gnuplot Plotting from the shell

CONCEPTS

Settings stick until changed: set options stay active for later plots. Use unset <option> or reset to clear them.

Data / function file or expression
↓ set ...
Settings terminal, labels, ranges
↓ plot
Plot using, with, title
↓ set output
Output window, png, svg, pdf

Always set terminal first, then output, then plot. Call unset output at the end so the file is flushed and closed.

RUNNING

gnuplot
Start interactive prompt

gnuplot *<script.gp>*
Run a script file

gnuplot -persist -e "plot sin(x)"
Plot and keep the window

gnuplot -e "*<cmds>***"** *<script.gp>*
Run a command, then a script

gnuplot -c *<script.gp> <args>*
Script with arguments

gnuplot -
Read commands from stdin

help *<topic>*
Built-in help

quit
Leave gnuplot

PLOTTING

plot *<expr>*
Plot a function of x

plot '*<file>***'**
Plot a data file (column 1 vs 2)

plot '*<file>***' using 1:3**
Pick columns for x and y

plot '*<file>***' using 1:($2*2)**
Compute with column values

PLOTTING (cont.)

plot '*<f1>***', '***<f2>***'**
Several datasets in one plot

plot *<a>*, *<b>* **title '***<name>***'**
Name a curve in the legend

plot [*<x0>***:***<x1>***] [***<y0>***:***<y1>***]** *<expr>*
Set ranges for this plot

plot '*<file>***' using 1:2:3 with yerrorbars**
Error bars

plot '< *<cmd>***'**
Plot output of a shell command

STYLES

with lines
Join points with lines

with points
Points only

with linespoints
Lines and points

with boxes
Bars

linewidth *<n>*
Line thickness (lw)

linecolor rgb '*<color>***'**
Colour by name or #hex (lc)

set style data lines
Default style for data

unset key
Hide the legend

set grid
Show grid lines

AXES AND LABELS

set title '*<text>***'**
Plot title

set xlabel '*<text>***'**
X axis label

set ylabel '*<text>***'**
Y axis label

set xrange [*<min>***:***<max>***]**
Fix the x range

set yrange [*<min>***:*]**
Fix min, auto max

set logscale y
Log scale on y

AXES AND LABELS (cont.)

set xdata time
Treat x as dates

set timefmt '%Y-%m-%d'
Date format of input

set datafile separator ','
Read CSV

OUTPUT

set terminal png size 800,600
Raster image

set terminal pngcairo size 800,600
Image with cairo (nicer text)

set terminal svg size 800,600
Vector SVG

set terminal pdfcairo size 6in,4in
PDF output

set output '*<file>***'**
Write output to a file

unset output
Close the output file

FIT AND STATS

f(x) = a*x + b
Define a function

a = 1; b = 0
Set initial parameter values

fit f(x) '*<file>***' using 1:2 via a,b**
Least-squares fit

plot '*<file>***', f(x)**
Show data and fit together

stats '*<file>***' using 2**
Mean, min, max, sigma

MULTIPLOT AND SCRIPTING

set multiplot layout 2,2
Grid of plots

unset multiplot
Finish the multiplot

do for [i=1:3] { *<cmds>* **}**
Loop over commands

reset
Restore default settings