeviation>}}
                             {size <XX>{unit},<YY>{unit}}
                             {blacktext | colortext | colourtext}
                             {{font} "fontname{,fontsize}" {<fontsize>}}
                             {fontscale <scale>}
```

```
0J2<$N$h$&$J%(%i!<%a%C%;!<%8$,=P$?>l9g:
     "Can't find PostScript prologue file ... "
```

0J2<;2>H: **postscript prologue (p. 234)**!#$=$7F=$N;X<($K=>CF$/$@$5$$!#

landscape $H **portrait** $O=PNO$,2#CV$+!"=DCV$+$rA*Br$7$^$9!#**eps** %b!<%I$OEPS (Encapsulated PostScript) =PNO$r@8@.$7$^$9$,!"$3lCDL>o$NPostScript $K!"$=lrB>$NB?$/$N%"%W%j%1!<%7%g%s$G<h$j9~$'3H$,$G$-$kh&$K$$/D+$N9T$rDI2C7?bN$G$9(DI2C5l$k9T$OPostScript $N%3%a%s%H9T$JNG!"hCF=$l<+?H$bAcsH0u:~G-$^$9)!#EPS =PNO$rF@$kKO**eps** %b!<%I$r;HMQ$7!"1 DN%U%!%$%k$K$O1 DN%0%i%UN_!"H7F/$@$5$$!#**eps** %b!<%IGO%U%)%s%H$b4^$a$F%0%i%UA4BN$,%G%U%)%k%HNBg-5NH>J,$K=L$ail$^$9!#

enhanced $O3HD%J8;zNs=hM}%b!<%I(>eIU$-J8;z!"2<IU$-J8;z!"$*$h$SJ#?t$N%U%)%s%H$NMxMQ)$N5!G=$rM-8z$K7^$9!#>\:Y$O!"0J2<;2>H: **enhanced (p. 25)**!#**blacktext** $O!"$?H(%+%i!<%b!<%IGbA4FNJ8;zNs$r9u$G=q$-$^$9!#

PostScript $NN>LL0u:~L?Na(duplex) $O!"%W%j%s%?$G1Kg$N;f$KN>LL0u:~$9k$3Hr2DG=K7$^$9!#**defaultplex** $O%W%j%s%?$N%G%U%)%k%H$N@_Dj$r;HMQ$7!"**simplex** $O;f$NJRLLN_0u:~!"**duplex** $ON>LL0u:~$r9T$J$$$^$9($"J?$N%W%j%s%?$,$=$l$r9T$J$($J$$$J$iL5;k$5l^$9)!#

"<**fontname**>" $OM-8z$JPostScript %U%)%s%H$NL>A0$G!"<**fontsize**> $OPostScript %]%$%s%HC10LGN%U%)%s%HNBg-5G$9!#I8=`E*$JpostScript %U%)%s%H0J30$K!"?t<0$rI=8=9kNKJXMx$JobliqueSymbol %U%)%s%H("Symbol-Oblique") $,Dj5A$5lF$$$^$9!#

default $OA4$F$N%*%W%7%g%s$r0J2<$N%G%U%)%k%H$NCM$K@_Dj$7$^$9:**landscape**, **monochrome**, **dl 1.0**, **lw 1.0**, **defaultplex**,**enhanced**, "Helvetica", 14pt!#PostScript $N%0%i%U%N%G%U%)%k%H$NBg$-$5$O!"10 %$%s%A$NI}$G7 %$%s%A$N9b5G$9!#%*%W%7%g%s**color** $O%+%i!<;rM-8z$K$7!"**monochrome** $O3FMWAG$r9u$HGrIA2h$7$^$9!#5i$K!"**monochrome** $O3%?'$N**palette** $b;HMQ$7$^$9$,!"$3lO!"L@<(E*$K**colorspec** $G;XDj$5l?ItIJ$N?'$rJQ9$7$^$;$s!#

dashlength $^$?$O**dl** $OE@@~$N@~J,$ND9$5$r<DL>(0 hjBg$-$$<B?t) $K@_Dj$7!"**linewidth** $^$?$O**lw** $OA4$F$N@~$NI}$r<LW> $K@_Dj$7$^$9!#

%G%U%)%k%HGO!"@8@.5l$kPostScript %3!<%I$O!"FC$K%U%#%k%?%j%s%0$dfilledcurves Nh$&$JG3$\$3$JNN0h$N%Q%?!<%sEIjDV7K*$$F!"PostScript Level 2 H7$F>R2p$5lF$$$k8@15!G=$r;H$$^$9!#PostScript Level 2 $N5!G=$O>r7œE*$KJ]8n$5lF$$$F!"PostScript Level 1 $N%$%s%?!<%W%j%?$,%(%i!<$r=P5:!"$'$7m%a%C%;!<%8$+PostScript Level 1 Kh$k6a;wG"$k3H$rI=<($9kh$&KJCF$$$^$9!#**level1** %*%W%7%g%s$O!"3liN5!G=$r6a;w$9$kPostScript Level1 $GBeMQ$7!"PostScript Level 2 %3!<%I$r0l@Z;HMQ$7$^$;$s!#$3lO8E$$%W%j%s%?d!"Adobe Illustrator $N8E$$%P!<%8%g%sJIGI,MWKJk$+$b7l$^$;$s!#$3$N%U%i%0**level1** $O=PNO$5l?PostScript %U%!%$%k$N"$k0l9T$r<j$GJT=8$9k3HG!"8e$+$i6/@)E*$KPostScript Level 1 5!G=$rON/OFF K9k3HbG-$^$9!#level 2 $N%3!<%I$,4^$^$l$F$$$k>l9g!">e$N5!G=$O8=ol$J$$$+!"3N%U%i%0$,;%;C%H$5l?>l9g!"$"$k$$$OPostScript %$%s%?%W%j%?%W%m%0%i'$,level 2 0J>e$NPostScript $r2r<a$9kH$O8@$oJ+C?>l9g$K7Y9pJ8$KCV$-4$9oj$^$9!#**level3** %*%W%7%g%s$O!"%S%C%H%^%C%W2hA|$NPNG 2=$N5!G=$rM-8zK7$^$9!#$=$lKh$j=PNO%5%$:r+Jj:o8:G-$^$9!#
```
```

rounded $O! "@~$NC<$d@\9gIt$r4]$/$7! "%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r; HMQ$7$^$9! #

clip $O! "PostScript K9YF$N=PNO$r BoundingBox (PostScript $N3OOH) $G%/%j%C%W$9k3Hr; X< (7^$9; %G%U%)%k%H$O **noclip** $G$9! #

palfuncparam $O **set palette functions** $+$i=PNO$N79$-rINh$&$K%3! <%I2=9k$+$r@)8f7^$9! #2r@OE*$J?'$N@.J,4X?t (**set palatte functions** $G@_Dj$5$1$k) $O! "postscript =PNO$G$O79$-$N@~7AJd40$rMQ$$$F%3! <%I2=$5$1$^$9: $^$:?'$N@.J,4X?t$, <samples> 8D$NE@$GI8K\2=$5$1! "$=$7F=1i$NE@$O! "7k2LH7$F@~7AJd40$H$NJP:9$, <maxdeviation> 0JF'b$K<}$^kh$&$K:o=|$5$1$^$9! #$[$HsIA4FNM-8z$J%Q%l%C%H$G! "%G%U%)%k%H$N <samples> =2000 $H <maxdeviation>=0.003 NCMr$=$N$^$^; H$&$N$,NI$$G7g$&! #

PostScript =PNO$N%G%U%)%k%H$NBg$-$5$O10 %$%s%Ax 7 %$%s%A$G$9! #EPS =PNO$N%G%U%)%k%HNBg-5O5 x 3.5 %$%s%A$G$9! #%*%W%7%g%s **size** O3$1$i$r%f! <%6$,; XDj7?bN$KJQ99$7$^$9! #%G%U%)%k%HGOX $HY $N%5$%:$NC10L$C%$%s%A$H$_$J$5$1$^$9$,! "B>$NC10L(8=:_$Ocm N_) $b; H$&3HOG$-$^$9! #IA2h$N BoundingBox (PostScript %U%!%$%k$N3OOH) $O! "%5%$%:$,JQ99$5$1$?2hA|$rCzEY4^$'h$&$K@5$7$/@_Dj$5$1$^$9! #%9%/%j! <%s:BI8$O! "%*%W%7%g%s **size** $G; XDj$5$1$?IA2hOH$NA4BN$, 0.0 $+$i 1.0 KJj^$9! #Cm0U: $3$1$O! "0JA0$O! "=PNO7A<0GN@_Djhj$b! "%3%^%s%I **set size** $G@_Dj$7$?J}$,$$$! "$H8@$C$F$$?3H$NJQ99$r0ULi#7^$9! #0JA0$NJ}K!GO BoundingBox $OJQ99$5$1$:$K; D$CF7$^$$! "%9%/%j! <%s:BI8$,<B:]$NIA2h$N8B3&$KBP1~7F$$^$;$sG7$?! #

fontfile $d **fontfile add** $G; XDj$5$1$?%U%)%s%H$O! "$=$N%U%)%s%H$N%U%)%s%HDj5A$rD>@\ postscript Type 1, TrueType %U%)%s%H$+$i gnuplot $Npostscript =PNO$NCf$K%+%W%;%k2=$7$^$9! #hC$F! "$=NKda9~$^$1$?%U%)%s%H$O8+=P$7! "%?%$%H%kJI$K; H$&3H$,$G$-$^$9! #▶\:Y$O! "0J2<; 2>H: **postscript fontfile (p. 233)** ! **#fontfile delete** KhCF%U%)%s%H%U%!%$%k$rKd$a9~$^1k%U%!%$%k$N0lMw$+$i<h$j=|$/3H$,$G$-$^$9! **#nofontfiles** OKda9~$_%U%)%s%H$N%j%9%H$r%/%j%"$7$^$9! #

Nc:

```
set terminal postscript default       # 0JA0$N postscript
set terminal postscript enhanced      # 0JA0$N enhpost
set terminal postscript landscape 22  # 0JA0$N psbig
set terminal postscript eps 14        # 0JA0$N epsf1
set terminal postscript eps 22        # 0JA0$N epsf2
set size 0.7,1.4; set term post portrait color "Times-Roman" 14
set term post "VAGRoundedBT_Regular" 14 fontfile "bvrr8a.pfa"
```

@~$NI}$HE@NBg-5O **set style line** $GJQ99$G$-$^$9! #

postscript %I%i%$%P$OLs 70 <oN'$N0[$J$kE@<o$r%5%]!<%H7F$$F! "$3$1$O **plot** $d **set style line** $N **pointtype** %*%W%7%g%s$GA*Br$G$-$^$9! #

gnuplot $H Postscript $K4X$9$kB?J,M-MQ$H; Wo1$k%U%!%$%k, **gnuplot** $NG[I[J*! "$^$?$O$=$NG[I[%5%$%H$N /docs/psdos %5%V%G%#%l%/%H%jFb$K$$/D+4^$^$1$F$$^$9! #$=3K$O "ps_symbols.gpi" (<B9T$9kH **postscript** %I%i%$%P$G; H$ ($kA4$F$N5-9f$r>R2p9k "ps_symbols.ps" $H$$&%U%!%$%k$r@8@.9k **gnuplot** $N%3%^%s%I%U%!%$%k)! "'ps_guide.ps" (3HD%$5$1$?=q<0$K4X9kMWLs$H! "U8; zNsFb$G8?J%3! <%I$G@8@.$5$1$kbN! "symbol %U%)%s%HEy$r4^$'PostScript %U%!%$%k)! "'ps_file.doc" (**gnuplot** $G:n$i1kPostScript %U%!%$%k$N9=B$$N@bL@$r4^$'%F%-%9%H%U%!%$%k)! "'ps_fontfile_doc.tex" (?t<0%U%)%s%H$NJU8; z$N0lMw$H LaTeX $N%U%)%s%H$NKd$a9~$_$K4X$9$kC;$$$@bL@$r4^$'LaTeX %U%!%$%k) $,$"j^$9! #

PostScript %U%!%$%k$OJT=82DG=$G! "0lEY **gnuplot** G=1r:n1P! "$=$1$rK>$'h$&$K=$@5$9k3HO<+M3$K9T$J$ ($^$9! #$=$N$?$a$N%R%s%H$rF@kK$O! "0J2<; 2>H: **editing postscript (p. 232)** $N@a! #

PostScript $NJT=8 (editing postscript)

PostScript 8@81OHFbJ#; ($J8@81$G! "$3$3$G>\:Y$r5-=R9k3HOHFbG-$^$;$s! #$=1G$b! "**gnuplot** $G:n$i1k PostScript %U%!%$%k$K$O! "CWL?E*$J% (%i! <r=$N%U%!%$%k$KF3F~$7F7$^$&4m81@-NJ$$JQ99$r9T$J$&$3H,2DG=$JItJ,$,$"$j$^$9! #

Nc$ ($P! "PostScript $NJ8"/Color true def" (**set terminal postscript color** %3%^%s%IKEz ($F%U%!%$%k$K=q$-9~$^$1$^$9) $rJQ99$7$F! "$=$NIA2h$rGr9uNbNK9kJ}K!O*o+jG7g$&! #F1MM$K! "@~$N?'! "J8; z$N?'! "@~$NB@$5(weight)! "5-9f$N%5%$:$b! "K\Ev$K4JC1$K=q$-4$9 ($i1kG7g&! #%?%$%H%k$d8+=P7JINJ8; zNs$N8m? "$d! "%U%)%s%H$NJQ99$bJT=82DG=G7g&! #G$0U$NbN$NG[CV$bJQ99G-$^$9$7! "$bAm$s! "G$0UNbNrD12C7?$j! ":o=|$7$?$jbG$-$^9,! "$=$1iN=$@5$O PostScript 8@81$N?<$$CN<1$,I,MW$G7g$&! #

gnuplot KhCF:nil$k PostScript %U%!%$%k$N9=@.$K4X7F$O!"gnuplot $N%=!<%9G[I[J*F b$Ndocs/ps %G%#%l%/%H%j$N%F%-%9%H%U%!%$%k "ps_file.doc" $K=R$Yil$F$$^$9!#

Postscript fontfile

%*%W%7%g%s **fontfile** $^$?$O **fontfile add** $O1 DN%U%!%$%kL>$r0z?tH7$F;}$A!"$=$N%U%!%$%k$r postscript =PNOF b$K%+%W%;%k2=$7FKda9~$_!"$=lKhC$FMM!9$JJ8;zNsMWAG(%i%Y%k!"L\@9$j8+=P$7!"%?%$%H%kEy) $r $=$N%U%)%s%H$G=PNO$9k3Hr2DG=K7$^$9!#%*%W%7%g%s **fontfile delete** $b1 DN%U%!%$%kL>$r0z?t$K;}$A!" $=$N%U%!%$%kL>$r%+%W%;%k2=5l$k%U%!%$%k$N%j%9%H$+$i:o=|$7$^$9!#

postscript =PNO%I%i%$%P$O$$/D+$N%U%)%s%H%U%!%$%k7A<0$rG'<1$7$^$9: ASCII 7A<0$N Type 1 %U%)%s%H(3HD%;R ".pfa")!"%P%$%J%j7A<0$N Type 1 %U%)%s%H(3HD%;R ".pfb")!"TrueType %U%)%s%H(3HD%;R ".ttf")!#pfa %U%!%$%k$CD>@\G'<1$5$l$^$9$,!"pfb $H ttf %U%!%$%k$O gnuplot $N<B9TCf$KJB9T7FJQ49$5$l!"$=$N$?$a$KE,@Z$JJQ49%D!<%k(2<5-;2>H) $,%$%s%9%H!<%k5l$F$$kI,MW$,$"j^$9!#%U%!%$%kL>$O3HD%;R$b4^aF40A4$J7A $G;XDj$9kI,MW,$"$j$^$9!#3F **fontfile** %*%W%7%g%sOAg&$I01l$D$N%U%)%s%H%U%!%$%kL>$KBP1~$7$^$9NG!" J#?t$N%U%)%s%H%U%!%$%krKda9~$`$?aK$O3$N%*%W%7%g%s$rJ#?t2s;H$C$F2<$5$!#

%U%)%s%H%U%!%$%k$O!":n6H%G%#%l%/%H%j!"$=$7$F **set fontpath** $GM?$(il$k%U%)%s%H%Q%90lMw$NA4FN%G%#%l%/%H%j$,8!:w$5l^$9!#$5iK!"4D6-JQ?t GNUPLOT_FONTPATH $G%U%)%s%H%Q%9$r@_Dj9k3HbG$-$^$9!#$=l,@_Dj5l$F$$$J$>$l9g$O%G%U%)%k%H$N8!:w%j%9%H$,;H$ol^9,!"3l$O%7%9%F%`$K0MB8$7$^$9!#>\:Y$O!"0J2<;2>H **set fontpath (p. 123)**!#

Kd$a9~$^l?%U%)%s%H%U%!%$%k;H$&KO!"%U%)%s%HL>(DL>o%U%!%$%kL>$HF1$8$GO"j^$;$s)$r;XDj$9kI,MW,$"$j$^$9!#BPOC%b!<%IG **fontfile** %*%W%7%g%s$r;H$C$F%U%)%s%H$rKd$a9~$s$@>l9g!"%U%)%s%HL>$O%9%/%j!<%s$KI=<($5l^$9!#Nc:

```
Font file 'p0520041.pfb' contains the font 'URWPalladioL-Bold'. Location:
/usr/lib/X11/fonts/URW/p0520041.pfb
```

pfa $dpfb %U%)%s%H$G$O!"%U%)%s%HL>$O%U%)%s%H%U%!%$%kFb$K8+D1k3$H,$G$-$^$9!#%U%)%s%H%U%!%$%kCf$K "/FontName /URWPalladioL-Bold def" Nh$&$J9T$,$"j^9,!"3N?Cf$NJ*$+$i/$r=|$$?bN,%U%)%s%HL>$G$9!#3NNc$N>l9g$O "URWPalladioL-Bold" HJj^$9!#TrueType %U%)%s%H$G$O!"%U%)%s%HL>$O%P%$%J%j7A<0$GJ]B8$5$l$F$$$kNG8+D1kN$OMF0W$GO"j^$;$s!#5i$K!"$=$NL>A0$OB?$/$N>l9g!"Type 1 %U%)%s%H(<B9TCf$K TrueType $,JQ49$5lk7A<0G"$k) GO%5%]!<%H5l$F$$$J$$!"%9%Z!<%9$r4^$s$@7A<0$KJC$F$$$^$9!#$=$N?a!"%U%)%s%HL>$O=3+$i%9%Z!<%9$r<h$j=|$$$?7A$KJQ49$5l^$9!#gnuplot $G;H$&$?a$K@8.5l$?%U%)%s%HL>$,2?G"k+rCNk:G$b4JC1$JJ}K!$O!"gnuplot $rBPOC%b!<%IG5/F0$7$F!"0J2<$Nh&$KF~NO$9k3HG$9:"set terminal postscript fontfile '<filename.ttf>'".

%U%)%s%H%U%!%$%k(ttf, pfb) $rpfa 7A<0$KJQ49$9$k$?a$K!"%U%)%s%H%U%!%$%k$rFIsG!"$=$7$FJQ497k2L$rI8=\PNO$KEG$-=P$9JQ49%D!<%k$,I,MWKJj^$9!#$=$N=PNO$rI8=\PNO$K=q$-=P$9$3H,G-J>l9g!"<B9TCf$NJQ49$OG-$^;$s!#

pfb %U%!%$%k$KBP7F$O!"Nc$($P "pfbtops" $,;H$($^$9!#$=$l$,%7%9%F%`$K%$%s%9%H!<%k$5$l$F$$$l$P!"<B9TCf$NJQ49$O$&$^$/9T$/$O:$G$9!#pfb %U%!%$%k$N%+%W%;%k2=$r$A$g$C$H$d$C$F$_$^$7$g$&!#$b$7%W%m%0%i%`$NJQ49;~$K@5$7$/%D!<%k$r8F$S=P$7$F$$J$>l9g$O!"INh&$K%D!<%k$r8F$S=P$7$?$iNI$$$+$r4D6-JQ?t GNUPLOT_PFBTOPFA $K!"Nc$($P "pfbtops %s" Nh$&$KDj5A7F2<5!#%s $O%U%)%s%H%U%!%$%kLv-49(il$^$9NG!"3lO=$NJ8;zNs$KI,:I,MW$G$9!#

<B9TCf$NJQ49$r7?$/$J/$F!"$1lI$b pfa 7A<0$N%U%!%$%k$OI,MWG"$k>l9g!""pfb2pfa" $H$$$&C $G=q$+l?4JC1$J%D!<%k$r;H$($PNI$$$G7g$&!#$3lOBgDq$NC %3%s%Q%$%i%G%3%s%Q%$%k$G$-!"$?$/$5sNftp %5!<%P $KCV$$F$"$j$^$9!#Nc$($P

ftp://ftp.dante.de/tex-archive/fonts/utilities/ps2mf/

<B:]$K "pfbtopfa" $H "pfb2ps" $CF1$8:n6H$r9T$$$^$9!#"pfbtops" $O7k2L$Npfa %3!<%I$rI8=\PNO$K=PNO7^9,!""pfbtopfa" $O%U%!%$%k$K=PNO$7$^$9!#

TrueType %U%)%s%H$O!"Nc$($P "ttf2pt1" $H$$$&%D!<%k$r;H$C$F Type 1 pfa %U%)!<%^%C%H$KJQ49$G$-$^$9!#$3lOOJ2<$K"$j$^$9:

http://ttf2pt1.sourceforge.net/

b7 gnuplot KAH_9~$^$l$F$$$kJQ49<j=g$,$&$^$/9T$+$J$$>l9g!"JQ49%3%^%s%I$O4D6-JQ?t GNUPLOT_TTFTOPFA $GJQ99$G$-$^$9!#ttf2pt1 $r;H$&>l9g$O!"$=lr "ttf2pt1 -a -e -W 0 %s - " Nh$&$K@_Dj7F2<5!#$3$3Gb%s $O%U%!%$%kL>$r0UL#$7$^$9!#

FC<l$JMQES$N$?$a$K! "%Q%$%W$b; H$ (kh$&$KJC$F$$$^$9 (%Q%$%W$r%5%]!<%H$7$F$$$k OS >e$G)!#%U%!%$%kL>$r "<" $G; O$a! "$=$N8e$K%W%m%0%i% `8F$S=P$7$rD I2C$7$^$9! #$=$N%W%m%0%i% `=PNO$OI8= `=PNOXN pfa %G! <%?GJ1l$P$$$1$^$;$s! #7k2L$H7F pfa %U%!%$%k$r! "Nc$ ($P0J2<$Nh&K7$F% "%/%;%9%G$-k3HKJj$^$9:

set fontfile "< cat garamond.pfa"!#

Type 1 %U%)%s%H$r<h$j9~$ `$3$H$O! "Nc$ ($P LaTeX J8=qCf$K postscript %U%!%$%k$r<h$j9~$ `>l9g$K; H$ ($^$9!# pfb 7A<0$N "european computer modern" %U%)%s%H ("computer modern" %U%)%s%H$N0l<o) $,3FCO$N CTAN %5!<%PKCV+lF$$$^$9!#

ftp://ftp.dante.de/tex-archive/fonts/ps-type1/cm-super/

Nc$ ($P! "%U%!%$%k "sfrm1000.pfb" $O! "CfB@! "%;%j%UIU$-! "N)BN$N 10 %]%$%s%H$N%U%)%s%H (%U%)%s%HL>"SFRM1000") $G$9!#computer modern %U%)%s%H$O:#$G$b?t<0$r=q$/$NKI,MWG9,! "$=$l$OOJ2<$K"j^$9:

ftp://ftp.dante.de/tex-archive/fonts/cm/ps-type1/bluesky

3liKhC$F! "TeX MQ$NG$0U$NJ8; z$b; H$ ($^$9!#7+$7! "computer modern %U%)%s%H$O>/$7% (%s%3!<%G%#%s%0$,$*$+$7$/$JCF$$$^$9 ($3N?$a! "J8; z$NsKO cmr10.pfb NBeojK sfrm1000.pfb $r; H$&Y-$G$9)!#TeX %U%)%s%H$N; HMQK!$O$$$/D+$N%G%b$N0lDGCNk3H,G-$^$9!#**gnuplot** $N%=!<%9G [I [J*$N/docs/psdoc $K4^$^lk%U%!%$%k"ps_fontfile_doc.tex" $K TeX ?t3X%U%)%s%H$NJ8; z$N0lMwI=$,4^$^$l$F$$$^$9!#

%U%)%s%H "CMEX10" (%U%!%$%k "cmex10.pfb") rKda9~$ `$H! "gnuplot $OI2C%U%)%s%H "CMEX10-Baseline" $bDj5A$7$^$9!#$=$l$O! "B>$NJ8; zK"$&$h$&$K?bD>J}8~K:i5l?bN$G$9 (CMEX10 $O! "5-9f$NE7JU$K%Y!<%9%i%s%s$,$"$j$^$9)!#

PostScript prologue %U%!%$%k

3F PostScript =PNO%U%!%$%k$O%%Prolog %;%/%7%g%s$r4^$_$^$9$7! "Nc$ ($PJ8; z% (%s%3!<%G%#%s%0$JIr4^$`DI2C%f!<%6Dj5A%;%/%7%g%s$r4^$`$+b7$^$;$;$s! #3liN%;%/%7%g%s$O! "gnuplot $N<B9T%U%!%$%kCf$K%3%s%Q%$%k5l$F$$$k! "$"$k$$$O$"$J$?%N%3%s%T e!<%?$NJLNH3m$KJ]B8$5lF$$$k PostScript prologue %U%!%$%k72$+$i%3%T!<$5l^$9!#$3li$N%U%!%$%k,CV$+$l$k%G%U%)%k%H$N%G%#%l%/%H%j$O! "gnuplot $N%$%s%9%H!<%k;~$K@_Dj$5l^9,! "3N%G%U%)%k%H$O gnuplot %3%^%s%I$N**set psdir** $r; H$&$+! "4D6-JQ?t GNUPLOT_PS_DIR $rDj5A$9k3HGJQ99G-$^$9!#0J2<; 2>H: **set psdir (p. 158)**!#

Postscript adobeglyphnames

3N@_Dj$O! "UTF-8 % (%s%3!<%G%#%s%0GN PostScript =PNOKN$_4X78$7$^$9!#3l$O! "0x00FF hjBg$-$$$ Unicode % (%s%H%j%]%$%s%H ($D$^$j Latin1 =89g30N9YF) $NJ8; z$r5-=R9kNK; Hol$kL>A0$r@)8f7^$9!#0lHI$K! "unicode J8; z$C0l0U$NL>A0$r; }$?$:! "$=lO unicode <1JIHV9f7+; }A^$;$s! #7+$7! "Adobe $O! "$"$kHC0O$NJ8; z (3HD%%i%F%sJ8; z! "%.%j%7%cJ8; zEy) $KL>A0$r3djEvF$k?d>)5,B'$r; }CF$$$^$9!#%U%)%s%H$KhCFO3N5,B'$rMxMQ$7$F$$$kbN$"$j$^$9$7! "$=$&$G$J$$$bNb$"$j$^$9!#gnuplot $O%G%U%)%k%H$G$O Adobe %0%j%UL>$r; HMQ7^$9!#Nc$ ($P! "%.%j%7%cJ8; z$N>.J8; z$N%"%k%U%!$O/alpha HJj^$9!#**noadobeglyphnames** $r; XDj$7$?>l9g! "$3$NJ8; z$KBP7F gnuplot OBeojK/uni03B1 $r; H$*$&$H7^$9!#$3$N@_Dj$G$*$+7/JC$?>H$9lP! "$=$lO=$NJ8; z$,%U%)%s%HF'bK"kKb+oi$:$=l,8+D+iJ$$>l9g$G$9!#Adobe %U%)%s%HKBP7FO! "%G%U%)%k%H$r; H$&N,>o$K@5$7$$+b7l^$;$s,! "B>$N%U%)%s%H$G$ON>J}$N@_Dj$r; n$7F_$J$$$H$$1$J$$+b7l^$;$s! #0J2<$b; 2>H: **fontfile (p. 233)**!#

Pslatex and pstex

pslatex %I%i%$%P$O LaTeX $G8e=hM}$5lk=PNO$r@8@.$7! "**pstex** %I%i%$%P$O TeX $G8e=hM}$5lk=PNO$r@8@.$7$^$9!#**pslatex** $O dvips $H xdvi $GG'<12DG=$J\special L?Na$r; HMQ$7$^$9!#**pstex** $G@8@.$5lk?^$O! "G$0U$N plain-TeX %Y!<%9N TeX (LaTeX b=$&$G$9) $G<h$j9~$`$3H,G-$^$9!#

=q<0:

```
set terminal [pslatex | pstex] {default}
set terminal [pslatex | pstex]
                          {rotate | norotate}
                          {oldstyle | newstyle}
                          {auxfile | noauxfile}
                          {level1 | leveldefault | level3}
```

```
                    {color | colour | monochrome}
                    {background <rgbcolor> | nobackground}
                    {dashlength | dl <DL>}
                    {linewidth | lw <LW>}
                    {rounded | butt}
                    {clip | noclip}
                    {palfuncparam <samples>{,<maxdeviation>}}
                    {size <XX>{unit},<YY>{unit}}
                    {<font_size>}
```

0J2<Nh$&$J%(%i!<%a%C%;!<%8$,=P$?>l9g:

```
"Can't find PostScript prologue file ... "
```

0J2<;2>H: **postscript prologue (p. 234)** !#$=$7F=$N;X<($K=>CF$/$@$5$$!#

%*%W%7%g%s **color** $O%+%i!<$rM-8z$K$7!"**monochrome** $O3FMWAG$r9u$HGrIA2h$7$^$9!#5i$K!"**monochrome** $O3%?'$N **palette** $b;HMQ$7$^$9$,!"$3lO!"L@<(E*$K **colorspec** $G;XDj$5l?ItIJ$N?'$rJQ99$7$^$;$s!#

dashlength $^$?$O **dl** $OE@@~$N@~J,$ND9$5$r <DL> (0 hjBg$-$$<B?t) $K@_Dj$7!"**linewidth** $^$?$O **lw** $OA4$F$N@~$NI}$r <LW> $K@_Dj$7$^$9!#

%G%U%)%k%HGO!"@8@.5l$k PostScript %3!<%I$O!"FC$K%U%#%k%?%j%s%0$dfilledcurves Nh$&$JG3$\$3$JNN0h$N%Q%?!<%sEIjDV7K*$$$F!"PostScript Level 2 H7$F>R2p$5lF$$$k8@8l5!G=$r;H$$$^$9!#PostScript Level 2 $N5!G=$O>r7oE*$KJ]8n$5lF$$$F!"PostScript Level 1 $N%$%s%?!<%W%j%?$,%(%i!<$r=P5:!"$`$7$m%a%C%;!<%8$+PostScript Level 1 Kh$k6a;w$G$"$k3H$rI=<($9kh$&$KJC$F$$$^$9!#**level1** %*%W%7%g%s$O!"3liN5!G=$r6a;w$9$k PostScript Level1 $GBeMQ$7!"PostScript Level 2 %3!<%I$r0l@Z;HMQ$7$^$;$s!#$3lO8E$$%W%j%s%?$d!"Adobe Illustrator $N8E$$%P!<%8%g%sJIGI,MWKJk$+$b7l$^$;$s!#$3$N%U%i%0 **level1** $O=PNO$5l? PostScript %U%!%$%k$N$"$k0l9T$r<j$GJT=8$9$k3H$G!"8e$+$i6/@)E*$K PostScript Level 1 5!G=$r ON/OFF K9k3HbG-$^$9!#level 2 $N%3!<%I$,4^$^$l$F$$$k>l9g!">e$N5!G=$O8=ol$J$$$+!"3N%U%i%0$,%;%C%H$5l?>l9g!"$"$k$$$O PostScript %$%s%?%W%j%?%W%m%0%i%`$, level 2 0J>e$N PostScript $r2r<a$9kH$O8@$oJ+C?>l9g$K7Y9pJ8$KCV-49oj^$9!#**level3** %*%W%7%g%s$O!"%S%C%H%^%C%W2hA|$N PNG 2=$N5!G=$rM-8z$K7^$9!#$=lKhj=PNO%5%$%:$r$+$J$j:o8:$G$-$^$9!#

rounded $O!"@~$NC<$d@\9gIt$r4]$/$7!"%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9!#

clip $O!"PostScript K9YF$N=PNO$r BoundingBox (PostScript $N30OH) $G%/%j%C%W$9k3Hr;X<(7^$9;%G%U%)%k%H$O **noclip** $G$9!#

palfuncparam $O **set palette functions** $+$i=PNO$N79$-rINh$&$K%3!<%I2=9k$+$r@)8f7^$9!#2r@OE*$J?'$N@.J,4X?t (**set palatte functions** $G@_Dj$5lk) $O!"postscript =PNO$G$O79$-$N@~7AJd40$rMQ$$$F%3!<%I2=5l$^$9: $^$:?'$N@.J,4X?t$, <samples> 8D$NE@$GI8K\2=5l!"$=$7F=li$NE@$O!"7k2LH7$F@~7AJd40$H$NJP:9$, <maxdeviation> 0JFb$K<}$^kh$&$K:o=|5l$^$9!#$[$HsIA4FNM-8z$J%Q%l%C%H$G!"%G%U%)%k%H$N <samples> =2000 $H <maxdeviation>=0.003 NCMr$=$N$^$^;H$&$N$,NI$$$G7g$&!#

PostScript =PNO$N%G%U%)%k%H$NBg$-$5$O10 %$%s%A x 7 %$%s%A$G$9!#EPS =PNO$N%G%U%)%k%HNBg-5O5 x 3.5 %$%s%A$G$9!#%*%W%7%g%s **size** O3li$r%f!<%6$,;XDj7?bN$KJQ99$7$^$9!#%G%U%)%k%HGO X $H Y $N%5%$%:$NC10L$O%$%s%A$H$_$J5l$^$9$,!"B>$NC10L(8=:_$O cm N_) $b;H$&3HOG$-$^$9!#IA2h$N BoundingBox (PostScript %U%!%$%k$N30OH) $O!"%5%$%:$,JQ99$5l?2hA|$rCzEY4^$`h&$K@5$7$/@_Dj$5l^$9!#%9%/%j!<%s:BI8$O!"%*%W%7%g%s **size** $G;XDj$5l?IA2hOH$NA4BN$, 0.0 $+$i 1.0 KJj^$9!#Cm0U: 3l$O!"0JA0$O!"=PNO7A<0GN@_Djhj$b!"%3%^%s%I **set size** $G@_Dj$7$?J}$,$$$$!"$H8@$C$F$$$?3H$NJQ99$r0UL#7^$9!#0JA0$NJ}K!GO BoundingBox $OJQ99$5l:$K;D$CF7$^$$!"%9%/%j!<%s:BI8$,<B:]$NIA2h$N8B3&$KBP1~7F$$$^$;$sG7$?!#

rotate $,;XDj$5lk$H y <4$N8+=P7,2sE>5l$^$9!#<font_size> $O4uK>$9$k%U%)%s%H$N(%]%$%s%HC10L$G$N)Bg$-5G$9!#

auxfile $,;XDj$5lk$H!"%I%i%$%P$O PostScript %3%^%s%I$r!"LaTeX %U%!%$%k$KD>@\=PNO9kBeoj$K!"Jd=u%U%!%$%k$K=q$-=P9h$&$KJj$^$9!#3l$O!"dvips $,$=lr07$($J$$$/$i$$Bg$-$$%0%i%UG"$k>l9g$KM-MQ$G$9!#Jd=u PostScript %U%!%$%k$NL>A0$O!"**set output** %3%^%s%I$GM?$(il$k TeX %U%!%$%k$NL>A0$+$iF3$+lkbN$G!"$=lO$=$N:G8e$N **.tex** $NItJ, (<B:]$N%U%!%$%kL>$N:G8e$N3HD%;R$NItJ,) $r **.ps** GCV-49$($?bN!"$^$?$O!"TeX %U%!%$%k$K3HD%;R$,$J$$$JiP **.ps** $r:G8e$KIU$1B-$7$?$bNKJj$^$9!#**.ps** %U%!%$%k$O \special{psfile=...} $H$$$&L?Na$G **.tex** %U%!%$%k$K<h$j9~$^$l$^$9!#**multiplot** %b!<%I0J30GO!"<!$NIA2h$r9TJ&A0K=$N=PNO%U%!%$%k$r%/%m!<%:$9kN$rK:$l$J$$$G$/$@$5$$!#

version 4.2 hjA0$N gnuplot $O ps(la)tex =PNO7A<0$G$O 5 x 3 %$%s%A$N=PNO$G7?$,!"8=:_$G$O 5 x 3.5 %$%s %AKJSCFS^$9!#$3lO postscript eps =PNO7A<0$K9g$o$;$?JQ99$G$9!#2C$($F!"J8;zI}$O!"0JA0$N epslatex =PNO7A<0$O%U%)%s%H%5%$:$N 50% $H8+$JS7^7?$,!"8=:_$O 60% $HI>2A$7FS$^$9!#=>Mh$N7A<0$KLa9K$O!" %*%W%7%g%s **oldstyle** $r;XDj$7F/$@$5S!#

pslatex %I%i%$%P$OJ8;zNs$NG[CV$N@)8f$KFCJL$JJ}K!$rDs6!$7$^$9: (a) '{' $G;O$^$kJ8;zNs$O!"'}' GJD8kI,MW,$"$j$^$9$,!"$=$NJ8;zNsA4BN$, LaTeX KhCF?eJ?J}8~Kb?hD>J}8~Kb%;%s%?%j%s%0$5$l$^$9!#(b) '[' $G;O$^$kJ8;zNs$N>19g$O!"0LCV$N;XDjr9$kJ8;zNs (t,b,l,r N&$A2 D^$G) $,B3$-!"<!$K']{'!"J8;zNsK\BN!" $G:G8e$K'}' H7$^$9$,!"$3$NJ8;zNs$O LaTeX $, LR-box H7$F@07A7^$9!#\rule{}{} $r;H$(P5iKNI$$0LCV9go;$,2DG=$G7g$&!#

$3$3$K5-=R$5lF$$$J$%*%W%7%g%s$O **Postscript terminal** NbNHF10lG9NG!"$=$li,2?$r9T$J$&$N$+$rCNj?1lP=Ai$r;2>H$7F/$@$5S!#

Nc:

```
set term pslatex monochrome rotate       # %G%U%)%k%H$K@_Dj
```

PostScript %3%^%s%I$r"foo.ps" $K=q$-=P$9:

```
set term pslatex auxfile
set output "foo.tex"; plot ...; set output
```

8+=P7N0LCV9go;$K4X$7$F: gnuplot $N%G%U%)%k%H(BgDq$=lJjKJk$,!"$=$&$G$J$$$3Hb$"$k):

```
set title '\LaTeX\ -- $ \gamma $'
```

?eJ?J}8~Kb?hD>J}8~Kb%;%s%?%j%s%0:

```
set label '{\LaTeX\ -- $ \gamma $}' at 0,0
```

0LCV$rL@<(B*$K;XDj(>e$K9g$o$;$k):

```
set xlabel '[t]{\LaTeX\ -- $ \gamma $}'
```

B>$N8+=P$7-L\@9jND9$$8+=P7KBP9k8+@Q$j:

```
set ylabel '[r]{\LaTeX\ -- $ \gamma $\rule{7mm}{0pt}}'
```

@~I}$HE@$NBg$-$5$O **set style line** $GJQ99$G$-$^$9!#

Pstricks

pstricks %I%i%$%P$O LaTeX $N"pstricks.sty" %^%/%m%Q%C%1!<%8$H6&$K;Holk3Hr0U?^7F$$$^$9!#$3lO **eepic** $d **latex** %I%i%$%PKBeo$kA*Br;h$N0lDG$9!#"pstricks.sty" OI,MWG9,!"bAms PostScript $r2r<a$9$k%W%j%s%?!"$^$?$O Ghostscript Nh$&$JJQ49%=%U%HbI,MWG$9!#

PSTricks $O anonymous ftp $G Princeton.EDU $N /pub %G%#%l%/%H%j$+$i<hF@$G$-$^$9!#$3$N%I%i%$%P$O!" PSTricks %Q%C%1!<%8$NA4FNG=NO$r;H*$&HJIH$OA4$/9M$($F$O$$$^$;$s!#

=q<0:

```
set terminal pstricks {hacktext | nohacktext} {unit | nounit}
```

:G=i$N%*%W%7%g%s$O!"$"$^$je:No$GOJ$J}K!$G?t;zNh$jNI$$=PNO$r@8@.$9kbNG!"2 $DL\$N%*%W%7%g%s$O%0%i%U$r?-=L9k:]KOI,MW$G$9!#%G%U%)%k%HGO **hacktext** $H **nounit** $G$9!#

Qms

qms %I%i%$%P$O QMS/QUIC %l!<%6!<%W%j%s%?!"Talaris 1200!"$=$NB>$r%5%]!<%H$7$^$9!#%*%W%7%g%s$O"$j$^$;$s!#

Qt

qt =PNO7A<0$O!"Qt %i%$%V%i%j$rMQ$$$FJL%&%#%s%I%&X$N=PNO$r@8@.7^$9!#

=q<0:

```
set term qt {<n>}
            {size <width>,<height>}
            {position <x>,<y>}
            {title "title"}
            {font <font>} {{no}enhanced}
            {linewidth <lw>} {dashlength <dl>}
            {{no}persist} {{no}raise} {{no}ctrl}
            {close}
            {widget <id>}
```

J#?t$NIA2h%&%#%s%I%&$b%5%]!<%H7F$$F!"**set terminal qt** <**n**> H9lPHV9fn $NIA2h%&%#%s%I%&$X=PNO7^$9!#

%G%U%)%k%H$N%&%#%s%I%&?%$%H%k$O!"$3$N%&%#%s%I%&HV9f$K4p$E$$F$$^$9!#$=$N%?%$%H%k$O%-!<%o!<%I"title"$G$b;XDj$G$-$^$9!#

IA2h%&%#%s%I%&$O!"**gnuplot** $N=PNO7A<0$rJLJbNKJQ99$7$?8eGb3+$$$?$^$^;Dj^$9!#IA2h%&%#%s%I%&$O!"$=$N%&%#%s%I%&$,F~NO%U%)!<%+%9$r;}CF$$k>uBV$GJ8;z'q' rBGD$+!"%&%#%s%I%&%^M!<%8%c%a%K%e!<$G**close** $rA*Br$9k+!"$^$?$O**set term qt** <**n**> **close** H9k3HGJD8k3H$,$G$-$^$9!#

IA2hNN0h$N%5%$:$O%T%/%;%kC10L$GM?$($^$9!"%G%U%)%k%H$O640x480 $G$9!#$=$l$K2C$($F!"%&%#%s%I%&$N<B:]$N%5%$:KO!"%D!<%k%P!<$d%9%F!<%?%9%P!<MQ$N%9%Z!<%9$bDI2C$5l^$9!#%&%#%s%I%&$N%5%$:$rJQ99$9$k$H!"IA2h%0i%U$b%&%#%s%I%&$N?7$7$$%5%$:$KTC$?$j9g$&$h$&$K$9$0$K?-=L$5l^$9!#**qt** =PNO7A<0$O%U%)%s%H!"@~I}$b4^$a$FIA2hA4BN$r?-=L7^9,!"A4BN$N%"%9%Z%/%HHf$C0lDj$KJ]$A$^$9!#$=$N8e**replot** $H%?%$%W9k$+!"%?!<%_%J%k%D!<%k%P!<$N**replot** %"%$%3%s$r%/%j%C%/9k$+!"?7$?$K**plot** %3%^%s%I$rF~NO9k$H!"$=$N?7$7$$IA2hGO40A4K=$N%&%#%s%I%&$K9go;il$^$9$,!"%U%)%s%H%5%$:$d@~I}$O$=$l$>$l$N%G%U%)%k%H$K%j%;%C%H5l$^$9!#

position %*%W%7%g%s$OIA2h%&%#%s%I%&$NOLCV$r@_Dj$9kN$K;H$($^$9!#3l$O%3%^%s%I**set term** 8e$N:G=i$NIA2h$KN_E,MQ5l$^$9!#

8=:_$NIA2h%&%#%s%I%&(**set term qt** <**n**> $GA*Br$5l?bN)$OBPOC7?$G!"$=$N5sF0$O!"B>$N=PNO7A<0$H6&DL$G$9!#>\:Y$O!"0J2<;2>H: **mouse (p. 140)**!#$=$lKOCDI2C$N%"%$%3%s$b$$/D+$D$$F$$^$9,!"$=liO=$l<+BN$,@bL@E*JbNKJC$F$$kO:$G$9!#

3N=PNO7A<0$O!"3HD%J8;zNs=hM}%b!<%I(enhanced text mode) $r%5%]!<%H$7$F$$F!"%U%)%s%H$d=q<0%3%^%s%I(>eIU!"2<IU$J$I)$r%i%Y%k$dB>$NJ8;zNsKKda9~$`$3H,G-$^$9!#3HD%J8;zNs=hM}%b!<%I$N=q<0$O!"gnuplot $NB>$N=PNO7A<0$H6&DL$G$9!#>\:Y$O!"0J2<;2>H: **enhanced (p. 25)**!#

<font> $O"FontFace,FontSize" $N7A<0$G!"FontFace $HFontSize Hr%3%s%^$GJ,N%7F0lDNJ8;zNs$H7F=q$-$^$9!#FontFace $O!"'Arial' Nh$&$JDL>o$N%U%)%s%HL>$G$9!#FontFace $rM?$(J>$l9g$O!"qt =PNO7A<0$O'Sans' $r;HMQ$7$^$9!#FontSize $O%]%$%s%HC10L$N%U%)%s%H%5%$:$G$9!#FontSize $rM?$(J>$l9g$O!"qt =PNO7A<0$O9 %]%$%s%H$r;HMQ$7$^$9!#

```
Nc :
   set term qt font "Arial,12"
   set term qt font "Arial" # %U%)%s%HL>$N$_JQ99
   set term qt font ",12" # %U%)%s%H%5%$:$N$_JQ99
   set term qt font "" # %U%)%s%HL>!"%U%)%s%H%5%$:$r%j%;%C%H
```

dashlength $O!"E@@~/GK@~%Q%?!<%s$Nf!<%6Dj5AKN$_1F6A$rM?$(!"Qt $,FbIt$K;}CF$$k%Q%?!<%sKO1F6A$rM?$($^$;$s!#

2DG=$J8B$j:G$bNI$$=PNO$r@8@.$9k?aK!"3N%l%s%@%j%s%0$O%"%s%"%j%"%9!"%*!<%P!<%5%s%W%j%s%0!"%R%s%A%s%0$N3$D$N5!9=$r;}CF$$^$9!#%*!<%P!<%5%s%W%j%s%0$O!"%"%s%A%(%$%j%"%9HAH$G%T%/%;%khj$b>.$5$$%5%$:$G$N@:EY$rDs6!$7!"gnuplot $,Hs@0?t:BI8$ND>@~$r=q$1kh$&$KJj$^$9!#3l$O!"BP3QJ}8~$ND>@~(Nc$($P'plot x')$,:81&$KMIlkNrHr1^$9!#%R%s%F%#%s%0$O!"%*!<%P!<%5%s%W%j%s%0KhCF0z$-5/$3$5$l$k?eJ?!"?hD>J}8~$N@~J,N\+7rHr1^$9!#$3$N=PNO7A<0$O!"3liND>@~$r@0?t:BI8$KB7$(!"$=lKhj!"1%T%/%;%kI}$ND>@~$CK\Ev$K1$D(1Dh$jB?$/$b>/$J$/$b$J$$)$N%T%/%;%k$GIA2h7^$9!#

%G%U%)%k%HGO!"IA2h$,9T$ol?H-$K%&%#%s%I%&$O%G%9/%H%C%W$N0lHV>e(:GA0LL)$KI=<(5l$^$9!#3l$O!"%-!<%o!<%I%"I"raise" $G@)8f$G$-$^$9!#%-!<%o!<%I"persist" $O!"$9YF$NIA2h%&%$%s%I%&$rL@<(E*$KJD8J$$4V$O!"gnuplot $,*N;$7$J$$h$&$K7^$9!#:G8e$K!"%G%U%)%k%H%G%O<space> %-!<$Ognuplot %3%s%=!<%k%&%#%s%I%&$r>e$K>e$2(MS-Windows N_)!"'q' $OIA2h%&%#%s%I%&$rJD8^$9!#%-!<%o!<%I"ctrl" $O!"$=li$N%-!<3d$jEvFr!"$=$l$>$l<ctrl>+<space> $H<ctrl>+'q' $KJQ99$7$^$9!#

%W%m%0%i% '$N%3%s%Q%$%k; ~$KA*Br$7$?>l=j$K!"gnuplot $N30It%I%i%$%Pgnuplot_qt $,%$%s%9%H!<%k5l$^$9$,!"4D6-JQ?t GNUPLOT_DRIVER_DIR GCV->l=j$rJQ99$9k3HbG-$^$9!#

Regis

regis %I%i%$%P$O REGIS %0%i%U%#%C%/8@8lGN=PNC$r@8@.$7$^$9!#3N%I%i%$%P$K$O?'$r4?';H$&$+(%G%U%)%k%H) 16 ?';H$&$+$N%*%W%7%g%s$,$"$j$^$9!#

=q<0:

```
set terminal regis {4 | 16}
```

Sun

sun %I%i%$%P$O SunView %&%#%s%I%&%7%9%F%'$r%5%]!<%H$7$F$$$^$9!#%*%W%7%g%s$O$"$j$^$;$s!#

Svg

3N%I%i%$%P$O W3C SVG (Scalable Vector Graphics) %U%)!<%^%C%H$r@8@.$7$^$9!#

=q<0:

```
set terminal svg {size <x>,<y> {|fixed|dynamic}}
                 {mouse} {standalone | jsdir <dirname>}
                 {name <plotname>}
                 {font "<fontname>{,<fontsize>}"} {{no}enhanced}
                 {rounded|butt|square} {solid|dashed} {linewidth <lw>}
                 {background <rgb_color>}
```

$3$3$G<x> $H<y> $O@8@.$5lk SVG %0%i%U%N%5%$%:$G9,!"**dynamic** $Osvg %S%e!<%o$KIA2h$N%j%5%$%:$r5v$7!"**fixed** $O@dBP%5%$%:$rMW5a$7$^$9(%G%U%)%k%H)!#

linewidth <**w**> $O?^$NCf$G;HMQ$5lkA4FN@~$NI}$r0x;R<w> $@$1A}2C5;$^$9!#

<font> $O%G%U%)%k%H$H7F;Hol$k%U%)%s%HL>(%G%U%)%k%H$G$OArial)!"<fontsize> $O%]%$%s%HC10LGN%U%)%s%H%5%$%:(%G%U%)%k%H$O12) $G$9!#svg %S%e!<%o%=%U%H$O!"$=$N%U%!%$%k$NI=<($N:]KOJL$NBeMQ%U%)%s%H$r;H$&$3HKJkG7g&!#

3HD%J8;zNs=hM}(enhanced) %b!<%I$N=q<0;XDj$O!"B>$N=PNC7A<0$N>19g$HF1$8$G$9!#\:Y$O!"0J2<;2>H **enhanced (p. 25)**!#

%*%W%7%g%s **mouse** $O!"%^%&%9%H%i%C%-%s%05!G=$H!"BP1~$9$k key >e$G%/%j%C%/9k3HG=l>lN%0%i%U$NIA2h$r On/Off K9$k5!G=$r%5%]!<%H$rD12C$9k3Hrgnuplot $K;X<($7$^$9!#%G%U%)%k%HGO%m!<%+%k%G%#%l%/%H%j!"DL>o$O/usr/local/share/gnuplot/<version>/jsFbN"$k%9%/%j%W%H$r;X$9%j%s%/$r<h$j9~$s3H$G9T$ol^9,!"%*%W%7%g%s **jsdir** KJLN%m!<%+%k%G%#%l%/%H%j$+!"DL>o$NURL $r;XDj$9k3HG3l$OJQ99$G$-$^$9!#SVG 2hA|$rWeb %Z!<%8$KF~$lkNG"lP!"IaDL$O8e<T$NURL $NJ}$r;XDj7^$9!#0lJ}$G%*%W%7%g%s **standalone** $O!"%^%&%9A':n%W%m%0%i%'$rSVG J8=q<+BNKKda9~$_!"30It%j%=!<%9$X$N%j%s%/$O9T$$$^$;$s!#

SVG %U%!%$%k$r2?$+$N30It%U%!%$%k$HA$_9g$o$;$FMxMQ$7?$>19g!"Nc$($P$=$l$,$"$kWeb %Z!<%8$d?FJ8=q$Njavascript %3!<%I$+$i;2>H$5lF$$$kh&$J>19g!"B>$NSVG %0%i%U%X$N;2>H$H$N>WFM$rHr1k$?$a$K0l0UE*$JL>A0$,I,MW$KJj$^$9!#$=$N>19g$O%*%W%7%g%s **name** $r;H$C$F8GM-$NL>A0$r3NJ]$7F/$@$5$$!#

Svga

svga %I%i%$%P$O SVGA %0%i%U%#%C%/$NPC $r%5%]!<%H$7$^$9!#3l$ODJGPP $G%3%s%Q%$%k5l$?>19g$N$_;H$&3H$,$G$-$^$9!#%*%W%7%g%s$O%U%)%s%H$K4X$9kbNN$_$G$9!#

=q<0:

```
set terminal svga {"<fontname>"}
```

Tek40

3N%I%i%$%P72$O VT-%i%$%/$JC<Kv$N$$/D+$r%5%]!<%H$7$^$9!#**tek40xx** $O Tektronix 4010 H=$NB>$[HsIN TEK %(%_%e%l!<%?$r%5%]!<%H7^$9!#**vttek** $O VT-%i%$%/$J tek40xx C<Kv%(%_%e%l!<%?$r%5%]!<%H$7$^$9!#0J2<NbNO!"gnuplot $N%3%s%Q%$%k;~$KA*Br$5l?bNN_$,MxMQ$G$-$^$9:**kc-tek40xx** $O%+%i!<$N MS-DOS Kermit Tek4010 %?!<%_%J%k%(%_%e%l!<%?$r!"**km-tek40xx** O=$NGr9uHG$r%5%]!<%H7^$9!#**selanar** $O Selanar %0%i%U%#%C%/C<Kv$r%5%]!<%H$7$^$9!#**bitgraph** $O BBN Bitgraph C<Kv$r%5%]!<%H7^$9!#$$$:lb%*%W%7%g%sO"j^$;$s!#

Tek410x

tek410x %I%i%$%P$O Tektronix 410x, 420x %U%!%_%j!<$r%5%]!<%H$7$F$$$^$9!#%*%W%7%g%s$O$"$j$^$;$s!#

Texdraw

texdraw %I%i%$%P$O LaTeX texdraw 4D6-$r%5%]!<%H$7$^$9!#$=$l$O texdraw %Q%C%1!<%8$N "texdraw.sty" $H "texdraw.tex" $H6&$K;HMQ5lk3Hr2>D j7F$$$^$9!#

?t$"$kCf$G!"E@(point) $O!"LaTeX $N%3%^%s%I"\Diamond", "\Box" JI$r;H$CFIA+l^$9!#$3li$N%3%^%s%I$O8=:_$O LaTeX2e $N%3%"$K$OB8:_$;$:latexsym %Q%C%1!<%8$K4^$^$l$F$$$^9,!"3N%Q%C%1!<%84pK\G[I[$N0lIt$G$"$j!"hC$FB?$/$N LaTeX $N%7%9%F%'$N0lItKJCF$$$^$9!#$3$N%Q%C%1!<%8$r;H&3H$rK:$l$J$$$G$/$@$5$$!#

%*%W%7%g%sO"j^$;$s!#

Tgif

Tgif $O X11 %Y!<%9$N%I%m!<%D!<%k$G$9— $?$@$7!"$3lO GIF $K4X$7$F2?$+9ko1GO$"$j$^$;$s!#

tgif %I%i%$%P$O!"%U%)%s%H;XDj!"%U%)%s%H%5%$%:;XDj!"1 %Z!<%8Fb$NU#?t$N%0%i%UIA2h$r%5%]!<%H7F$$$^$9!#<4$NHfN($OJQ9$5l^$;$s!#

=q<0:

```
set terminal tgif {portrait | landscape | default} {<[x,y]>}
                  {monochrome | color}
                  {{linewidth | lw} <LW>}
                  {solid | dashed}
                  {font "<fontname>{,<fontsize>}"}
```

<[x,y]> KO$=$N%Z!<%8Fb$Nx J}8~!"y J}8~$N%0%i%U$N?t$r;XDj$7!"**color** $O%+%i!<$G$=$rM-8z$K$7!"**linewidth** $OA4$F$N@~I}$r<LW> G\$7!"'<fontname>" KOM-8z$JPostScript %U%)%s%HL>!"'<fontsize> O=$NPostScript %U%)%s%H$NBg$-$5$r;XDj$7$^$9!#**defaults** $OA4$F$N%*%W%7%g%s$NCM$r%G%U%)%k%H$NCM$K;%C%H$7$^$9!#%G%U%)%k%H$O **portrait**, **[1,1]**, **color**, **linewidth 1.0**, **dashed**, "**Helvetica,18**" $G$9!#

solid %*%W%7%g%s$O!"JT=8:n6Cf$K$=$&G"kh$&$K!"@~$,%+%i!<$G$"$k>l9g$KIaDL;H$ol^$9!#%O!<%I%3%T!<$OGr9uKJ$k3$H$,B?$$$N$G!"$=$N>l9g$O**dashed** $rA*Br$9Y-G7$g&!#

B?=EIA2h(multiplot) $O2<oN'$NJ}K!$G<BAu$5lF$$$^$9!#

$=$N0lDO!"I8='E*$J gnuplot $NB?=EIA2h$NdjJ}$G$9:

```
set terminal tgif
set output "file.obj"
set multiplot
set origin x01,y01
set size  xs,ys
plot ...
     ...
set origin x02,y02
plot ...
unset multiplot
```

hj>\$7$$>pJsKD$$$F$O!"0J2<;2>H **set multiplot (p. 141)**!#

b&0lDNJ}K!$O%I%i%$%P$N [x,y] %*%W%7%g%s$G$9!#$3$NJ}K!$ND9=j$O!"86E@ (origin) dBg-$5 (size) $N@_Dj$r7J$/$F$bA4$F$N%0%i%U$,<+F'0E*$K=L<\$5$lG [CV$5lk3H$G$9!#%0%i%U$NHfx/y $O!"<+A3$JHf3/2 ($^?$O **set size** $G@_Dj$5l?bN) $,J];}$5l^$9!#

N>J}$NB?=EIA2h$N<BAu$,A*Br$5l?>19g!"I8='E*Jd$jJ}$NJ},A*Br5l!"7Y9p$N%a%C;!<%8$,I=<(5l$^$9!#

C10lIA2h ($^?$OI8='E*$JB?=EIA2h) $NNc:

```
set terminal tgif                    # %G%U%)%k%H
set terminal tgif "Times-Roman,24"
set terminal tgif landscape
set terminal tgif landscape solid
```

%I%i%$%P$N;}$DB?=EIA2h$N;EAH$_$rMxMQ9kNc:

```
set terminal tgif portrait [2,4]  # =DCV!"x-J}8~$K 2 $D!"y-J}8~
                                  # $K 4 $D$N%0%i%UIA2h
set terminal tgif [1,2]           # =DCV!"x-J}8~$K 1 $D!"y-J}8~
                                  # $K 2 $D$N%0%i%UIA2h
set terminal tgif landscape [3,3] # 2#CV!"N>J}$NJ}8~$K 3 $D$N%0
                                  # %i%UIA2h
```

Tikz

3N%I%i%$%P$O!"TeX $N%0%i%U%#%C%/%^%/%m$N TikZ %Q%C%1!<%8HHbK;HMQ9k=PNO$r@8@.$7$^$9!#8=:_$O!"30It lua script KhCF<BAu5l$F$$$F!"**set term tikz** $O **set term lua tikz** $N>JN,7A$G$9!#\:Y$OJ2<;2>H **term lua (p. 219)**!#=PNO7A<0$N%*%W%7%g%s$rI=<($5;$kKO!"**set term tikz help** $r;HMQ$7F/$@$5$$!#

Tkcanvas

3N%I%i%$%P$O!"0J2<$N%9%/%j%W%H8@8l$N$&$A$N0l$D$N Tk canvas widget %3%^%s%I$r@8@.$7$^$9: Tcl (%G%U%)%k%H), Perl, Python, Ruby, REXX!#

=q<O:

```
set terminal tkcanvas {tcl | perl | perltkx | python | ruby | rexx}
                      {standalone | input}
                      {interactive}
                      {rounded | butt}
                      {nobackground | background <rgb color>}
                      {{no}rottext}
                      {size <width>,<height>}
                      {{no}enhanced}
                      {externalimages | pixels}
```

7k2L$rI=<($9kK$O!"0J2<$N Tcl/Tk %3%^%s%INs$r<B9T$7$^$9:

```
package require Tk
# 0J2<$N 2 9T$O!"30It2hA|$r;HMQ$9$k>19g$K$N$_I,MW
package require img::png
source resize.tcl
source plot.tcl
canvas .c -width 800 -height 600
pack .c
gnuplot .c
```

Perl/Tk $N>19g$O!"0J2<Nh$&$K7^$9:

```
use Tk;
my $top = MainWindow->new;
```

```
my $c = $top->Canvas(-width => 800, -height => 600)->pack;
my $gnuplot = do "plot.pl";
$gnuplot->($c);
MainLoop;
```

Perl/Tkx $N>19g$O!"0J2<Nh$&$K7^$9:

```
use Tkx;
my $top = Tkx::widget->new(".");
my $c = $top->new_tk__canvas(-width => 800, -height => 600);
$c->g_pack;
my $gnuplot = do "plot.pl";
$gnuplot->($c);
Tkx::MainLoop();
```

Python/Tkinter $N>19g$O!"0J2<Nh$&$K7^$9:

```
from tkinter import *
from tkinter import font
root = Tk()
c = Canvas(root, width=800, height=600)
c.pack()
exec(open('plot.py').read())
gnuplot(c)
root.mainloop()
```

Ruby/Tk $N>19g$O!"0J2<Nh$&$K7^$9:

```
require 'tk'
root = TkRoot.new { title 'Ruby/Tk' }
c = TkCanvas.new(root, 'width'=>800, 'height'=>600) { pack  { } }
load('plot.rb')
gnuplot(c)
Tk.mainloop
```

Rexx/Tk $N>19g$O!"0J2<Nh$&$K7^$9:

```
/**/
call RxFuncAdd 'TkLoadFuncs', 'rexxtk', 'TkLoadFuncs'
call TkLoadFuncs
cv = TkCanvas('.c', '-width', 800, '-height', 600)
call TkPack cv
call 'plot.rex' cv
do forever
    cmd = TkWait()
    if cmd = 'AWinClose' then leave
    interpret 'call' cmd
end
```

gnuplot $,@8@.$9$k%3!<%I(>e$NNcGO!"'plot.<ext>" H7$F=q$-=P5l$F$$$kbN$G$9) $O!"0J2<$Nh&$J<jB3$-4X?t$r4^$s$G$$$^$9:

gnuplot(canvas)

```
0z?t$H$7$F canvas $NL>A0$r<h$j$^$9!#
$3$l$r8F$S=P$9$H!"$=$N canvas $r%/%j%"$7!"canvas $N%5%$%:$rC5$7!"$=
$NCf$K%0%i%U$rIA$-!"$=$l$K9g$&$h$&$K?-=L$7$^$9!#
```

gnuplot_plotarea()

```
canvas %9%/%j!<%s:BI8$G$NIA2hNN0h$N6-3& (xleft, xright, ytop, ybot)
$r4^$'%j%9%H$rJV$7$^$9!#
2 <!85%0%i%UIA2h (`plot`) $KBP$7$F$N$_F0:n$7$^$9!#
```

gnuplot_axisranges()

```
%0%i%U:BI8$G$N 2 $D$N<4$NHCOO (x1min, x1max, y1min, y1max, x2min,
x2max, y2min, y2max) $rJV$7$^$9!#
2 <!85%0%i%UIA2h (‘plot‘) $KBP$7$F$N$_F0:n$7$^$9!#
```

%*%W%7%g%s **standalone** $r;H$($P!"<+8J407k$7$?:G>.%9%/%j%W%H$r@8@.G-$^$9!#%G%U%)%k%H$O **input** $G!"$3lO<h$j9~$^lkY-%9%/%j%W%H$r:n$j$^$9(9JoA!"load 5lk+call 5lk+!"$^$?$OA*Br$7$?8@8lMQ$NJsi+$NE,@Z$JJ}K!$G)!#

%*%W%7%g%s **interactive** $r;XDj$9kH!"0lDN@~J,>e$G%^%&%9%/%j%C%/$7$?$H$-$K$=$NCfE@$N:BI8$,I8=\=PNO$K=PNO$5lkh&KJj^$9!#$3$NF0:n$O!"user_gnuplot_coordinates $H$$&<jB3$-4X?t$rDj5A9k3H$G!"UL$JbNKCV-49$($k3H$b2DG=$G$9!#$=$N<jB3$-4X?tKO0J2<$N0z?t$,EO5l$^$9:

```
win id x1s y1s x2s y2s x1e y1e x2e y2e x1m y1m x2m y2m,
```

3liO!"canvas $NL>A0!"@~J,$Nid!"2 DN:BI87OGN$=$N@~J,$N3+;CE@$N:BI8!"=*N;E@$N:BI8!"CfE@$N:BI8$G$9!#CfE@$N:BI8$O!"BP?t<4KBP7FN$_M?$(il$^$9

%G%U%)%k%HGO!"canvas $O **transparent** G9$,!"%*%W%7%g%s **background** $G!"L@<(E*$KGX7J?’$r@_Dj$9k3HbG-$^$9!#

rounded $O!"@~$NC<$d@\9gIt$r4]$/$7$^$9!#%G%U%)%k%H$N **butt** $O!"@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9!#

%*%W%7%g%s **rottext** $G!"U8;zNs$NG$0U3Q$G$N2sE>$rM-8zKG$-$^9,!"$=$lKO Tcl/Tk 8.6 0J9_$,I,MW$G$9!#%G%U%)%k%H$O **norottext** $G$9!#

%*%W%7%g%s **size** $O!"L\@9$j$N9o$_H%U%)%s%H%5%$:$r!";XDj5l$?canvas %5%$:KBP7$F:GE,2=$JbNK7h&H7$^$9!#%G%U%)%k%HGO!"=PNO%5%$:$O800 x 600 %T%/%;%kH7$F$$^$9!#

enhanced $O!"3HD%J8;zNs=hM}$rA*Br7^$9(%G%U%)%k%H) $,!"$3lO:#NH3mTcl GN$_MxMQ2DG=$G$9!#

%*%W%7%g%s **pixels** (%G%U%)%k%H) $O!"%U%’!<%k%;!<%U$J%T%/%;%kKh$N2hA|=hM}%k!<%A%s$rA*Br7^$9!#0J2<;2>H **image pixels (p. 58)**!#%*%W%7%g%s **externalimages** $O!"2hA|$r30It PNG 2hA|H7$FJ]B8$7!"$=$lr"HGtkcanvasなI<%I$,FI$_9~sG?-=L7^$9!#$3$N%*%W%7%g%s$O!"Tcl GN$_M-8z$G!"7+$bTk $N2hA|=hM}%k!<%A%s$,G$0U$N?-=L$rDs6!$7$F$$J$$?aK!"$"$k>u67GOCY$/$Jj^$9!#$3$N>l9g!"%9%/%j%W%H$GDs6!5l$krescale.tcl $r<h$j9~$^$J1l$P$$1$^$;$s!#

BPOC7?%b!<%I$O!"Python/Tk, Rexx/Tk GO$^$@<BAu5l$F$$^$;$s!#Ryby/Tk $NBPOC7?%b!<%I$O!"$^$@user_gnuplot_coordinates $r%5%]!<%H$7$F$$^$;$s!#

Tpic

tpic %I%i%POtpic \special GNLaTeX picture 4D6-$NIA2h$r%5%]!<%H7^$9!#$3lO **latex** $d **eepic** %I%i%$PKBeokJLJA*Br;h$G$9!#E@NBg-$5(pointsize)!"@~$NI}(linewidth)!"E@@~$NE@$N4V3V(interval) $K4X$9$k%*%W%7%g%s$,$"$j$^$9!#

=q<O:

```
set terminal tpic <pointsize> <linewidth> <interval>
```

pointsize $H **linewidth** $O@0?t$G%_%j%$%s%AC10L!"**interval** $O<B?t$GC10L$O%9%s%A$G$9!#@5$G$J$$CM$r;XDj$9$k%H%G%U%)%k%H$NCM$,;H$ol^$9!#%G%U%)%k%H$G$Opointsize = 40, linewidth = 6, interval = 0.1 $G$9!#

LaTeX $K4X$9$kA4$F$N%I%i%$P$OJ8;zNs$NG[CV$N@)8f$KFCJL$JJ}K!$rDs6!7^$9:’{’ $G;O$^$kJ8;zNs$O!"’}’ GJD8kI,MW,$"$j$^$9$,!"$=$NJ8;zNsA4BN$,LaTeX KhCF?eJ?J}8~Kb?bD>J}8~Kb%;%s%?%j%s%0$5$l$^$9!#’[’ $G;O$^$kJ8;zNs$N>l9g$O!"0lCV$N;XDj$r9$kJ8;zNs(t,b,l,r N&$A2 D^$G) $,B3$-!"<!$K’]’{’!"U8;zNsK\BN!"$G:G8e$K’}’ H7$^9,!"3NJ8;zNs$OLaTeX $,LR-box H7$F@07A7^$9!#\rule{}{} $r;H$(P5iKNI$$$0lCV9go;$,2DG=$G7g$&!#

Nc8+=P7N0lCV9go;$K4X$7$F:gnuplot $N%G%U%)%k%H(BgDo$=lJjKJk$,!"$=$&$G$J$$$3Hb$"$k):

```
set title ’\LaTeX\ -- $ \gamma $’
```

?eJ?J}8~Kb?bD>J}8~Kb%;%s%?%j%s%0:

```
set label ’{\LaTeX\ -- $ \gamma $}’ at 0,0
```

0lCV$rL@<(E*$K;XDj(>e$K9g$o$;$k):

```
      set xlabel '[t]{\LaTeX\ -- $ \gamma $}'
```

B>$N8+=P$7 – L\@9jND9$$8+=P7KBP9k8+@Q$j:

```
      set ylabel '[r]{\LaTeX\ -- $ \gamma $\rule{7mm}{0pt}}'
```

Vgagl

%I%i%$%P **vgagl** $O%^%&%9$H pm3d $r40A4$K%5%]!<%H7?!"linux $N9bB.$J%3%s%=!<%k%I%i%$%P$G$9!#%G%U%)%k %H%b!<%I$N@_DjKO4D6-JQ?t SVGALIB_DEFAULT_MODE $r;2>H$7$^$9$,!"@_Dj$5lF$$$J$$>l9g$O256 ?'%b!<%I$GM-8z$J2rA|EY$N$&$A:G$b9b$$$bNrA*Br7^$9!#

=q<0:

```
  set terminal vgagl \
               background [red] [[green] [blue]] \
               [uniform | interpolate] \
               [mode]
```

%+%i!<%b!<%I$Omode %*%W%7%g%s$GM?$($k3HbG$-$^$9!#G1024x768x256 Nh$&$J5-9fE*L>>N$d@0?t$GM?$(k3H,G-$^$9!#%*%W%7%g%s **background** $O[0, 255] $NHC0C$N@0?t1 $D!"$^$?$O3 DNAH$r<h$j$^$9!#@0 ?t1 DN>l9gO=lOGX7J$N3%?'$NCM$H8+$J$5$1!"3 DNAH$N>l9g$O$=$l$KBP1~$7$??'$,GX7J$K<h$il^$9!# Aj8_$KGSB>E*$J%*%W%7%g%s **interpolate** $H **uniform** $O!";03Q7A$NEIjDV7$N:]$K?'$NJd4V$,9T$&$+I&$+ (%G%U%)%k%H$G$OON) $r@)8f$7$^$9!#

9b2rA|EY%b!<%I$rF'@$kKO!"B?J, libvga $N@_Dj%U%!%$%k(DL>o/etc/vga/libvga.conf) $r=$@5$9$kI,MW$,$"kG 7g$&!#VESA fb $r;H$&NONI$$A*BrG9$,!"$=lO%+!<%M%k$N%3%s%Q%$%k,I,MW$G$9!#

vgagl %I%i%$%P$O!"0J2<$N%j%9%H$N$&$A$N*M-8z$J* vga %b!<%I$N:G=i$NbN$r;HMQ$7$^$9!#

- vgagl $N@_Dj;~$KM?$($ilk%b!<%I!"Nc$($P ‘set term vgagl G1024x768x256‘ $O:G=i$K G1024x768x256 %b!<%I$,M-8z$+I&$+%A%'%C%/$7$^$9!#
- 4D6-JQ?t SVGALIB_DEFAULT_MODE
- G1024x768x256
- G800x600x256
- G640x480x256
- G320x200x256
- G1280x1024x256
- G1152x864x256
- G1360x768x256
- G1600x1200x256

VWS

VWS %I%i%$%P$OVAX %&%#%s%I%&%7%9%F%'$r%5%]!<%H$7$^$9!#%*%W%7%g%sO"j^$;$s!#3N%I%i%$%P$O%G%#%9%W%l%$$N>uBV(Gr9u$+!"%0%l%$%9%1!<%k$+%+%i!<$+) $r<+F08!CN$7$^$9!#A4FN@~<o$O<B@~$GIA2h5l$^$9!#

Windows

=PNO7A<0 **windows** $O!"%0%i%UIA2h$HJ8;zNsIA2h$K Windows GDI $r;HMQ$9$k9bB.$JBPOC7?=PNO%I%i%$%P$G $9!#Windows GO!"J#?t$N4D6-$GF0:n9k **wxt** =PNO7A<0$b%5%]!<%H$5lF$$$^$9!#

=q<0:

```
     set terminal windows {<n>}
                          {color | monochrome}
                          {solid | dashed}
                          {rounded | butt}
                          {enhanced | noenhanced}
                          {font <fontspec>}
                          {linewdith <scale>}
```

```
{fontscale <scale>}
{linewdith <scale>}
{background <rgb color>}
{title "Plot Window Title"}
{{size | wsize} <width>,<height>}
{position <x>,<y>}
{close}
```

J#?t$N%&%#%s%I%&IA2h$,%5%]!<%H5l$F$$^$9: **set terminal win** <**n**> $G=PNO$,HV9fn $NIA2h%&%#%s%I%&$KAwil$^$9!#

color, **monochrome** $O!"%+%i!<=PNO$+Gr9u=PNO$+$NA*Br$G!"**dashed** $H **solid** $O!"E@@~$H<B@~$NA*Br$G$9!#**color** GO **solid** $,%G%U%)%k%H$G!"**monochrome** GO **dashed** $,%G%U%)%k%H$G$9!#**rounded** $O!"@~$NC<$d@\9gIt$r4]$/$7!"%G%U%)%k%H$N **butt** $O@m$C$?C<$H3QD%C?@\9gIt$r;HMQ$7$^$9!#**enhanced** $O3HD%J8;zNs=hM}(enhanced text mode) $N5!G=(>eIU!"2<IUJ8;z$d%U%)%s%H$N:.:_) $rM-8z$K7^$9!#\:Y$O0J2<;2>H: **enhanced text (p. 25)**!#<**fontspec**> $O "<fontface>,<fontsize>" $N7A<0$G!"'"<fontface>" $OM-8z$J Windows $N%U%)%s%HL>$G!"<**fontsize**> $O%]%$%s%HC10LGN%U%)%s%HNBg-5$G$9!#3NN>MWAG$O$$:1b>JN,2DG=$G$9!#0JA0NHGN gnuplot GO!"**font** %-!<%o!<%I$O>JN,2DG=$G!"<fontsize> $O0zMQId$J7N?tCM$GM?$(k3H,G-$^$7$?$,!"8=:_O=$N7A<0$O%5%]!<%H7F$$^;sN$GCm0U$7F/$@$5$$!#**linewidth** $H **fontscale** $G@~$NI}$HJ8;z%5%$%:$r?-=L$G$-$^$9!#**title** $O!"%0%i%U%&%#%s%I%&$N%?%$%H%k$rJQ99$7$^$9!#**size** $O%&%#%s%I%&$NIA2hNN0h$N%T%/%;%kC10L$G$NI}$H9b5r!"**wsize** $O%&%#%s%I%&<+?H$N<B:]$N%5%$%:$r!"$=7F **position** $O%&%#%s%I%&$N86E@!"9JoA:8>e3Q$N%9%/%j!<%s>e$N%T%/%;%kC10LGN0LCV$rDj5A$7$^$9!#3liN*%W%7%g%s$O!"%U%!%$%k **wgnuplot.ini** $N%G%U%)%k%H$N@_Dj$r>e=q$-7^$9!#

B>$N%*%W%7%g%s$b%0%i%U%a%K%e!<$d=i4|2=%U%!%$%k **wgnuplot.ini** $GJQ99$G$-$^$9!#

Windows HG$O!"HsBPOC7?%b!<%I$G$OLD>o!"%3%^%s%I%i%$%s$+$iM?$($?%U%!%$%k$N:G8e$KC#$9kHD>AK=*N;7^9,!"%3%^%s%I%i%$%s$N:G8e$K- $r;XDj$7$?>l9g$OJL$G$9!#$^$?!"3N%b!<%IGO%F%-%9%H%&%#%s%I%&$OI=<($;$:!"%0%i%U$N$_$NI=<(HJj^9,!"%*%W%7%g%sH7$F **-persist** (x11 HG$N gnuplot $HF1$8%*%W%7%g%s=>Mh$N Windows N_$N%*%W%7%g%s **/noend** $d **-noend** $r;H$&3HbG$-$^$9) $r;XDj$9kH gnuplot $O=*N;$7J/Jj$^$9!#3N>l9gB>$N OS GN gnuplot $N5sF0$H$O0[$J$j!"-persist %*%W%7%g%s8e$b gnuplot $NBPOC7?%3%^%s%I%i%$%s$r<u$1IU1^$9!#

%3%^%s%I **set term** $G gnuplot $N=PNO7A<0$rJQ99$7$?>l9g!"IA2h%&%#%s%I%&$O=$N$^$^;Dj^9,!"**set term windows close** $GIA2h%&%#%s%I%&$rJD8k3H$,$G$-$^$9!#

gnuplot $O!"Windows >e$G$N=PNO$N8@.N?aN$$/D+$NJ}K!$r%5%]!<%H7F$$^$9!#0J2<;2>H: **windows printing (p. 245)**!#windows =PNO7A<0$O!"%/%j%C%W%\!<%I$d EMF %U%!%$%k$rDL7FB>$N%W%m%0%i%\$H$N%G!<%?$N8r49$r%5%]!<%H$7$F$$^$9!#0J2<;2>H: **graph-menu (p. 244)**!#EMF %U%!%$%k$r@8@.9kKO!"**emf** =PNO7A<0$r;H$&3HbG$-$^$9!#

%0%i%U%a%K%e!<(**graph-menu**)

gnuplot graph %&%#%s%I%&$G%^%&9$N1&\%?%s(*) $r2!$9$+!"%7%9%F%\%a%K%e!<$+$i **Options** $rA*Br$9kH0J2<$N%*%W%7%g%s$r;}$D%]%C%W"%C%W%a%K%e!<$,8=ol$^$9:

Copy to Clipboard %/%j%C%W%\!<%I$K%S%C%H%^%C%W$d EMF 2hA|$r%3%T!<

Save as EMF... 8=:_$N%0%i%U%&%#%s%I%&$r EMF %U%!%$%k$H7FJ]B8

Print... %0%i%U%#C%/%&%#%s%I%&$r Windows %W%j%s%?%I%i%$%P$G%W%j%s%H%"%&%H!#%W%j%s%?$H3HBgN($NA*Br$,2DG=$G9,!"3N **Print** %*%W%7%g%sKh$k0u:~7k2L$O **gnuplot** $N;}$D%W%j%s%?%I%i%$%P$KhkbNDxNI$/$O$"j$^$;$s!#0J2<$b;2>H: **windows printing (p. 245)**!#

Bring to Top %A%*%C%/$rF~$lkH%0%i%U%&%#%s%I%&$rB>$NA4FNIA2h%&%#%s%I%&$N<jA0$KI=<(

Color %A%*%C%/$rF~$lkH%+%i!<$N@~o$,M-8z!"%A%*%C%/L5$7$G$OGr9u

Double buffer %0%i%U$r%9%/%j!<%s$K<L$9A0$K%a%b%j%P%C%U%!$KIA2h$9k3HrM-8zK7$^$9!#3l$O!"Nc$($P%"%K%a!<%7%g%s;~$d3<!85%0%i%U$N2sE>;~$NAiAi(%U%j%C%+!<)$r2sHr$7$^$9!#0J2<;2>H: **mouse (p. 140)**, **scrolling (p. 141)**!#

Oversampling 2>A[%~%c%s%P%9%N%5%$%:$rG\$K7$^$9!#%9%/%j!<%s$K<L$9:]KO:F$SH>J,$K=L>.5l$^$9!#3lKh$j!"%0%i%U%#C%/$Ohj3ji+KJj^9,!"7+$7%a%b%j$d7W;;~4V$,$hjI,MWG$9!#$3lO **double buffer** bI,MWG$9!#

Antialiasing @^$l@~$d@~$NC<$NJ?3j2=$rA*Br$7$^$9!#3l$OIA2h$rn/$/$9k3HKCm0U7F$/$@$5$$!#

Fast rotation %0%i%U%&%#%s%I%&$r%^%&%9$G2sE>7F$$k:]$K%"%s%A%(%$%j%"%9$r0l;~E*$K%*%UK7$^$9!#3l$O!"%^%&%9%\%?%s$rN%7?8e$KDI2C$N:FIA2h$,9T$ol^9,!"AjEv$KIA2h$rAa$/$7F/l^$9!#

Background... %&%#%s%I%&GX7J?'$N@_Dj

Choose Font... %0%i%U%#C%/%&%#%s%I%&$G;H$&%U%)%s%H$NA*Br

Update wgnuplot.ini 8=:_$N%&%#%s%I%&$N0ICV!"%&%#%s%I%&NBg-$5!"%F%-%9%H%&%#%s%I%&$N%U%)%s%HH=$N%U%)%s%H%5%$%:!"%0%i%U%&%#%s%I%&$N%U%)%s%H$H$=$N%U%)%s%H%5%$%:!"GX7J?'$r=i4|2=%U%!%$%k **wgnuplot.ini** $KJ]B8

(*) 3N%a%K%e!<$O!"**unset mouse** KhCF1&%^%&%9%\%?%s2!$7$7$+;H$(BJ/JkNGCm0U!#

0u:~ (printing)

9%$_$Khj!"%0%i%U$O0J2<$Nh&$JJ}K!$G0u:~G-$^$9!#

1. gnuplot $N%3%^%s%I **set terminal** $G%W%j%s%?$rA*Br$7!"**set output** $G=PNO$r%U%!%$%k$K%j%@%$%l%/%H

2. gnuplot graph %&%#%s%I%&$+$i **Print...** %3%^%s%I$rA*Br!#%F%-%9%H%&%#%s%I%&$+$i3l$r9T$J$&FCJL$J%3%^%s%I **screendump** b"$k!#

3. set output "PRN" H9kH=PNO$O0l;~%U%!%$%k$K=PNO$5$l!"**gnuplot** $r=*N;$9k+$^$?$O **set output** %3%^%s%I$G=PNO$rB>NbNXJQ99$9$k$H!"%@%$%"%m%0(BPOC) %\%C%/%9$,8=$o$l!"$=3G%W%j%s%?]!<%H$rA*Br!#$=3GOK $rA*Br$9kH!"=PNO$O%W%j%s%H%^%M!<%8%c$G$O2C9)$5l:K=N^$^A*Br$5l?%]!<%H$G%W%j%s%H%"%&%H$5lk!#3l$O6vA3($^$?$O8N0U)$K!"$"$k%W%j%s%?MQ$N=PNO$r!"$=lKBP1~7F$$$J$%W%j%s%?$KAw$jF@$k3H$r0UL#$9$k!#

%F%-%9%H%a%K%e!<(text-menu)

gnuplot text %&%#%s%I%&$G%^%&%9$N1&%\%?%s$r2!$9$+!"%7%9%F%'%a%K%e!<$+$i **Options** $rA*Br$9kH0J2<$N%*%W%7%g%s$r;}$D%]%C%W%"%C%W%a%K%e!<$,8=ol$^$9:

Copy to Clipboard %^!<%/7?%F%-%9%H$r%/j%C%W%\!<%I$K%3%T!<

Paste BG$A9~$s$@$N$HF1$8h&$K%/j%C%W%\!<%I$+$i%F%-%9%H$r%3%T!<

Choose Font... %F%-%9%H%&%#%s%I%&$G;H$&%U%)%s%H$NA*Br

System Colors A*Br9k$H%3%s%H%m!<%k%Q%M%k$G@_Dj7?%7%9%F%'%+%i!<$r%F%-%9%H%&%#%s%I%&$KM?$($k!#A*Br7J1l$PGrGX7J$GJ8;z$O9u$+@D!#

Wrap long lines A*Br9k$H8=:_$N%&%#%s%I%&I}hj$hD9$$9T$r@^$jJV$9

Update wgnuplot.ini 8=:_$N@_Dj$r!"%f!<%6$N%"%W%j1!<%7%g%s%G!<%?%G%#%l%/%H%jK"$k=i4|2=%U%!%$%k **wgnuplot.ini** $KJ]B8

%a%K%e!<%U%!%$%k **wgnuplot.mnu**

%a%K%e!<%U%!%$%k **wgnuplot.mnu** $, **gnuplot** $HF1$8G%#%l%/%H%jK"$k>l9g!"**wgnuplot.mnu** $K=q$+lF$$$k%a%K%e!<$,FI$_9~$^$l$^$9!#%a%K%e!<%3%^%s%I$O0J2<$NDL$j:

```
[Menu]        <!$N9T$NL>A0$G?7$7$%a%K%e!<$r3+;O
[EndMenu]     8=:_$N%a%K%e!<$r=*N;
[--]          ?eJ?$J%a%K%e!<$N;E@Z$j$rF~$l$k
[|]           ?hD>$J%a%K%e!<$N;E@Z$j$rF~$l$k
[Button]      %a%K%e!<$K2!$7%\?%s$rF~$l!"$=$l$K<!$N%^%/%m$r3d$jEv$F$k
```

%^%/%m$O2 9T$G=q$-!":G=i$N9T$O%^%/%mL>(%a%K%e!<$N8+=P$7)!"2 9TL\$,%^%/%mK\BN$G$9!#@hF,$N6uGrNs$OL5;k5l$^$9!#%^%/%m3%^%s%I$O0J2<$NDL$j:

[INPUT] [EOS] $+ {ENTER} $^$G$r%W%m%s%W%H$H7F=PNO$7J8;zNs$rF~NO[EOS] J8;zNs$N=*$j(End Of String)!#2?$b=PNO$7$J$$[OPEN] 3+$/%U%!%$%kL>$r<hF@!#:G=i$N[EOS] $^$G$,BPOC%&%#%s%I%&$N%?

```
%$%H%k!"$=$3$+$i<!$N [EOS] $+ {ENTER} $^$G$,%G%U%)%k%H$N%U
%!%$%kL>
```

[SAVE] %;!<%V%U%!%$%kL>$r<hF@([OPEN] F1MM) [DIRECTORY] %G%#%l%/%H%jL>$r<hF@!#[EOS] $+{ENTER} $^$G$,BPOC%&%#%s%I%&

$N%?%$%H%k

%^%/%mJ8;zNCV-49$($O0J2<NDLj:

```
{ENTER}     I|5" '\r'
{TAB}       %?%V '\011'
{ESC}       %(%9%1!<%W '\033'
{^A}        '\001'
...
{^_}        '\031'
```

%^%/%m$OE83+8e$NJ8;z?t$,:GBg256 J8;z$K@)8B5l$F$$$^$9!#

Wgnuplot.ini

Windows %F%-%9%H%&%#%s%I%&$H **windows** =PNO7A<0$O!"%*%W%7%g%s$N$$/D+**wgnuplot.ini** $N[**WGNUPLOT**] %;%/%7%g%s$+$iFI$_9~$_$^$9!#3N%U%!%$%k$O!"%f!<%6$N%"%W%j%1!<%7%g%s%G!<%?%G%#%l%/%H%jKCV-$^$9!#**wgnuplot.ini** %U%!%$%k$N%5%s%W%k:

```
[WGNUPLOT]
TextOrigin=0 0
TextSize=640 150
TextFont=Consolas,9
TextWrap=1
TextLines=400
SysColors=0
GraphOrigin=0 150
GraphSize=640 330
GraphFont=Tahoma,10
GraphColor=1
GraphToTop=1
GraphDoublebuffer=1
GraphOversampling=0
GraphAntialiasing=1
GraphFastRotation=1
GraphBackground=255 255 255
```

0J2<$N@_Dj$O wgnuplot $N%F%-%9%H%&%#%s%I%&$N$_$KE,MQ5l$^$9!#

TextOrigin $H **TextSize** $O!"%F%-%9%H%&%#%s%I%&$N0LCV$H%5%$%:$N;XDj$G$9!#

TextFont $O!"%F%-%9%H%&%#%s%I%&$N%U%)%s%H$H%5%$%:$N;XDj$G$9!#

TextWrap $O!"D9$$%F%-%9%H9T$N@^$jJV7rA*Br7^$9!#

TextLines $O!"%F%-%9%H%&%#%s%I%&$NFbIt%P%C%U%!$K2?9T(@^$jJV7J$7)J];}$9k+$r;XDj$7$^$9!#8=:_$O!"$3NCMr wgnuplot Fb$+$i$OJQ99$G$-$^$;$s!#

0J2<;2>H: **text-menu (p. 245)**!#

GraphFont $O!"%U%)%s%HL>$H%]%$%s%HC10L$N%U%)%s%H%5%$%:$N;XDj$G$9!#

0J2<;2>H: **graph-menu (p. 244)**!#

Wxt

wxt =PNO7A<0$O!"8D!9$N%&%#%s%I%&XN=PNO$r@8@.$7$^$9!#%&%#%s%I%&$O wxWidgets %i%$%V%i%j$G@8@.$5l^$9($3l, **wxt** $NL>A0$NM3Mh$G$9)!#<B:]$NIA2h$O!"2D %0%i%U%#C%/%i%$%V%i%j cairo $H!"J8;zNsG[CV/%l%s%@%j%s%0%i%$%V%i%j pango $,=hM}$7$^$9!#

=q<0:

```
set term wxt {<n>}
             {size <width>,<height>} {position <x>,<y>}
             {background <rgb_color>}
             {{no}enhanced}
             {font <font>} {fontscale <scale>}
             {title "title"}
             {linewidth <lw>}
             {dashlength <dl>}
             {{no}persist}
             {{no}raise}
             {{no}ctrl}
             {close}
```

J#?t$NIA2h%&%#%s%I%&$b%5%]!<%H7F$$F! "**set terminal wxt** <**n**> H9lPHV9fn $NIA2h%&%#%s%I%&$X=PNO7^$9!#

%G%U%)%k%H$N%&%#%s%I%&?%$%H%k$O! "$3$N%&%#%s%I%&HV9f$K4p$E$$F$$^$9!#$=$N%?%$%H%k$O "title" %-!<%o!<%I$G$b; XDj$G$-$^$9!#

IA2h%&%#%s%I%&$O! "**gnuplot** $N=PNO7A<0$rJLJbNKJQ99$7$F$b; D$C$?$^$^$KJj$^$9!#$=$lrJD8kK$O! "$=$N%&%#%s%I%&$KF~NO%U%)!<%+%9$,$"$k>uBV$G'q' $rF~NO$9k+! "%&%#%s%I%&^%M!<%8%c$N%a%K%e!<$G **close** $rA*Br$9k+! "**set term wxt** <**n**> **close** H7F/$@$5$$!#

IA2hNN0h$N%5%$:$O%T%/%;%kC10L$GM?$($^$9!#%G%U%)%k%H$O 640x384 $G$9!#$=$l$K2C$($F! "%&%#%s%I%&$N<B:]$N%5%$:KO! "%D!<%k%P!<$d%F!<%?%P!<MQ$N%9%Z!<%9$hDI2C$5l^$9!#%&%#%s%I%&$N%5%$:$rJQ99$9$k$H! "IA2h%0i%U$b%&%#%s%I%&$N?7$7$$%5%$:$KTC$?$j9g$&$h$&$K$9$0$K?-=L$5l^$9!#B>$NBPOC7?=PNO7A<0$H0c$$! "**wxt** =PNO7A<0$O%U%)%s%H! "@~I}$b4^aFIA2hA4BN$r?-=L$7$^$9$,! "A4BN$N%"%9%Z%/%HHf$C0lDj$KJ]CF! "6u$$?%9%Z!<%9$O3%?'$GEIjDY7$^$9!#$=$N8e **replot** $H%?%$%W9k$+%?!<%_%J%k%D!<%k%P!<$N **replot** %"%$%3%s$r%/%j%C%/9k$+?7$?$K **plot** %3%^%s%I$rF~NO9k$H! "$=$N?7$7$IA2h$G$O40A4$K$=$N%&%#%s%I%&$K9g$o$;$il^9,! "%U%)%s%H%5%$:$d@~I}O=l>lN%G%U%)%k%H$K%j%;%C%H$5l^$9!#

position %*%W%7%g%s$OIA2h%&%#%s%I%&$NOLCV$r@_Dj$9kN$K; H$($^$9!#3l$O%3%^%s%I **set term** 8e$N:G=i$NIA2hKN$_E,MQ$5l^$9!#

8=:_$NIA2h%&%#%s%I%&(**set term wxt** <**n**> $GA*Br$5l?bN) $OBPOCE*$G$=$N5sF0$O! "B>$N=PNO7A<0$H6&DL$G$9!#>\:Y$O! "0J2<;2>H: **mouse (p. 140)**!#$=$lKCDI2C$N%"%$%3%s$b$$/D+D$$F$$^9,! "$=$liO$=$l<+BN$,@bL@E*$JbNKJCF$$kO:$G$9!#

3N=PNO7A<0$O! "3HD%J8; zNs=hM}%b!<%I (enhanced text mode) $r%5%]!<%H$7$F$$F! "%U%)%s%H$d=q<0%3%^%s%I(>eIU! "2<IUJI) $r%i%Y%k$dB>$NJ8; zNs$KKd$a9~$'3H$,$G$-$^$9!#3HD%J8; zNs=hM}%b!<%I$N=q<0$OB>$N gnuplot $N=PNO7A<0$H6&DL$G$9!#>\:Y$O! "0J2<;2>H: **enhanced (p. 25)**!#

<font> $O "FontFace,FontSize" $N7A<0$G! "FontFace $H FontSize Hr%3%s%^$GJ,N%7F0lDNJ8; zNs$H7F=q$-$^$9!#FontFace $O! "'Arial' $N%h&$JDL>o$N%U%)%s%HL>$G$9!#FontFace $rM?$(J>$19g$O! "wxt =PNO7A<0$O'Sans' $r; HMQ$7$^$9!#FontSize $O! "%]%$%s%HC10L$N%U%)%s%H%5%$:$G$9!#FontSize $rM?$(J>$19g$O! "wxt =PNO7A<0$O10 %]%$%s%H$r; HMQ$7$^$9!#

```
Nc:
   set term wxt font "Arial,12"
   set term wxt font "Arial" # %U%)%s%HL>$N$_JQ99
   set term wxt font ",12" # %U%)%s%H%5%$:$N$_JQ99
   set term wxt font "" # %U%)%s%HL>!"%U%)%s%H%5%$:$r%j%;%C%H
```

%U%)%s%H$CDL>o$N%U%)%s%H%5%V%7%9%F%'$+$i<hF@7^$9!#MS-Windows >e$G$O%3%s%H%m!<%k%Q%M%k$N "Fonts" %(%s%H%j$G8!:w$5lkNG! "$=$3$K@_Dj$7$^$9!#Unix >eGO! "%U%)%s%H$O "fontconfig" $,=hM}$7$^$9!#

J8; zNs$N%l%$%"%&H$K; HMQ$5lk pango %i%$%V%i%j$O utf-8 $r4pK\$H7F$$$^9N$G! "wxt =PNO7A<0$G$O% (s%3!<%G%#%s%0$r utf-8 K9kI,MW,$"$j$^$9!#%G%U%)%k%H$NF~NO% (s%3!<%G%#%s%0$O! "%7%9%F%'$N 'locale' Khj^$9!#B>$N% (s%3!<%G%#%s%0$r; HMQ7?$>$19g$O! "$=lr gnuplot KCNi$;$kI,MW$,$"j^$9!#>\:Y$O! "0J2<;2>H: **encoding (p. 121)**!#

pango $O! "unicode %^%C%T%s%0$G$J$$%U%)%s%HKBP7$FOM=4|$;$L7k2L$rM?$($k$+$b7l$^$;$s! #Nc$ ($P Symbol %U%)%s%H$KBP7FO! "wxt =PNO7A<0$O! "J8; z%3!<%I$r unicode $KJQ4 9$9k?aK http://www.unicode.org/ $G Ds6!$5lk%^%C%T%s%0$rMxMQ$7$^$9!#pango $O! "$=$NJ8; z$r4^$'%U%)%s%H$r8+D1k?aK"J?$N Symbol

%U%)%s%H$r8!:w$7!"$=$7$F DejaVu %U%)%s%H$Nh&$K!"I}9-$/ unicode $r%+%P!<$9$kB>$N%U%)%s%H$rC5$9!"$H $$C$?:GA1$N:n6H$r9T$*$&$H7^$9!#$J$*!"'the Symbol font" $O!"Acrobat Reader $H0l=o$K"SY____.PFB" H7$FG[I[$5$1$F$$$k Adobe Symbol %U%)%s%HG"kH2r<a$5$1k3HKCm0U7F$/$@$5$$!#3NBeoj$K!" OpenOffice.org $H0l=o$K"opens__.ttf" H7$FG[I[$5$1$k OpenSymbol %U%)%s%H$,F1$8J8;z$rDs6!$7$F$$^ $9!#Microsoft $b Symbol %U%)%s%H("symbol.ttf") $rG[I[$7$F$$^9,!"$3$1$C0[$J$kJ8;z%;%C%H$KJC$F$$ $F!"$$$/D+$O7g$1$F$$^$9$7!"$$/D+$O?t<05-9f$KJQoCF7$^$C$F$$^$9!#$"J?$N%G%U%)%k%H$N@_Dj GJsi$+$NLdBj$,5/$-$?>19g(Nc$($P%G%b%9%/%j%W%H enhancedtext.dem $,$Acs$HI=<($5$1$J$$H$$C$?>19g) $O!"Adobe $+ OpenOffice $N Symbol %U%)%s%H$r%s%9%H!<%k7F!"Microsoft $N Symbol %U%)%s%H$r:o=|7J$$H$$1$J$$+b7$1$^;$s!#'windings" Nh$&$JB>$NHsI8='$N%U%)%s%HGbF0:n9k3H$,Js9p$5 1F$$^$9!#

IA2h$N%l%s%@%j%s%0$O!"%D!<%k%P!<$GBPOCE*$KJQ99G-$^$9!#2DG=$J8B$j:G$bNI$$=PNC$r@8@.$9k?aK3N %l%s%@%j%s%0$O!"%"%s%A%(%$%j%"%9!"%*!<%P!<%5%s%W%j%s%0!"%R%s%F%#%s%0$N3$D$N5!9=$r;}CF$$^$9!#%"%s %A%(%$%j%"%9$O!"?eJ?$d?bD>GJ$@~$N3ji+$JI=<($r2DG=K7$^$9!#*!<%P!<%5%s%W%j%s%0$O!"%"%s%A%(%$ %j%"%9HAHG%T%/%;%khj$b>.$5$$5%$%:$G$N@:EY$rDs6!$7!"gnuplot $,Hs@0?t:BI8$ND>@~$r=q$1kh$&$K$J j^$9!#$3$1lO"BP3QJ}8~$ND>@~(Nc$($P'plot x') $,:81&$KMI1kNrHr1^$9!#%R%s%F%#%s%0$O!"%*!<%P!< %5%s%W%j%s%0KhCF0z$-5/$3$5$1$k?eJ?!"?bD>J}8~$N@~J,N\$+7rHr1^$9!#$3$N=PNO7A<0$O!"$3$1iN D>@~$r@0?t:BI8$KB7$(!"$=1Khj!"1 %T%/%;%kI}$ND>@~$CK\Ev$K1 $D(1 Dh$jB?$/$b>/J/$bJ)$N%T %/%;%k$GIA2h7^$9!#

%G%U%)%k%HGO!"IA2h$,9T$cl?H-$K%&%#%s%I%&$C%G%9%/%H%C%W$N0lHV>e(:GA0LL)$KI=<($5$1$^$9!#$3$1$O!" %-!<%o!<%I"raise" $G@)8f$G$-$^$9!#%-!<%o!<%I"persist" $O!"$9YF$NIA2h%&%$%s%I%&$rL@<(E*$KJD8J$S 4V$O!"gnuplot $,=*N;$7$J$$h$&$K7^$9!#:G8e$K!"%G%U%)%k%HGO<space> %-!<$Ognuplot %3%s%=!<%k%&%# %s%I%&$r>e$K>e$2!"'q' $OIA2h%&%#%s%I%&$rJD8^$9!#%-!<%o!<%I"ctrl" $O!"$=1i$N%-!<3d$jEvFr!"$=$1 $>$1<ctrl>+<space> $H<ctrl>+'q' $KJQ99$7$^$9!#$3$1iN3DN%-!<%o!<%I(raise, persist, ctrl) $O!"@_ Dj%@%$"%m%O>eNdjHjG$b@_Dj$7!"5-21$5$;k3H,G-$^$9!#

X11

=q<O:

```
set terminal x11 {<n> | window "<string>"}
                 {title "<string>"}
                 {{no}enhanced} {font <fontspec>}
                 {linewidth LW}
                 {{no}persist} {{no}raise} {{no}ctrlq}
                 {{no}replotonresize}
                 {close}
                 {size XX,YY} {position XX,YY}
set terminal x11 {reset}
```

J#?t$N%0%i%UIA2h%&%#%s%I%&$r%5%]!<%H7F$$$^$9!#**set terminal x11** <**n**> $OHV9fn $NIA2h%&%#%s%I%&$K =PNO7^$9!#n $,0 GJ1l$P!"%?%$%H%k$,L@<(E*$K;XDj5l$F$$$J1lP=$NHV9f$,%&%#%s%I%&%?%$%H%k$H 7FD1il!"%"%$%3%s$K$O **Gnuplot** <**n**> $H%i%Y%kIU$1$5$l$^$9!#8=:_M-8z$J%&%#%s%I%&$O%+!<%=%k5-9f $NUQ2=$G6hJLG-$^$9(%G%U%)%k%H%+!<%=%k$+$i==;z%+!<%=%k$X)!#

x11 =PNO7A<0$O!"30It$N%"%W%j1!<%7%g%sKhCF@8@.$5$1$F$$$kX $N%&%#%s%I%&$NX ID (16 ?JI=5-) $r%* %W%7%g%s **window** $N8e$KJ8;zNsH7$F;XDj$9k3HG!"$=$N%&%#%s%I%&$H@\B3$G$-$^$9!#X $OJ#?t$N%/%i%$$ %"%s%H$K%$%Y%s%HButtonPress $NA*Br$rG'aJ$$?$a!"gnuplot $=$N30It%&%#%s%I%&$r%3%s%F%J$H7F;HMQ$7 $^$9!#3NJ}K!Kh$j!"gnuplot $N%^%&95!G=$OHj3^1?IA2h%&%#%s%I%&FbGb:nF0$7$^$9!#

```
set term x11 window "220001e"
```

x11 =PNO7A<0$O!"MxMQ2DG=$J%U%)%s%H$N85$G3HD%J8;zNs=hM}%b!<%I(0J2<;2>H:**enhanced (p. 25)**) $r%5%]!<%H 7F$$$^$9!#J8;zNs$KKd$a9~$^$l!"MM!9$J8z2L$rM?$($k%U%)%s%H%5%$%:L?NaN?aK!"%G%U%)%k%H$Nx11 %U%) %s%H$,%9%1!<%i%V%k%U%)%s%HG"kI,MW,$"$j$^$9!#hC$F!"0J2<$N:G=iNNcO&$^$/$$$G7g$&$,!"2HV L\$NbN$O=$&GO$J$$$G7g$&!#

```
set term x11 enhanced font "arial,15"
set title '{/=20 Big} Medium {/=5 Small}'
```

```
set term x11 enhanced font "terminal-14"
set title '{/=20 Big} Medium {/=5 Small}'
```

gnuplot %I%i%$%P$,JL$J=PNO%I%i%$%P$KJQ99%5$lFb! "IA2h%&%#%s%I%&$O3+$$?$^$^KJj^$9! #IA2h%&%#%s%I%&$O! "$=$N%&%#%s%I%&$K%+! <%=%k$rCV$$FJ8;zq $r2!$9$+! "%&%#%s%I%&%^%M! <%8%c$N%a%K%e! <$N **close** $rA*Br$9lPJD8k3H$,$G$-$^$9! **#reset** $r<B9T$9lPA4FN%&%#%s%I%&$r0lEY$KJD8l$^$9! #$=$l$O<B:]$K%&%#%s%I%&$r4IM}$7$F$$k;R%W%m%;%9$r=*N;$7$^$9(b7 **-persist** $,;XDj$5lF$$J1l$P)! #%3%^%s%I **close** $O! "8D!9$NIA2h%&%#%s%I%&$rHV9f$r;XDj7FJD8kNK;H$&$3H,G-$^$9! #7+$7! "persist N?aK;DCF$$kh&$JIA2h%&%#%s%I%&$O **close** %3%^%s%IGOJD8k3HOG$-$^$;$s! #HV9f$r>JN,$7$F **close** 7?>19gKO8=:_M-8zSJIA2h%&%#%s%I%&rJD8$^$9! #

gnuplot $N30$K$"$k%I%i%$%P gnuplot_x11 $O! "%W%m%0%i%`$N%3%s%Q%$%k;~$KA*Br5l$?%G%U%)%k%H$N>l=j$,8!:w$5l^$9! #$3lO4D6-JQ?t GNUPLOT_DRIVER_DIR $r0[$J$k>l=j$HDj5A9k3H$GJQ99$G$-$^$9! #

IA2h%&%#%s%I%&$O **-persisit** %*%W%7%g%s$,M?$(il$F$$$J1l$P! "BPOC$N=*N;;~$K<+F0E*$KJD8il^$9! #

%*%W%7%g%s **persist** $H **raise** $O%G%U%)%k%H$G$O@_Dj$5lF$$^$;$s$,! "$=lO! "%G%U%)%k%H$NCM(persist == no $Graise == yes) $+! "%3%^%s%I%i%$%s%*%W%7%g%s -persist / -raise $N;XDj$+! "$^$?$OX $N%j%=! <%9CM$,;Hol$k! "$H$$$&3H$r0UL#$7$^$9! #[no]persist $+[no]raise $,;XDj$5lkH=lO%3%^%s%I%i%$%s%*%W%7%g%s$dX %j%=! <%9$N@_Dj$hjbM%@h5l$^$9! #3liN%*%W%7%g%s$N@_Dj$CD>AK8zNO$r;}$A$^$9NG! "4{$K5/F0$7$F$$$k%I%i%$%P$N5sF0$OJQ99%5$l$^$9! #%&%#%s%I%&$rA0LL$K=P$;$J$>19g$O! "0J2<;2>H **raise (p. 103)**! #

%*%W%7%g%s **replotonresize** (%G%U%)%k%H$GM-8z) $O! "IA2h%&%#%s%I%&$N%j%5%$%:;~$K%G! <%?$r:FIA2h$7$^$9! #3N%*%W%7%g%sJ7$@$H! "%"%9%Z%/%HHfNJQoiJ$3HBg$G$"$CFb! "%j%5%$%:8e$K%&%#%s%I%&$N0lItJ,$K7+IA2h5lJ2DG=@-$,$"j^$9! #$3$N%*%W%7%g%s$r;H$($P! "gnuplot $O3F%j%5%$%:%$%Y%s%HKh$K40A4$J:FIA2h$r9T$$^9N$G! "OHFb$r$h$je:No$K;H$CF/l^$9! #%j%5%$%:$N4V$N:FIA2hKh$k@x:_E*$JCPU XNIi2Y$,?4G[$GJ>19g! "3N%*%W%7%g%s$OIaDL$OK>$^$7$$bNG9! #:FIA2h$O! "%[%C%H%-!<'e' $d'replot' %3%^%s%I$G<jF0$G<B9T$9k3Hb2DG=$G$9! #

%*%W%7%g%s **title** "<**title name**>" $O8=:_$NIA2h%&%#%s%I%&$K! "$^$?$OHV9f$r;XDj$9lP$=$NHV9f$NIA2h%&%#%s%I%&$KBP9k%&%#%s%I%&?$%H%kL>$rDl$^$9! #$=$N%?$%H%k$,I=<(5l$k>l=j! "$^$?$OI=<(5lk+I&$+$O! ";HCF$$$kX $N%&%#%s%I%&^%M! <%8%c$K0MB8$7$^$9! #

%*%W%7%g%s size $O! "IA2h%&%#%s%I%&$N%5%$%:$r@_Dj9kNK;HMQG-$^$9! #3N%*%W%7%g%s$O! "$=$N8e$K@8@.9k%&%#%s%I%&N_KE,MQ5l^$9! #

%*%W%7%g%s position $O! "IA2h%&%#%s%I%&$N0lCV$r@_Dj$9kN$K;H$($^$9! #3N%*%W%7%g%s$O! "$=$N8e$K@8@.9k%&%#%s%I%&N_KE,MQ5l^$9! #

IA2h%5%$%:$H%"%9%Z%/%HHf$O! "**gnuplot** $N%&%#%s%I%&$r%j%5%$%:$9k3HG$bJQ99$G$-$^$9! #

@~$NI}$HE@$N%5%$%:$O **gnuplot** $N **set linestyle** $GJQ992DG=$G$9! #

=PNO%I%i%$%P **x11** $K4X$7FO! "**gnuplot** $O(5/F0;~$K)! "%3%^%s%I%i%$%s! "$^$?$O@_Dj%U%!%$%k$+$i! "geometry $d font, name JI$NDL>c$N X Toolkit %*%W%7%g%s$d%j%=! <%9$N;XDj$r<u$1IU1^$9! #$=li$N%*%W%7%g%sKD$$F$OX(1) %^%K%e%"%k%Z! <%8($d$=$l$HF1Ey$NbN)$r;2>H$7F/$@$5$$! #

B>Kb **x11** =PNO7A<0MQ$NB?$/$N **gnuplot** $N%*%W%7%g%s$,$"$j$^$9! #3liO **gnuplot** $r8F$VH-$K%3%^%s%I%i%$%s%*%W%7%g%sH7$F;XDj$9k+! "$^$?$O@_Dj%U%!%$%k".Xdefaults" $N%j%=! <%9$H7F;XDjG-$^$9! #3liO5/F0;~$K@_Dj$5lkNG! "**gnuplot** <B9T;~KOJQ99G-$^$;$s($**persist** $H **raise** 0J30$O)! #

X11 $N%U%)%s%H (x11_fonts)

=i4|5/F0;~$O! "%7%9%F%`$N@_Dj$+! "%f! <%6$N.Xdefaults %U%!%$%k$N@_Dj$+! "%3%^%s%I%i%$%s;XDj$+! "$N$$$:l+Kh$kX11 %j%=! <%9$KhC$F%G%U%)%k%H$N%U%)%s%H$,A*Br$5l^$9! #

Nc:

```
gnuplot*font: lucidasans-bold-12
```

?7$7$$%G%U%)%k%H$N%U%)%s%H$r! "gnuplot FbIt$+$ix11 %I%i%$%P$K0J2<Nh$&$K7$F;X<($9k3HbG-$^$9:

```
'set term x11 font "<fontspec>"'
```

$^$:x11 %I%i%$%P$O! "M?$($il?%U%)%s%H$N@5<0L>$rX %5! <%P$K?R$M$^$9! #3NLd$$9go;$,<:GT$7$?>19g! "<fontspec> $r"<font>,<size>,<slant>,<weight>" $H2r<a$7! "0J2<$N7A$N40A4$JX11 %U%)%s%HL>$r@8@.7h$&$H7^$9:

```
-*-<font>-<weight>-<s>-*-*-<size>-*-*-*-*-*-<encoding>
```

<font> $O%U%)%s%H$N4pK\L> (base name) (Nc: Times, Symbol)
<size> $O%]%$%s%H%5%$%: (;XDj$,J1lP%G%U%)%k%H$O 12)
<s> $O <slant>=="italic" Ji ‘i‘, <slant>=="oblique" Ji ‘o‘, $=$NB>$O ‘r‘
<weight> $OL@<(E*$K;XDj5llP ‘medium‘ $+ ‘bold‘!"$=$NB>$O ‘*‘
<encoding> $O8=:_$NJ8;z=89g$K4p$E$$F@_Dj(0J2<;2>H: ‘set encoding‘)

hC$F **set term x11 font "arial,15,italic"** $O(%G%U%)%k%H$Nencoding $@$H9l$P) -*-arial-*-i-*-*-15-*-*-*-*-*-iso8859-1 $KJQ49$5l^$9!#<size>, <slant>, <weight> ;XDj$O$$:lbI,?\$GO"j^$;$s!#<slant>$d<weight> $r;XDj$7J+C?>19g$O!"%U%)%s%H$5!<%P$,:G=i$K8+D1$?!"UQ<o$N%U%)%s%H$r<hF@$9k+b7l^$;$s!#%G%U%)%k%H$N%(%s%3!<%G%#%s%0$O!"BP1~9kX11 %j%=!<%9$r;H$C$F@_Dj$9k3HbG-$^$9!#Nc:

```
gnuplot*encoding: iso8859-15
```

x11 %I%i%$%P$O!"0lHLE*$JPostScript %U%)%s%HL>$bG'<1$7!"$=lHF1Ey$GM-8z$JX11 %U%)%s%H$+TrueType %U%)%s%H$KCV-49($^$9!#3l$HF1$8<j=g$,!"**set label** $NMW5a$Khk%U%)%s%H$N@8@.$G$b;H$olF$$$^$9!#$"J?$NgnuplotS, configure $N–enable-x11-mbfonts %*%W%7%g%srD1F%$%s%9%H!<%k$5l?bNJi!"%U%)%s%HL>$NA0$K"mbfont:" rD1k3H$G%^%k%A%P%$%H%U%)%s%H$r;XDj$9k3H,G-$^$9!#%U%)%s%HL>$rJ#?t;XDj$9$k8D$HbG$-$^9,!"$=$N>19g$O%;%_%3%m%s$G6h@Zj^$9!#%^%k%A%P%$%H%U%)%s%H$N%(%s%3!<%G%#%s%0$O locale $N@_Dj$K=>$$^9N$G!"4D6-JQ?tLC_CTYPE $rE,@Z$JCM(Nc$($P ja_JP.eucJP, ko_KR.EUC, zh_CN.EUC JI) KK@_Dj9kI,MW$,$"j^$9!#

Nc:

```
set term x11 font 'mbfont:kana14;k14'
      # 'kana14' $H 'k14' $OF|K\8l$N X11 font %(%$%j%"%9L>!"';'
      # $O%U%)%s%HL>$N6h@Z$j$G$9!#
set term x11 font 'mbfont:fixed,16,r,medium'
      # <font>,<size>,<slant>,<weight> 7A<0$b;HMQ$G$-$^$9!#
set title '(mb strings)' font 'mbfont:*-fixed-medium-r-normal--14-*'
```

F1$8=q<0$OX $N%j%=!<%9$G$N%G%U%)%k%H%U%)%s%H$N@_DjGbM-8z$G$9!#Nc:

```
gnuplot*font: \
    mbfont:-misc-fixed-medium-r-normal--14-*-*-*-c-*-jisx0208.1983-0
```

gnuplot $,–enable-x11-mbfonts $G%$%s%9%H!<%k5l$?>19g!"'mbfont:" rD1J$/Fb2 DNFCJL$JPostScript %U%)%s%HL>'Ryumin-Light-*', 'GothicBBB-Medium-*' (I8=`E*$JF|K\8lPS %U%)%s%H) $r;H$&3HbG$-$^$9!#

%3%^%s%I%i%$%s%*%W%7%g%s (command-line_options)

X Toolkit %*%W%7%g%s$K2C$(!"0J2<$N%*%W%7%g%s$, gnuplot $NN)$A>e$2;~$N%3%^%s%I%i%$%s$G!"$^$?$O%f!<%6$N%U%!%$%k".Xdefaults" Fb$N%j%=!<%9H7$F;XDj$G$-$^$9(**raise** $H **persist** $O **set term x11** [**no**]**raise** [**no**]**persist** KhCF>e=q$-$5lk3H$KCm0U$7F/$@$5$$):

‘-mono‘	%+%i!<%G%#%9%W%l%$>e$G6/(@)E*$KGr9uIA2h
‘-gray‘	%0%l%$%9%1!<%k$^$?$O%+%i!<%G%#%9%W%l%$>e$G$N%0%l%$%9%1!<%kIA2h(%G%U%)%k%HGO%0%l%$%9%1!<%k%G%#%9%W%l%$$OGr9uIA2h$r<u$1IU1k)
‘-clear‘	?7$7$$IA2h$rI=<($9$kA0$K(=V4VE*$K) 2hLI$r>C5n
‘-tvtwm‘	geometry %*%W%7%g%sKh$k0ICV$N;XDj$r!"2>A[%k!<%H%&%#%s%I%&Cf$N8=:_$NI=<(ItJ,KBP9$kAjBPE*$J0LCVK9$k
‘-raise‘	3FIA2h8e$KIA2h%&%#%s%I%&$r:GA0LI$X=P$9
‘-noraise‘	3FIA2h8e$KIA2h%&%#%s%I%&$r:GA0LI$X=P$9$3$HO7$J$$
‘-persist‘	gnuplot %W%m%0%i%\=*N;8e$bIA2h%&%#%s%I%&$r;D$9

>e5-$N%*%W%7%g%s$O%3%^%s%I%i%$%s>e$G$N;XDj=q<0$G!"'.Xdefaults" $K%j%=!<%9$H7F;XDj9kH-$O0[$J$k=q<0$r;H$$^$9!#

Nc:

```
gnuplot*gray:  on
gnuplot*ctrlq: on
```

gnuplot $OIA2h%9%?%$%k **points** $GIA2h$9$kE@$N%5%$%:$N@)8fKb!"%3%^%s%I%i%$%s%*%W%7%g%s (**-pointsize** <**v**>) $H%j%=!<%9 (**gnuplot*pointsize:** <**v**>) $rDs6!$7$F$$^$9!#CM**v** $OE@$N%5%$%:$N3HBgN (H7$F;H$o$l $k<B?tCM(0 < v <= 10) $G!"Nc$ ($P **-pointsize 2** $O%G%U%)%k%H$N%5%$%:$N2 G\!"**-pointsize 0.5** $OIaDL$N %5%$%:$NH>J,$NE@$,;Hol$^$9!#

-ctrlq %9%#%C%A$O!"IA2h%&%#%s%I%&$rJD8k%[%C%H%-!<$r **q** $+$i<**ctrl**>**q** $KJQ99$7$^$9!#3l$O!"**pause mouse keystroke** Kh$k%-!<%9%H%m!<%/$NJ]B85!G=$r;H$C$F$$k>l9gKO!"B>$N%"%k%U%!%Y%C%HJ8;z$HF1 MM$K**q** $rJ]B8$G$-$kh&KJkN$GM-MQ$G7g$&!#F1$8M}M3$G!"**-ctrlq** %9%#%C%A$O <space> %[%C%H%-!<$b <ctrl><space> KCV-49$ ($^$9!#

%+%i!<%j%=!<%9 (**color_resources**)

Cm0U: 3N%;%/%7%g%s$O!"gnuplot %P!<%8%g%s 5 HOBg$-$/$:$l$F$$$^$9!#x11 =PNO7A<0$C0J2<$N%j%=!<%9 ($3 3GO=$N%G%U%)%k%H$NCM$r< ($7$^$9)!"$^$?$OGr9u3,D4 (greyscale) $N%j%=!<%9$r;2>H7^$9!#%j%=!<%9$NCM $O%7%9%F%`>e$NX11 rgb.txt %U%!%$%k$K=q$+$l$F$$k?'L>!"$^$?$O16 ?J$N?';XDj(X11 $N%^%K%e%"%k$r;2>H) $+!"?'L>$H6/EY(0 $+$i1 $N4V$NCM) $r%3%s%^$G6h@ZC?CM$r;HMQ$G$-$^$9!#Nc$ ($P **blue, 0.5** $OH>J,$N6/EY $N@D!"$r0UL#7^$9!#

```
gnuplot*background: white
gnuplot*textColor: black
gnuplot*borderColor: black
gnuplot*axisColor: black
gnuplot*line1Color: red
gnuplot*line2Color: green
gnuplot*line3Color: blue
gnuplot*line4Color: magenta
gnuplot*line5Color: cyan
gnuplot*line6Color: sienna
gnuplot*line7Color: orange
gnuplot*line8Color: coral
```

3liK4X9k%3%^%s%I%i%$%s$N=q<0$O!"GX7J(bacground) $K4X$7FOC1=c$GDL>o$NX11 toolkit %*%W%7%g%s $N"-bg" $KD>@\BP1~$7$^$9!#B>NbNb!"A4$F0lHLE*$J%j%=!<%9$N>e=q$-%*%W%7%g%s"-xrm" $r;H$&3H$G@_ Dj$G$-$^$9!#

Nc:

GX7J?'$rJQ99$9kK$O

```
gnuplot -background coral
```

@~<o1 HVL\$N?'$r=q$-49$ (kK$O

```
gnuplot -xrm 'gnuplot*line1Color:blue'
```

3%?'3,D4%j%=!<%9 (**grayscale_resources**)

-gray $rA*Br$9kH!"**gnuplot** $O!"%0%l%$%9%1!<%k$^$?$O%+%i!<%G%#%9%W%l%$$KBP7F!"0J2<$N%j%=!<%9$r;2 >H7^$9($3$3$GO=$N%G%U%)%k%H$NCM$r<($7$^$9)!#%G%U%)%k%H$NGX7J?'$O9uG"k3HKCm0U7F$/$@$5$$!#

```
gnuplot*background: black
gnuplot*textGray: white
gnuplot*borderGray: gray50
gnuplot*axisGray: gray50
gnuplot*line1Gray: gray100
gnuplot*line2Gray: gray60
gnuplot*line3Gray: gray80
gnuplot*line4Gray: gray40
gnuplot*line5Gray: gray90
gnuplot*line6Gray: gray50
gnuplot*line7Gray: gray70
gnuplot*line8Gray: gray30
```

@~IA2h%j%=!<%9 **(line_resources)**

Cm0U: 3N%;%/%7%g%s$O!"gnuplot %P!<%8%g%s 5 HOBg$-$/$:$l$F$$$^$9!#**gnuplot** $OIA2h$N@~$NI}(%T%/%;%kC10L) $N@_Dj$N$?$a$K0J2<$N%j%=!<%9$r;2>H$7$^$9($3$3GO$=$N%G%U%)%k%HNCMr<(7^$9)!#0 $^$?$O1 $O:G>.$N@~I}$N1 %T%/%;%kI}$r0UL#7^$9!#2 $^$?$O3 NCMKhC$F%0%i%U%N3040Q$r2~A1G-$k>19gb"kG 7g$&!#

```
gnuplot*borderWidth: 1
gnuplot*axisWidth: 0
gnuplot*line1Width: 0
gnuplot*line2Width: 0
gnuplot*line3Width: 0
gnuplot*line4Width: 0
gnuplot*line5Width: 0
gnuplot*line6Width: 0
gnuplot*line7Width: 0
gnuplot*line8Width: 0
```

gnuplot $O@~IA2h$G;HMQ9kE@@~$N7A<0$N@_DjMQ$K0J2<$N%j%=!<%9$r;2>H$7$^$9!#0 $O<B@~$r0UL#7^$9!#2 7e$N10?J?t**jk**(**j** $H**k** $O1 $+$i9 $^$G$NCM)$O!"**j** 8D$N%T%/%;%k$NIA2h$K**k** 8D$N6uGr$N%T%/%;%k,B3$/%Q%?!<%s$N7+$jJV7+iJ$kE@@~$r0UL#7^$9!#Nc$($P'16' $O1 8D$N%T%/%;%k$N8e$K6 DN6uGr$,B3$/%Q%?!<%s$NE@@~$KJj$^$9!#5i$K!"4 7e$N10?J?tGh$j>\:Y$J%T%/%;%k$H6uGr$NNs$N%Q%?!<%s$r;XDjG-$^$9!#Nc $($P!"4441' $O4 DN%T%/%;%k!"4 DN6uGr!"4 DN%T%/%;%k!"1 DN6uGr$N%Q%?!<%s$r0UL#7^$9!#0J2<$N%G%U%)%k%H$N%j%=!<%9CM$O!"Gr9u%G%#%9%W%l%$!"$"$k$$$C%+%i!<$dGr9u3,D4(grayscale) %G%#%9%W%l%$>e$NGr9uIA2hK*1kCM$G$9!#%+%i!<%G%#%9%W%l%$$G$O dashed:off $,%G%U%)%k%H$KJC$F$$$^$9!#

```
gnuplot*dashed: off
gnuplot*borderDashes: 0
gnuplot*axisDashes: 16
gnuplot*line1Dashes: 0
gnuplot*line2Dashes: 42
gnuplot*line3Dashes: 13
gnuplot*line4Dashes: 44
gnuplot*line5Dashes: 15
gnuplot*line6Dashes: 4441
gnuplot*line7Dashes: 42
gnuplot*line8Dashes: 13
```

X11 pm3d %j%=!<%9 (pm3d_resources)

Cm0U: 3N%;%/%7%g%s$O!"gnuplot %P!<%8%g%s 5 HOBg$-$/$:$l$F$$$^$9!#E,@Z$Jvisual %/%i%9$H?'?t$rA*Br9kNO!"X11 %"%W%j1!<%7%g%sKHCF6l7/!"AgCHLq2p$J3$H$G$9!#$=$l$OX11 $,0[$J$k?<EY(depth) $N6 DNvisual 7?$r%5%]!<%H7F$$k$+$i$G$9!#

%G%U%)%k%HGO **gnuplot** O=$N%9%/%j!<%s$N%G%U%)%k%H$N visual $r;HMQ$7$^$9!#3djEvFk3HNG-$k?'?t$OA*Br5l$?visual %/%i%9$KhCFUQoj^$9!#12bit $rD6$($k?<EY$r;}$D visual %/%i%9>e$G$O!"gnuplot $O:GBg?'?t$G$"$k 0x200 (=512) ?'$G5/F0$7$^$9!#8bit $rD6$($k(12bit 0J2<$G) ?<EY$N visual %/%i%9$G$O:GBg?'?t$O 0x100 (=256) ?'!"8bit 0J2<$N%G%#%9%W%l%$$G$O:GBg?'$O 240 (16 ?'$O6J@~$N?'MQ$K<h$ilk) KJj^$9!#

gnuplot $O:G=i$K!">e$K=R$Y$?$h$&$J:GBg?'$r3d$jEvFh$&$H5/F0$7$^$9!#$3lK<:GT9kH=$N?'?t$O!" gnuplot $,$=$NA4It$r3djIU1k3H,G-k^$G!"1/2 $:$D8:i5l^$9!#**maxcolors** $r7+$jJV$7 2 $G3d$C$?7k2L!"**mincolors** hj$b>.5?t;zKJC?>19g!"**gnuplot** $O private %+%i!<%^%C%W$r;H$*$&H7$^$9!#3N>19g!"%&%#%s%I%&%^%M!<%8%c$O!"%]%$%s%?$,X11 %I%i%$%P$N%&%#%s%I%&$KF~k+=Pk+$G+%i!<%^%C%W$rB`Hr(swapping) 5;$k@UG$$r;}D3HKJj$^$9!#

mincolors $N%G%U%)%k%H$NCM$O maxcolors / (num_colormaps > 1 ? 2 : 8) $G!"num_colormaps $O gnuplot $,8=:_;HMQ$7$F$$$k%+%i!<%^%C%W$N?t$G!"3l$O!"x11 $N%&%#%s%I%&$,1 D@$13+$$$F$$$kh&$JDL>o$N>19g $O1 $G$9!#

J#?t$N(0[$J$k) visual %/%i%9$r!"0lDN%9%/%j!<%s>e$G%5%]!<%H$9kh$&$J%7%9%F%`$b$"$j$^$9!#$3$N$h$&$J%7%9%F%`GO!"gnuplot $K;XDj$7$?visual %/%i%9$r6/@)E*$K;H$o$;$kI,MW$,$"j^$9!#Nc$($P!"%G%U%)%k%H$N visual $, 8bit PseudoColor $@$1lI$b%9%/%j!<%s$O 24bit TrueColor $r%5%]!<%H$7$F$$$F`7m3AiNJ}$rA*Br$9Y-G"kh$&$J>19g$G$9!#

X %5!<%P$NG=NO$K4X9k>pJs$O%W%m%0%i%`**xdpyinfo** $G<hF@$G$-$^$9!#visual L>$O<!N&AN0lD,A*BrG-$^$9: StaticGray, GrayScale, StaticColor, PseudoColor, TrueColor, DirectColor!#$=$N X %5!<%P$,MW5a$5l?visual 7?$N0[$J$kJ#?t$N?<EY$r%5%]!<%H$7$F$$k>19g!"**gnuplot** $O:G$bBg$-$$$(:G?<$N)?<EY$N visual %/%i%9$rA*Br$7$^$9!#MW5a5l$?visual %/%i%9$,%G%U%)%k%H$N visual H"CF$$F!"$=$N7?$NJ#?t$N%/%i%9$,%5%]!<%H$7$F$$k>19g$O!"%G%U%)%k%H$N visual $,A*Br$5l^$9!#

Nc 8bit PseudoColor $N visual >e$G$O!"**gnuplot*maxcolors: 240**!"5Z$S**gnuplot*mincolors: 240** $H;XDj$9k3HG6/@)E*$K private %+%i!<%^%C%W$r;H$&$h$&$KG-$^$9!#

```
gnuplot*maxcolors: @0?t
gnuplot*mincolors: @0?t
gnuplot*visual: visual L>
```

X11 $NB>$N%j%=!<%9 **(other_resources)**

%G%U%)%k%HGO!"8=:_$NIA2h%&%#%s%I%&$NFbMF$O!"%&%#%s%I%&$N X %$%Y%s%H$K=>CF X11 %/%j%C%W\!<%I$K Aw$il^$9!#gnuplot*exportselection' $N%j%=!<%9$NCM$r 'off' $+ 'false' $H@_Dj$9k3HKhj3l$rL58z$KG-$^$9!#

%G%U%)%k%HGO!"J8;z$N2sE>$OB.$/$=lr9TJ&}K!$;,H$ol^9,!"GX7J?'KhCFO=$NIU6a$,1xlk3H$,$"j^$9!#$3l,5/3k>19g$O!"%j%=!<%9'gnuplot.fastrotate' $r 'off' K7F_F/$@$5$$!#

```
gnuplot*exportselection: off
gnuplot*fastrotate: on
gnuplot*ctrlq: off
```

Xlib

xlib %I%i%$%P$O X11 Windows System $r%5%]!<%H$7$F$$^$9!#$3$N%I%i%$%P$O gnuplot_x11 XNL?Na$r@8@.7^9,!"**set output** '<**filename**>' $r;XDj$9kH$=$lir%U!%$%k$K=q$-=P$7$^$9!#**set term x11** $O!"**set output "|gnuplot_x11 -noevents"; set term xlib** $HF1CM$G$9!#**xlib** KO**x11** $HF1$8%*%W%7%g%sNAHrM?$($k3H$,$G$-$^$9!#

Part V

%P%0 (Bugs)

%P%0% j%]!<%H$Oe-mail $Ggnuplot-bugs %a!<% j%s%0% j%9%HXAwk$+!"$^$?$OSourceForge $Ngnuplot %&%'%V%5 %$%HK=$NJs9p$rE j9F7F$/$@$5$$!#$=$N:]!"$"$J$?$,;HMQ7F$$k gnuplot $N%P!<%8%g%s$N40A4$J>pJs!"$=$7 $F2DG=$JiP$=$N%P%0$r<B>Z$9k%F%9%H%9%/% j%W%HrAwCF/$@$5$$!#DJ2<;2>H:**seeking-assistance (p. 19)**!#

CNil$F$$k@)8B (limitations)

do $d **while** %k!<%W$NCf3g8lFb$G%$%s%i%$%s%G!<%?(Nc: plot '-' ...) $r;H$&3HOG$-$^$;$s!#

IbF0>.?t7W;;Nc30(IbF0>.?tCM$,Bg$-9.$k($^$?$O>.$5$9$.$k)>l9g!"0 $G3d;;$7$?>l9g$J$I) $O!"%f!<%6Dj5A 4X?t$K$*$$FH/@8$9$k3H$,$"j^$9!#FC$K!"$$$/D+$N%G%b$G!"IbF0>.?t$NHO0O$r1[$($k?tCM$r@8@.$9k3$H $,5/$3kh$&$G$9!#%7%9%F%`$,$=$Nh&$JNc30$rL5;k9k(**gnuplot** O=Nh$&$JE@$rDj5A$G$-$J$$$b$N!"$H 8+J7$^$9) $+!"$^$?$O **gnuplot** $N<B9T$rCf;_9k$+$O!"%3%s%Q%$%k;~($"$k$$$O<B9T;~) $N4D6-$Khj$^$9!#

%,%s%^4X?t$H%Y%C%;%k4X?t$OJ#AG?t0z?t$r%5%]!<%H$7$F$$$^$;$s!#

";~9o" H7$F;XDj$5l?:BI8$O24;~$G@^jJV7^$9!#

G^2pJQ?t$N6J@~: **nohidden3d** $O!"A4BNE*$J@_DjG"$k **set hidden3d** $r8D!9$N%0%i%UKBP7$FLH=|$9k? aN%*%W%7%g%sG9$,!"$3lOG^2pJQ?t$N6J@~(parametric) KBP7FO5!G=7^$;$s!#%3%^%s%I **plot** Fb$N7+ jJV7(iteration) $O!"G^2pJQ?t$N6J@~KBP7FO5!G=7^$;$s!#

X11 =PNO7A<0: UTF-8 %U%)%s%H$NA*Br$,:$F;$G$9!#$9YF$Nx11 IA2h%&%#%s%I%&$KBP7F!"0lEYKO1 DN %+%i!<%Q%l%C%HN_$,M-8z$G$9!#$3lO!"0[Jk%Q%l%C%H$r;HMQ$9$kIA2h$r4^s@multiplot GOx11 >eGO @5$7$/I=<(5l$J$$$3Hr0UL#7^$9!#

Qt =PNO7A<0: 3<!85GNB?3Q7A$d6JL1$N2sE>O+JjCY/Jk2DG=@-$,$"j^9,!"3l$OQt $N%l%s%@%j%s %0%b!<%I(Qt $N@bL@=q$r;2>H7F$/$@$5$$) $K6/$/0MB8$7$^$9!#

30It%i%$%V%i%j (External libraries)

30It%i%$%V%i%j GD (PNG/JPEG/GIF %I%i%$%P$G;HMQ): %P!<%8%g%s 2.0.33 $^$G$N libgd KO!"Adobe $N Symbol %U%)%s%H$NJ8;z$N^%C%T%s%0$K4X9k$$/D+$N%P%0$,$"$j$^$9!#^$?!"%"%s%A(%$%j%"%9$5$l$?@~J, $,%-%c%s%P$N>e$N3Q$H8rok>l9g$K!"%i%$%V%i%j$,%;%0%a%s%F!<%7%g%s%U%)%k%H$r0z$-5/$9$3Hb$"$j$^$9!#

30It%i%$%V%i%j PDFlib (PDF %I%i%$%P$G;HMQ): gnuplot $O libpdf $N%P!<%8%g%s 4, 5, 6 $N$$:l+$r%j%s%/ G-$^$9!#7+$7!"$3li$O%P!<%8%g%sKhCF%Q%$%W5l$?F~=PNO$N=hM}$,0cCF$$$^9N$G!"%Q%$%W$r;H$C $F PDF $r=PNO$9$k gnuplot %9%/% j%W%H$O!"PDFlib $N"$k%P!<%8%g%sG@$1$7$+$Acs$HF0$+$J$$+b7$l $^$;$s!#

30It%i%$%V%i%j svgalib (linux, vgadl %I%i%$%P$G;HMQ): 3l$Ognuplot $, root $Ksetuid (7y!) 5lk3Hr MW5a7^$9$7!"%S%G%*%+!<%I$dX11 $G;HMQ$5lk%0%i%U%#%C%/%I%i%$%P$KFCM-$NB?/$N%P%0$,$"j^$9!#

9q:]2=(%m%1!<%k$N@_Dj): gnuplot $O!"F~=PNO$N?t!";~9o!"F|IUJ8;zNs$N%m%1!<%k$K0MB8$7$?=q<0$N@)8f$r!" C %i%s%?%$%`%i%$%V%i%j$K4^$^lk setlocale() $rMQ$$F9T$&$N$G!"%m%1!<%k$NM-8z@-$d!"%m%1!<%k5!G=$N%5 %]!<%H$N%l%Y%k(Nc$($P?t;z$N37eKh$N6h@Z$jJ8;zJI) JI$O!"$"J?$N%3%s%T%e!<%?$,Ds6!9k9q:]2=$N %5%]!<%H$NEY9g$$$K0MB8$7$^$9!#

Part VI

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