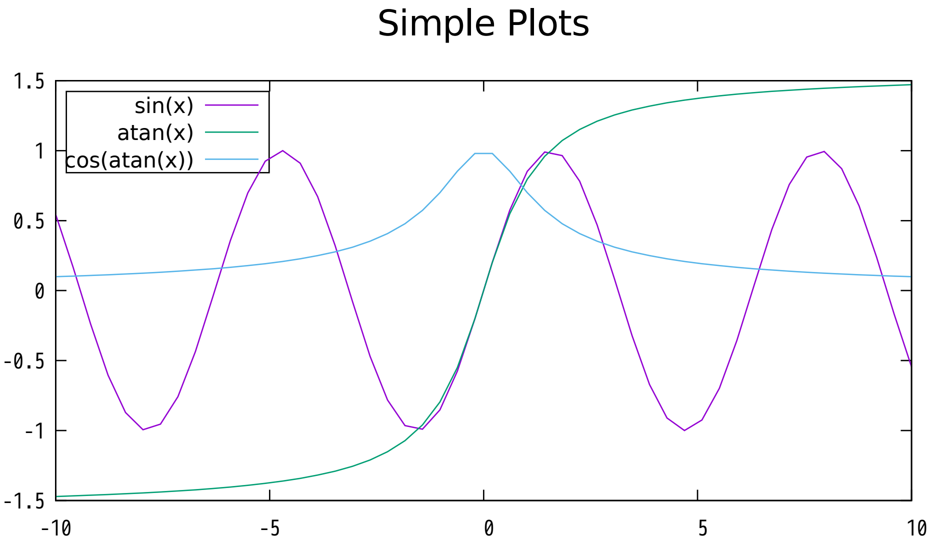
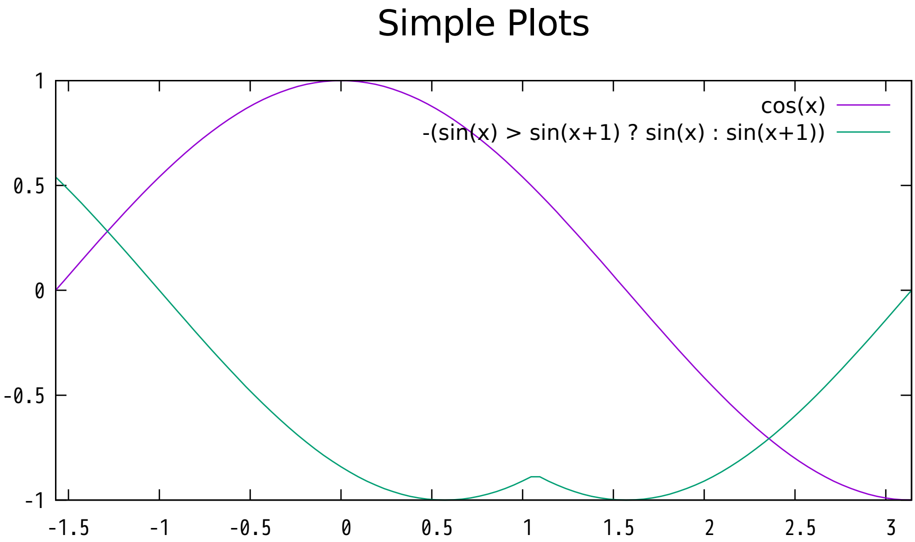
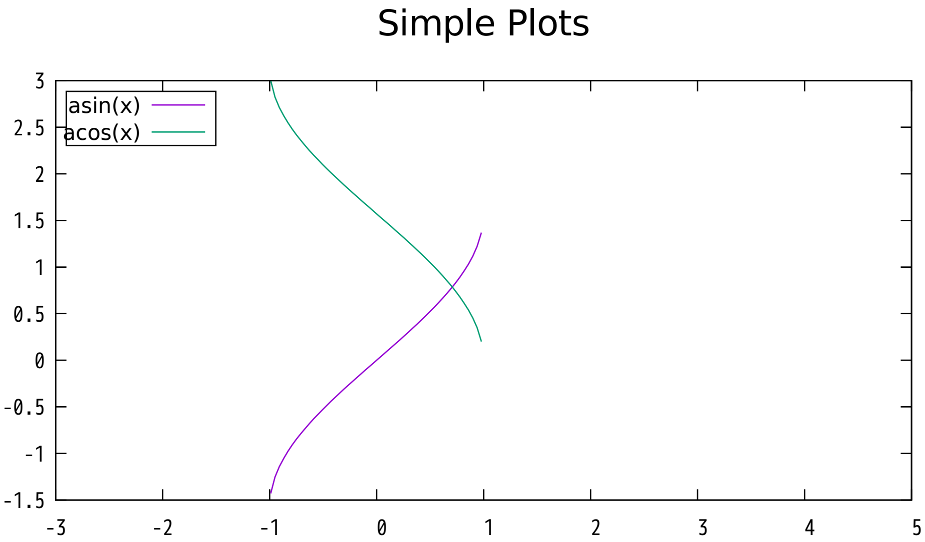


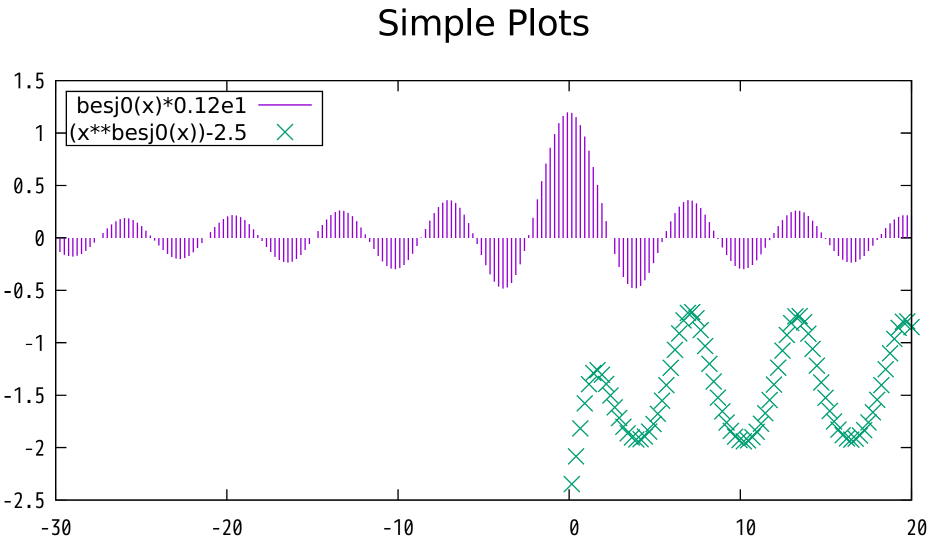
Simple Plots
sin(x)
atan(x)
cos(atan(x))
1.5
1
0.5
0
-0.5
-1
-1.5
-10
-5
0
5
10

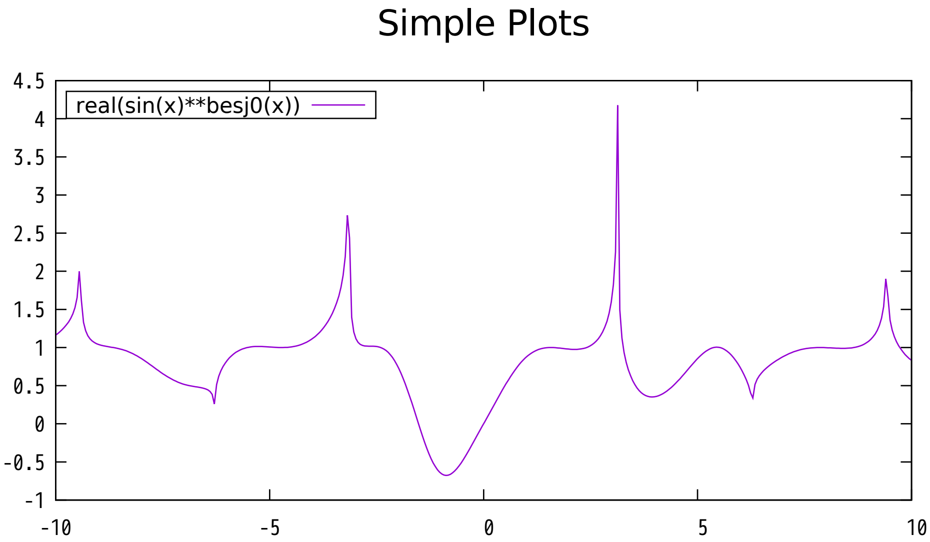


Simple Plots
cos(x)
-(sin(x) > sin(x+1) ? sin(x) : sin(x+1))
1
0.5
0
-0.5
-1
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
3

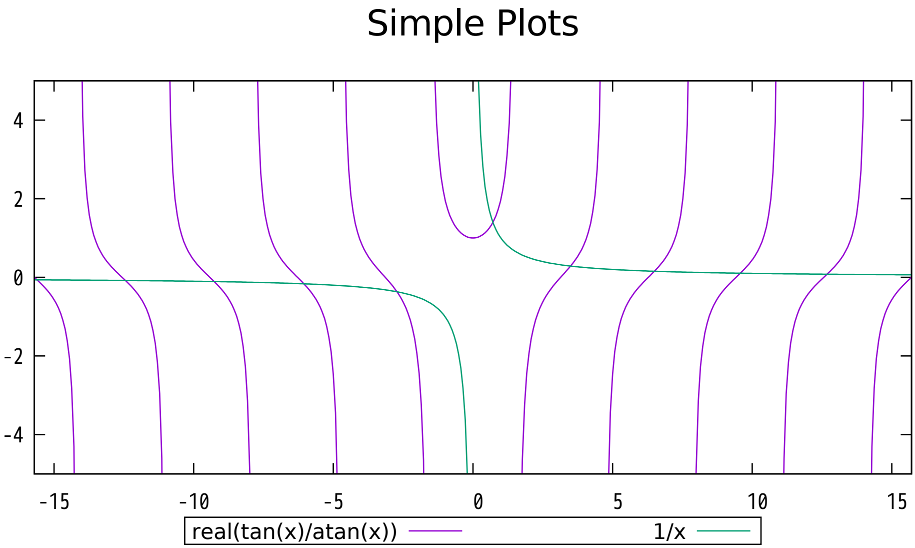


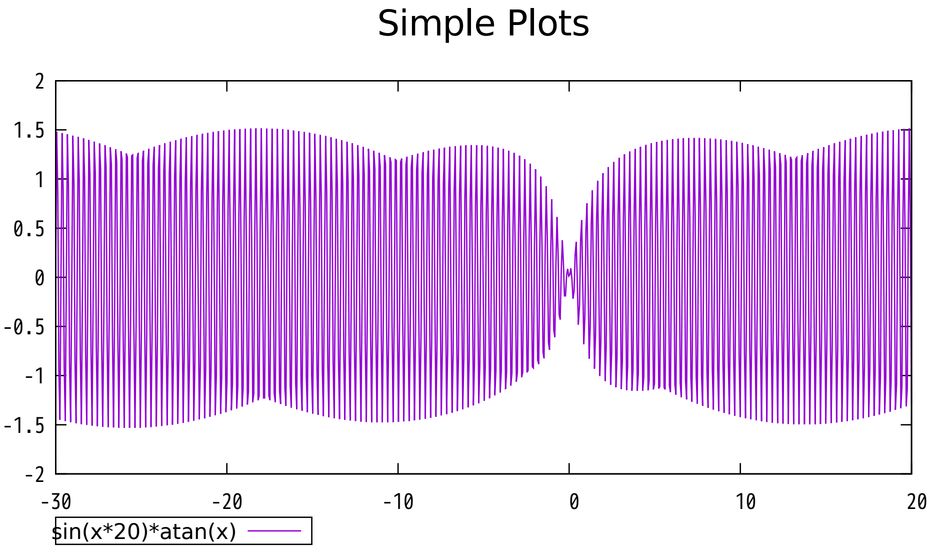
Simple Plots
asin(x)
acos(x)
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-3
-2
-1
0
1
2
3
4
5

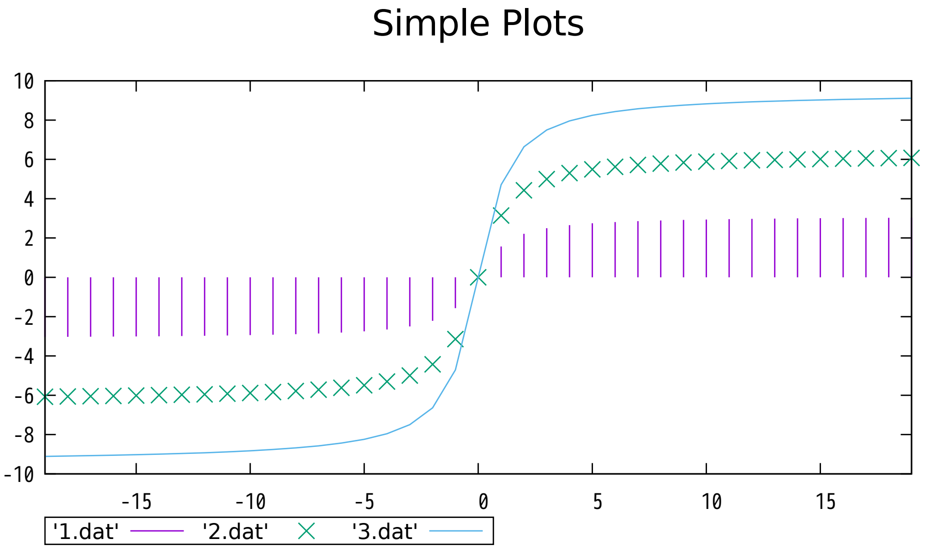

Simple Plots
besj0(x)*0.12e1
(x**besj0(x))-2.5
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-30
-20
-10
0
10
20



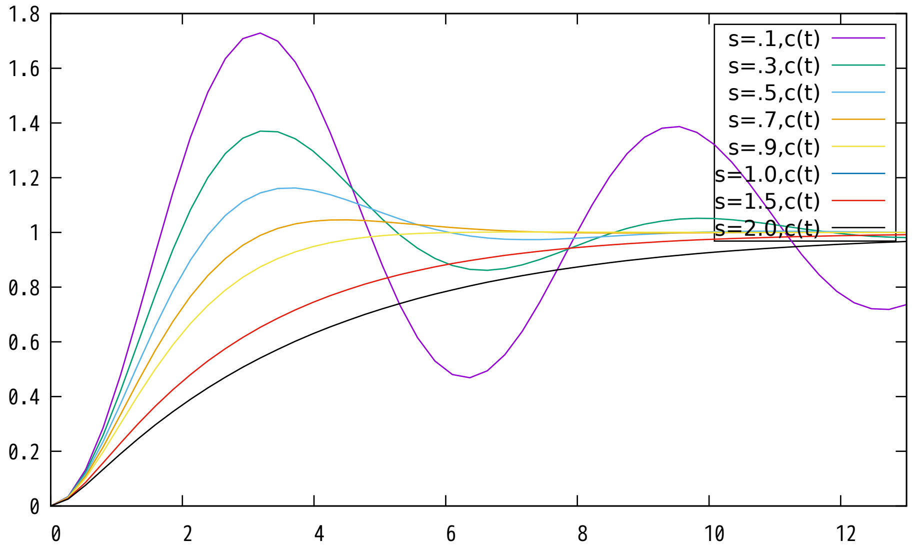
Simple Plots
real(sin(x)**besj0(x))
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-10
-5
0
5
10


Simple Plots
4
2
0
-2
-4
-15
-10
-5
0
5
10
15
real(tan(x)/atan(x))
1/x

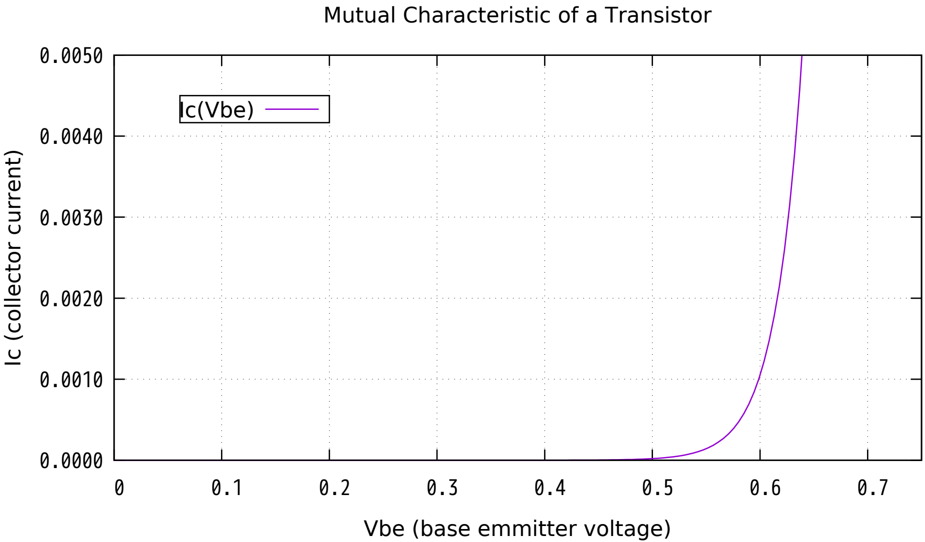

Simple Plots
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-30
-20
-10
0
10
20
sin(x*20)*atan(x)



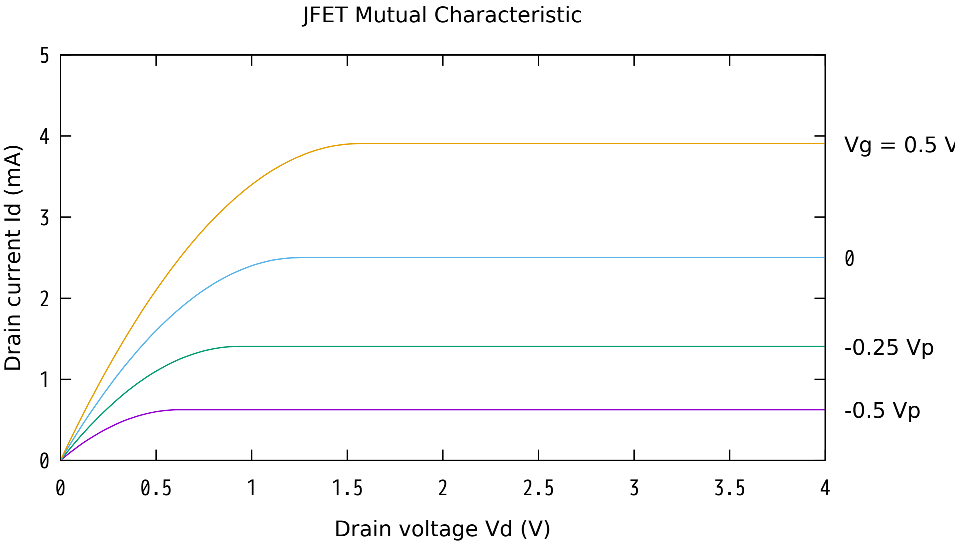
Simple Plots
10
8
6
4
2
0
-2
-4
-6
-8
-10
-15
-10
-5
0
5
10
15
'1.dat'
'2.dat'
'3.dat'

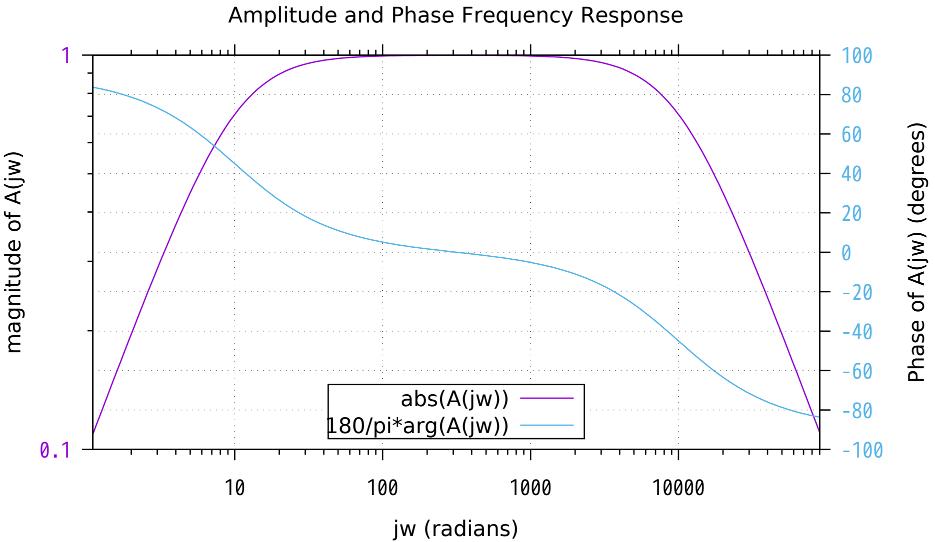


s=.1,c(t)
s=.3,c(t)
s=.5,c(t)
s=.7,c(t)
s=.9,c(t)
s=1.0,c(t)
s=1.5,c(t)
s=2.0,c(t)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
2
4
6
8
10
12

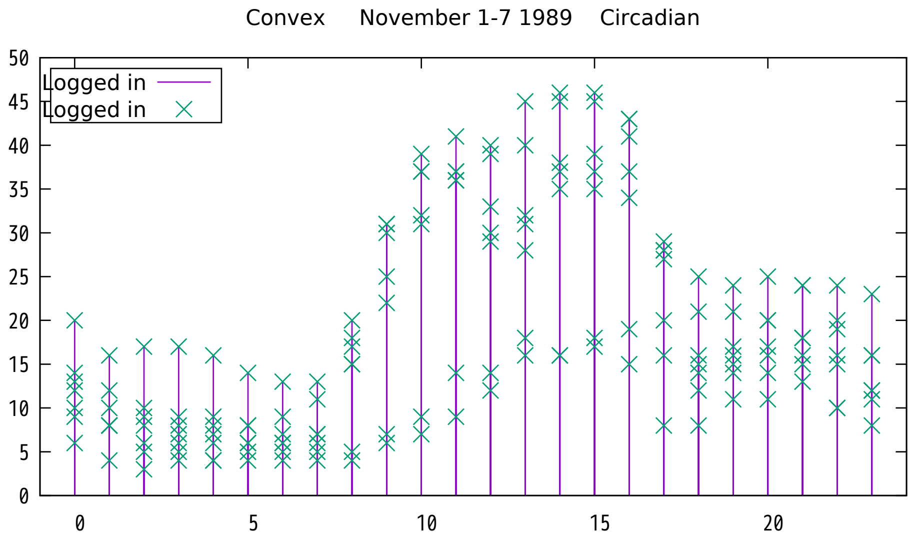


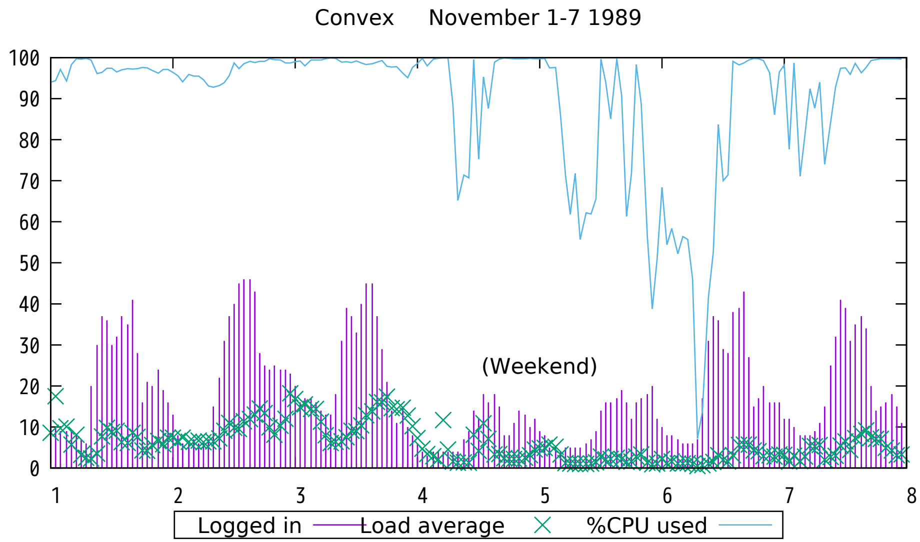
Mutual Characteristic of a Transistor
Ic(Vbe)
Ic (collector current)
0.0050
0.0040
0.0030
0.0020
0.0010
0.0000
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Vbe (base emmitter voltage)


JFET Mutual Characteristic
Drain current Id (mA)
Drain voltage Vd (V)
Vg = 0.5 V
0
-0.25 Vp
-0.5 Vp
0
1
2
3
4
5
0
0.5
1
1.5
2
2.5
3
3.5
4



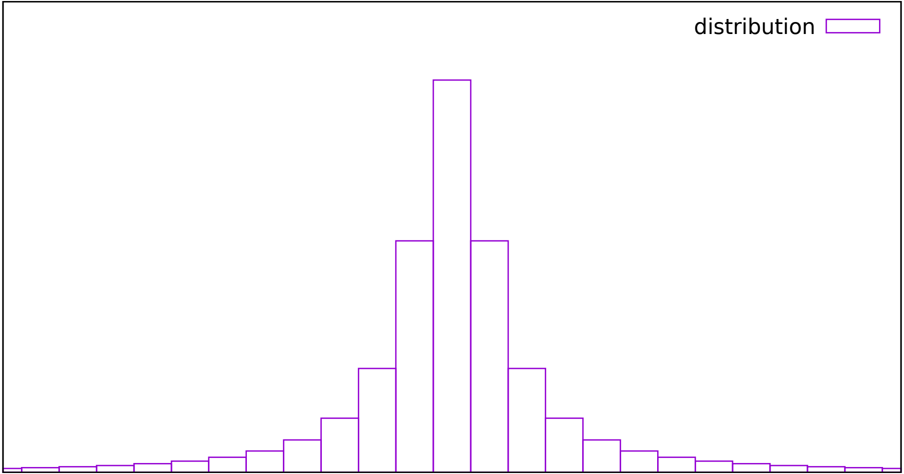
Amplitude and Phase Frequency Response
magnitude of A(jw)
1
0.1
Phase of A(jw) (degrees)
100
80
60
40
20
0
-20
-40
-60
-80
-100
10
100
1000
10000
jw (radians)
abs(A(jw))
180/pi*arg(A(jw))


Convex November 1-7 1989 Circadian
Logged in
Logged in
0
5
10
15
20
25
30
35
40
45
50
0
5
10
15
20

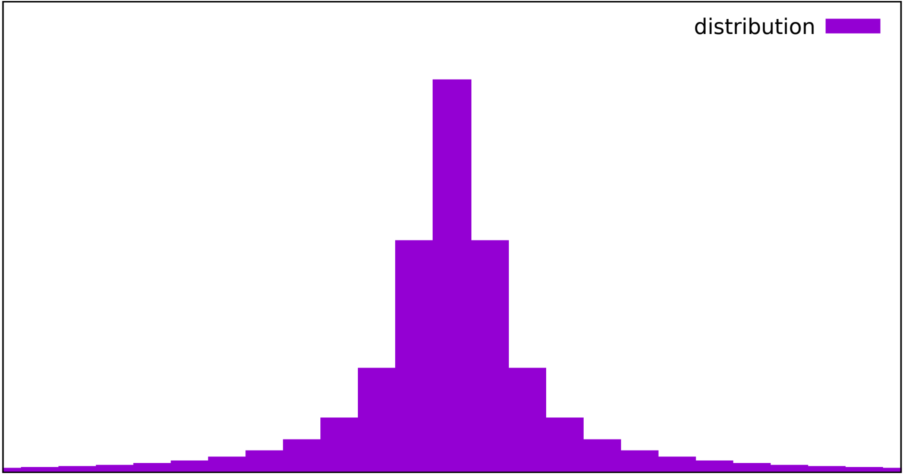


Convex November 1-7 1989
100
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
(Weekend)
Logged in
Load average
%CPU used

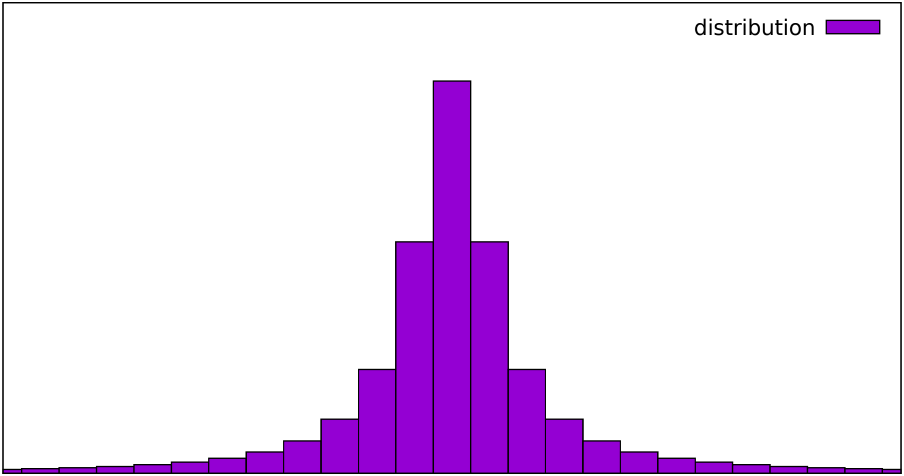
A demonstration of boxes with default properties

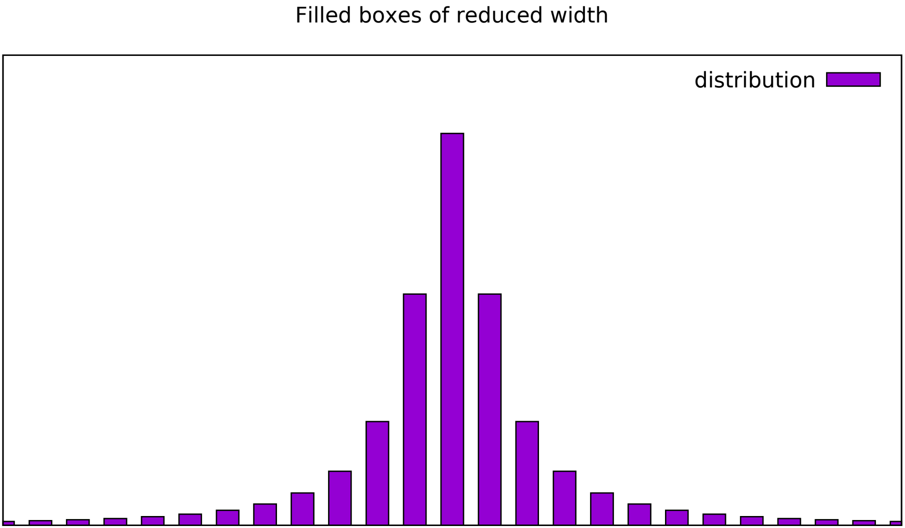


A demonstration of boxes with style fill solid 1.0

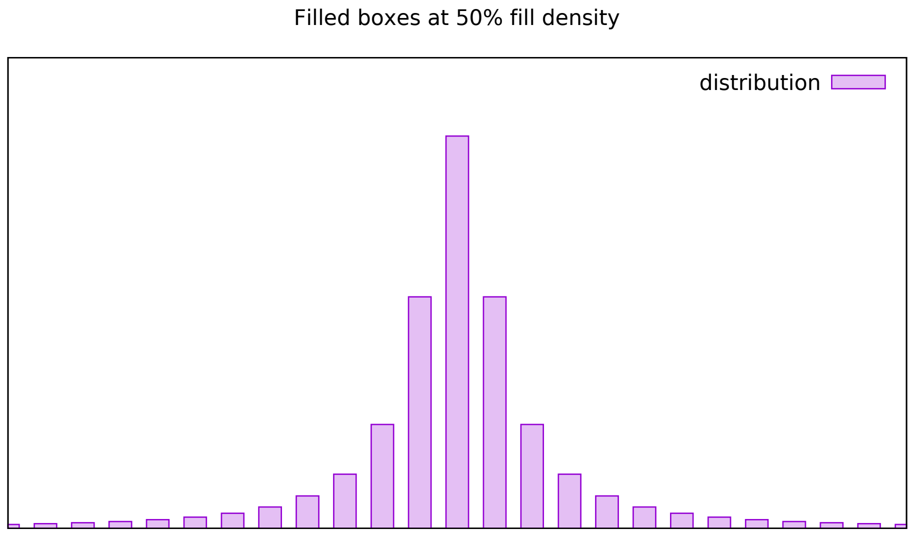


A demonstration of boxes with style fill solid border -1

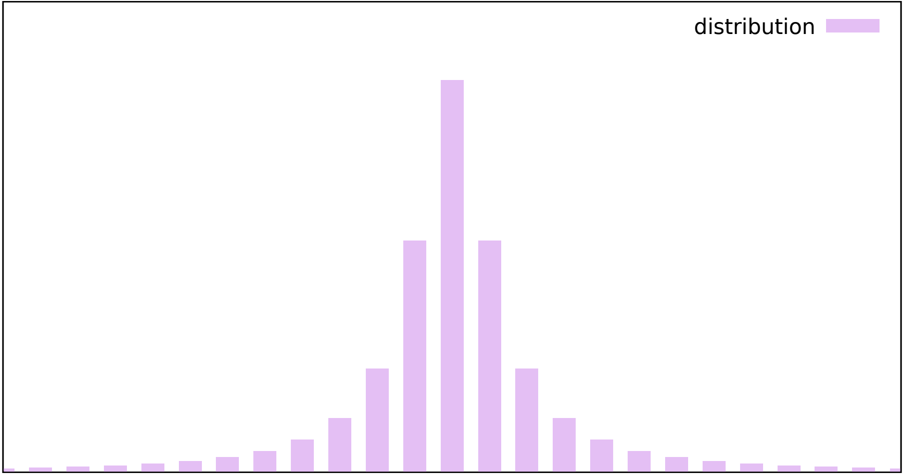


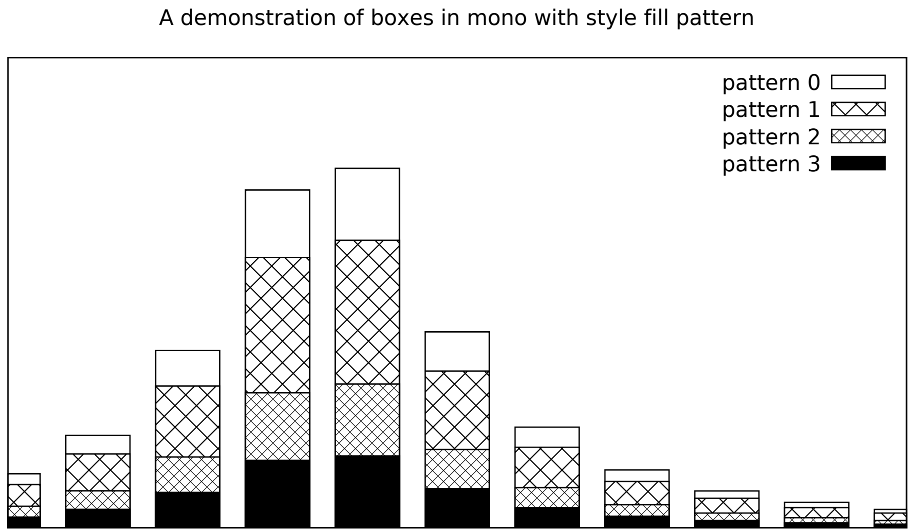


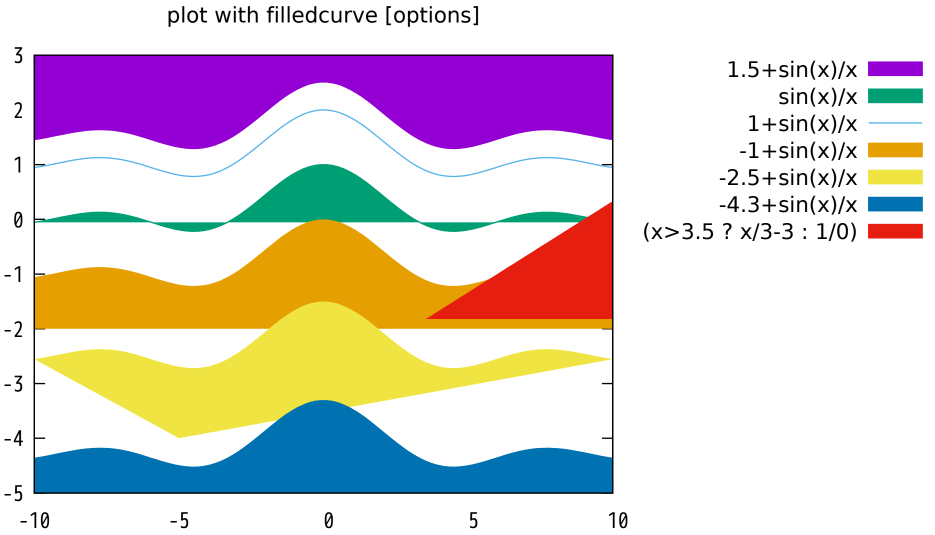
Filled boxes of reduced width
distribution

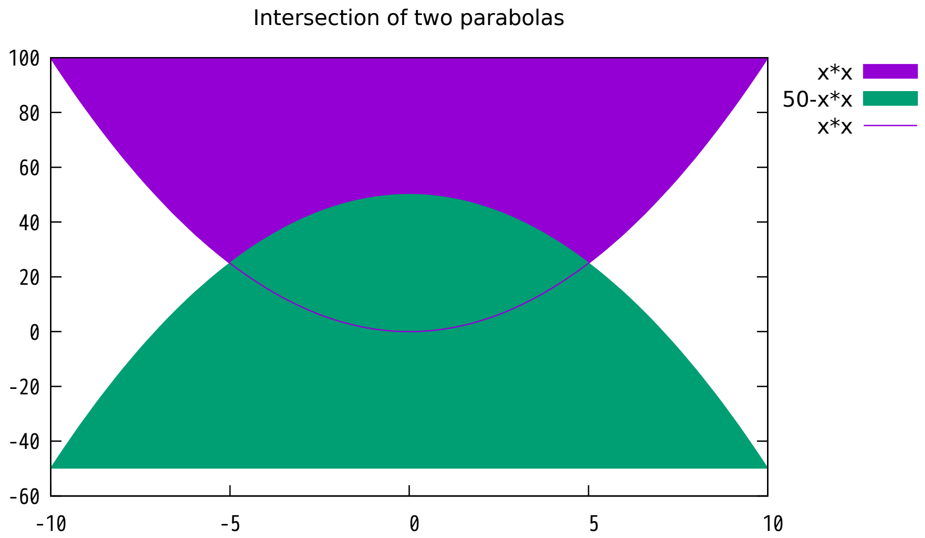

Filled boxes at 50% fill density
distribution

A demonstration of boxes with style fill solid 0.25 noborder

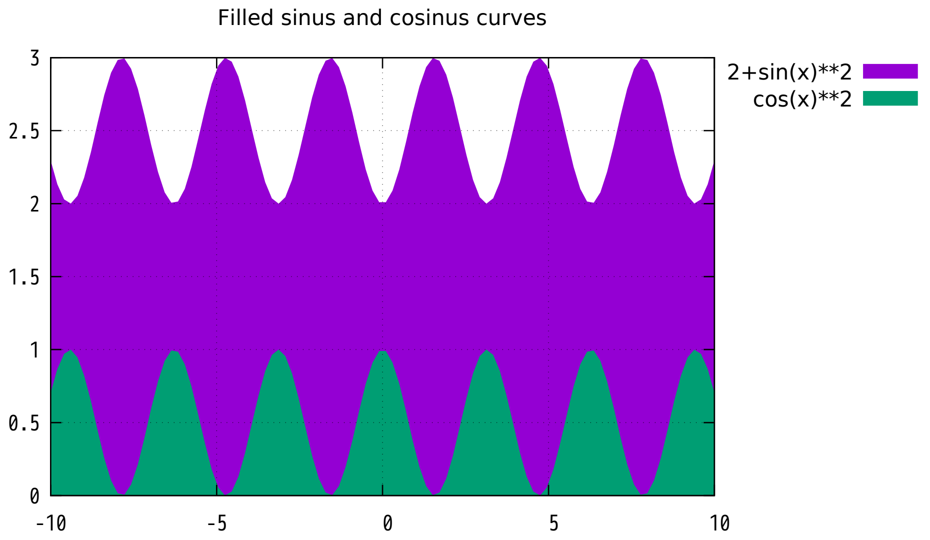



A demonstration of boxes in mono with style fill pattern
pattern 0
pattern 1
pattern 2
pattern 3

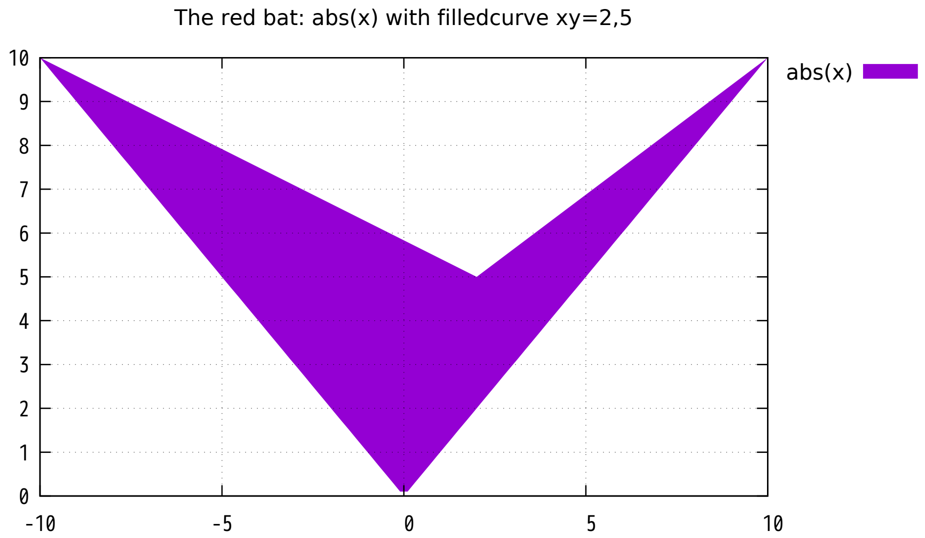

plot with filledcurve [options]
3
2
1
0
-1
-2
-3
-4
-5
-10
-5
0
5
10
1.5+sin(x)/x
sin(x)/x
1+sin(x)/x
-1+sin(x)/x
-2.5+sin(x)/x
-4.3+sin(x)/x
(x>3.5 ? x/3-3 : 1/0)

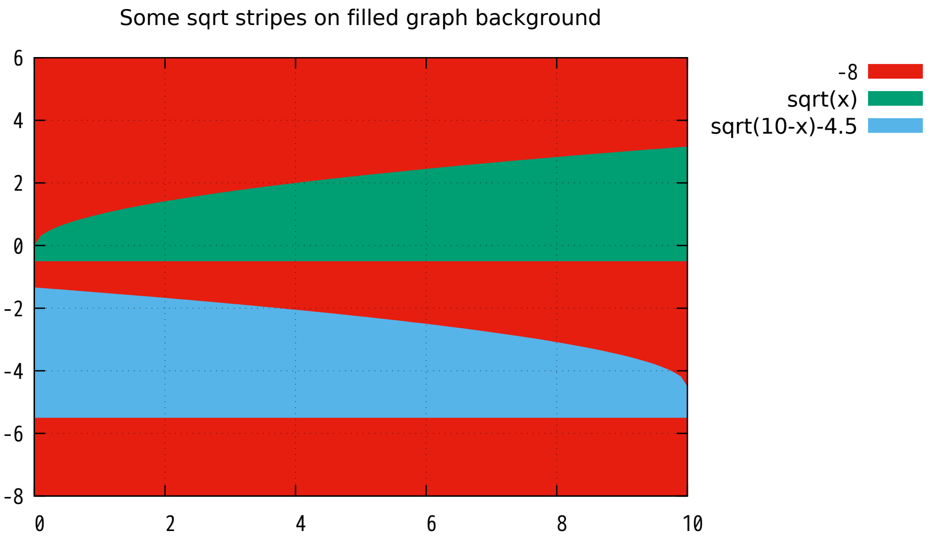


Intersection of two parabolas
100
80
60
40
20
0
-20
-40
-60
-10
-5
0
5
10
x*x
50-x*x
x*x

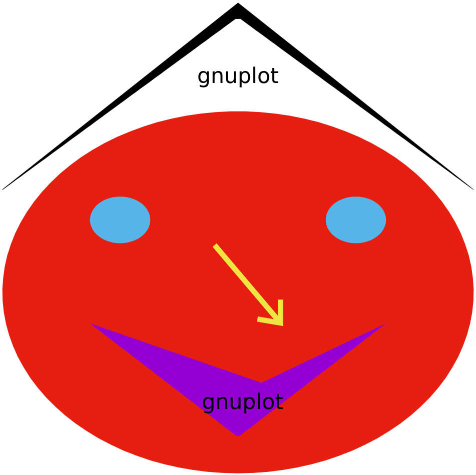


Filled sinus and cosinus curves
2+sin(x)**2
cos(x)**2
3
2.5
2
1.5
1
0.5
0
-10
-5
0
5
10

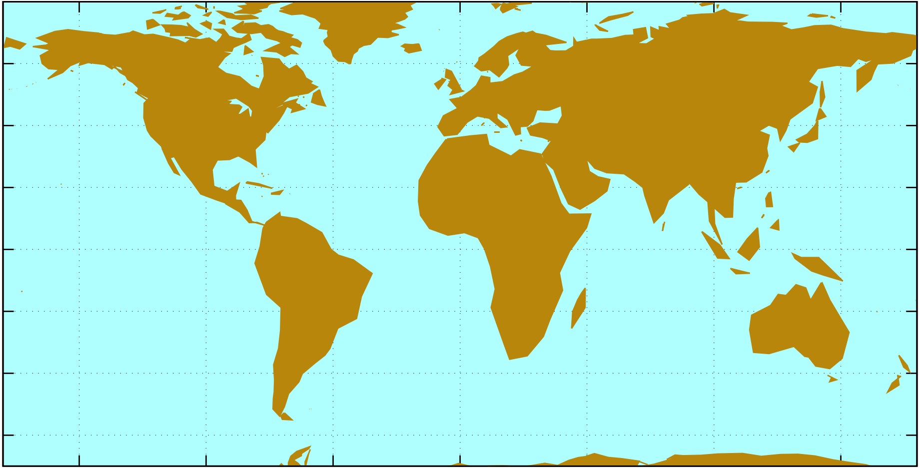

The red bat: abs(x) with filledcurve xy=2,5
abs(x)
10
9
8
7
6
5
4
3
2
1
0
-10
-5
0
5
10

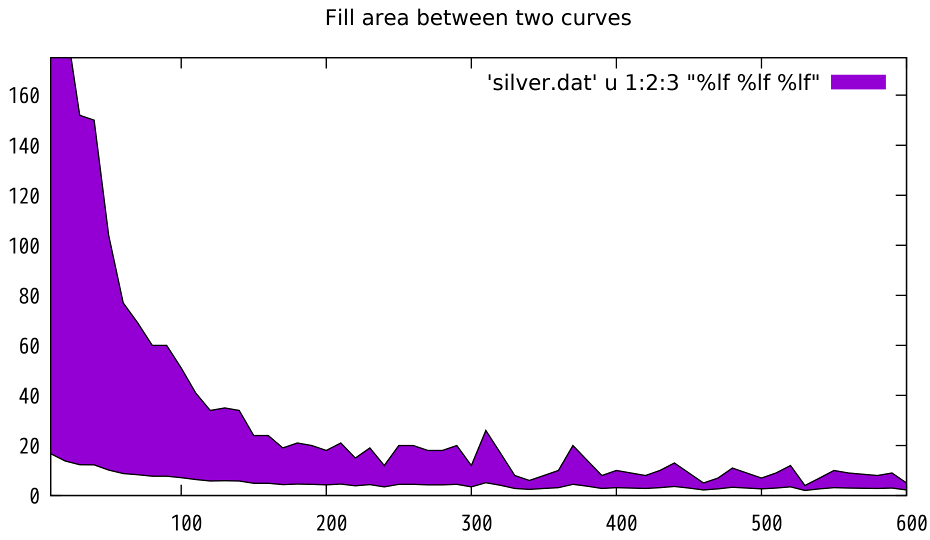

Some sqrt stripes on filled graph background
-8
sqrt(x)
sqrt(10-x)-4.5
6
4
2
0
-2
-4
-6
-8
0
2
4
6
8
10

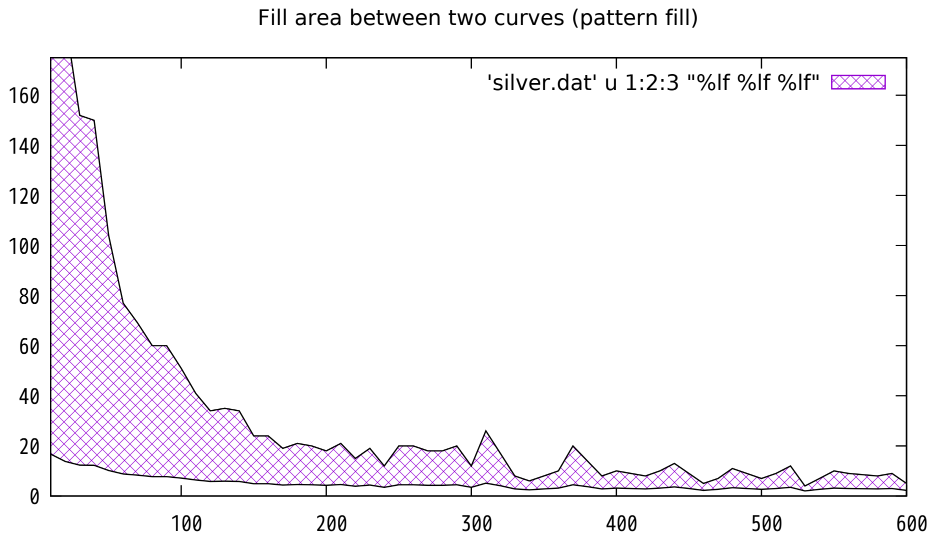
Let's smile with parametric filled curves

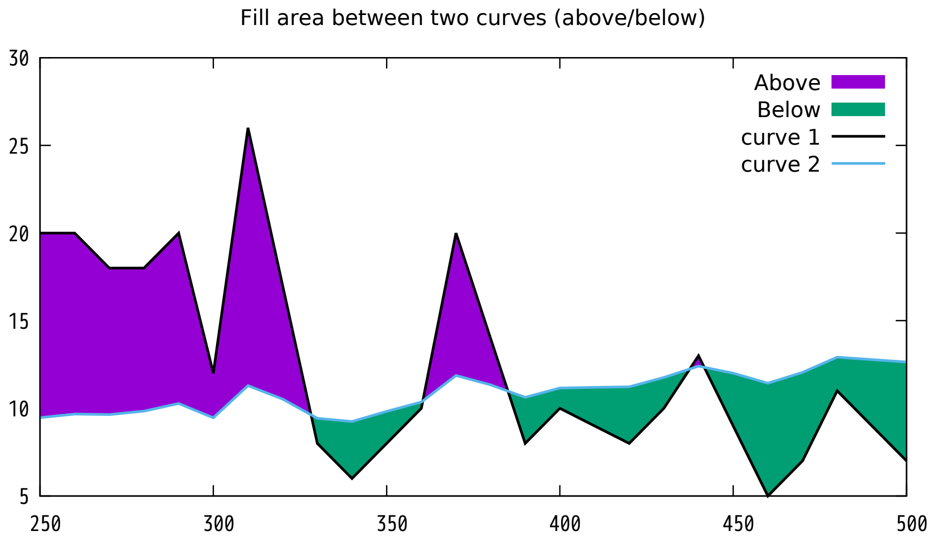


world.dat plotted with filledcurves

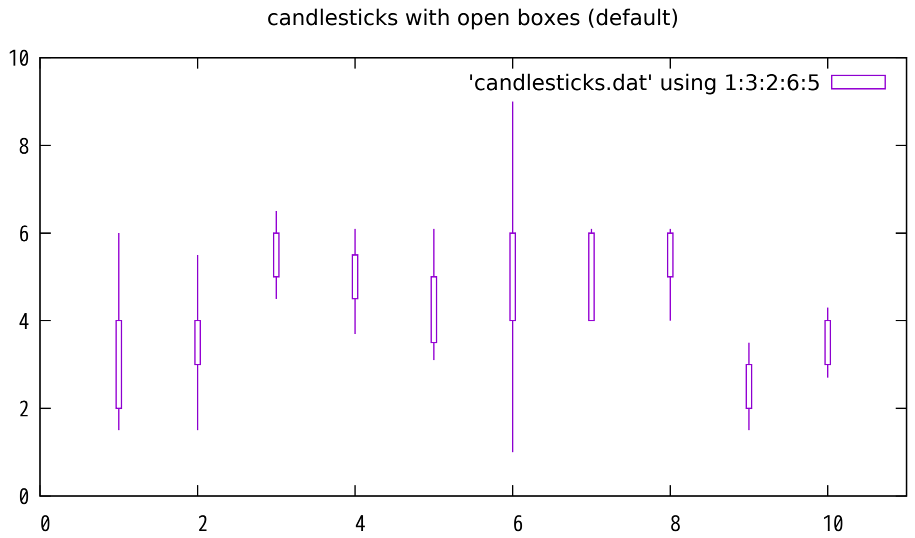


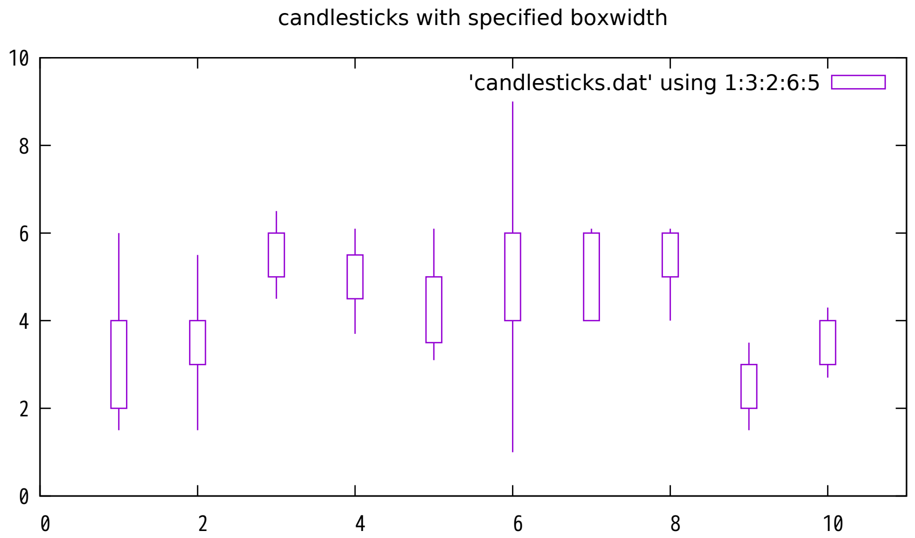

Fill area between two curves
'silver.dat' u 1:2:3 "%lf %lf %lf"
0
20
40
60
80
100
120
140
160
100
200
300
400
500
600


Fill area between two curves (pattern fill)
'silver.dat' u 1:2:3 "%lf %lf %lf"
0
20
40
60
80
100
120
140
160
100
200
300
400
500
600

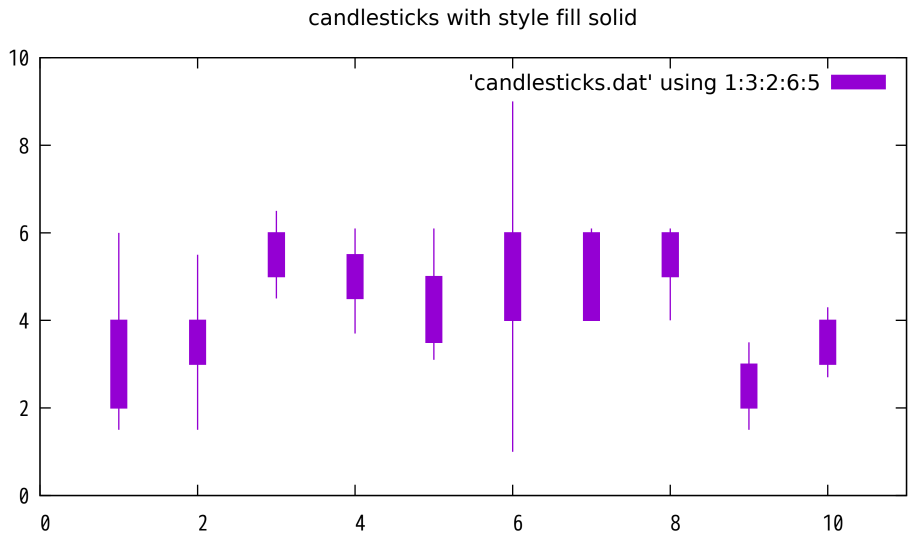


Fill area between two curves (above/below)
Above
Below
curve 1
curve 2
30
25
20
15
10
5
250
300
350
400
450
500

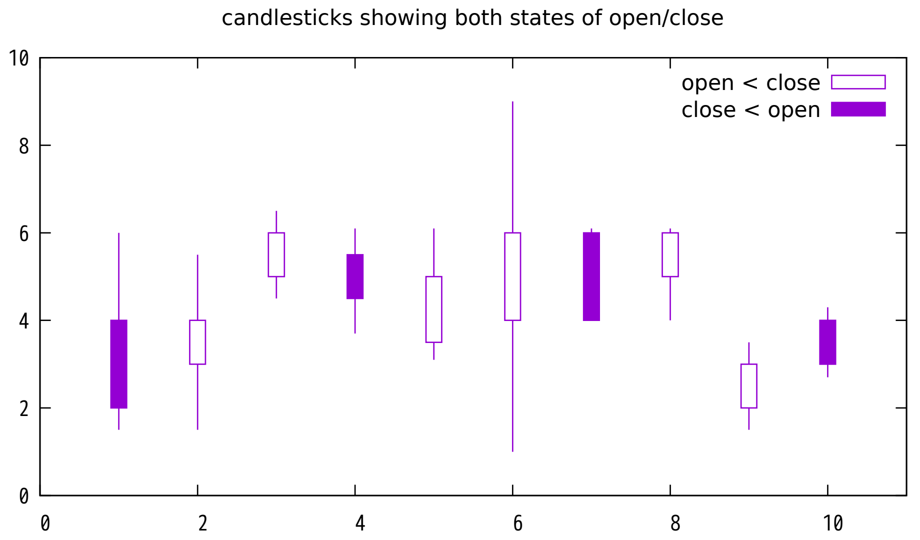

candlesticks with open boxes (default)
'candlesticks.dat' using 1:3:2:6:5
0
2
4
6
8
10
0
2
4
6
8
10



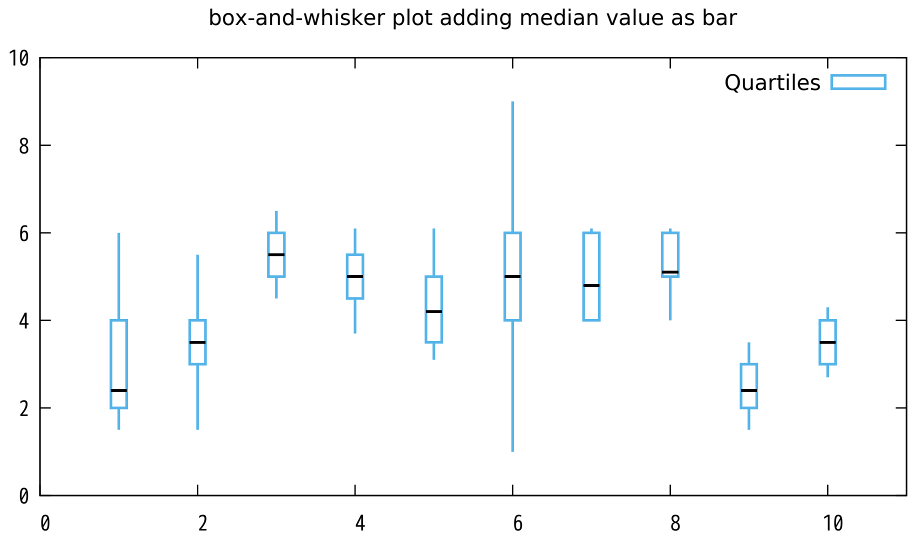
candlesticks with specified boxwidth
'candlesticks.dat' using 1:3:2:6:5
0
2
4
6
8
10
0
2
4
6
8
10

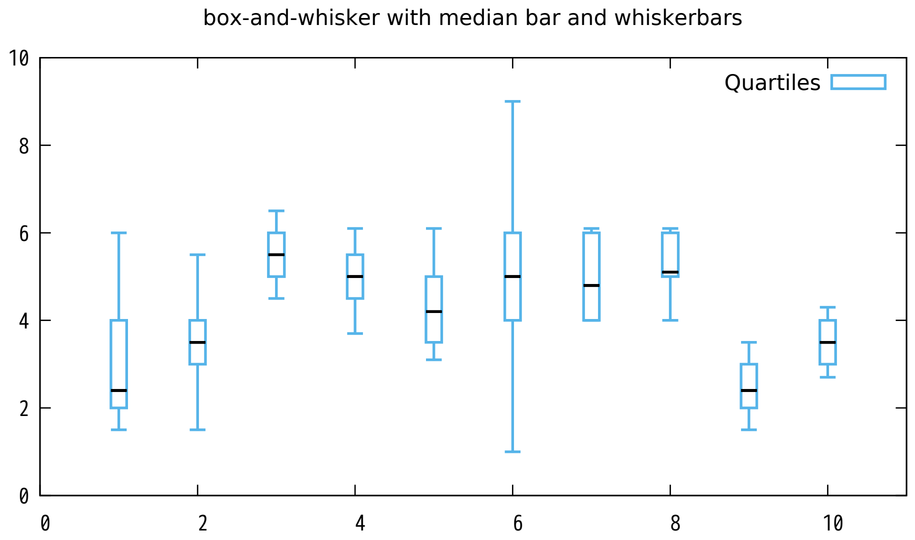


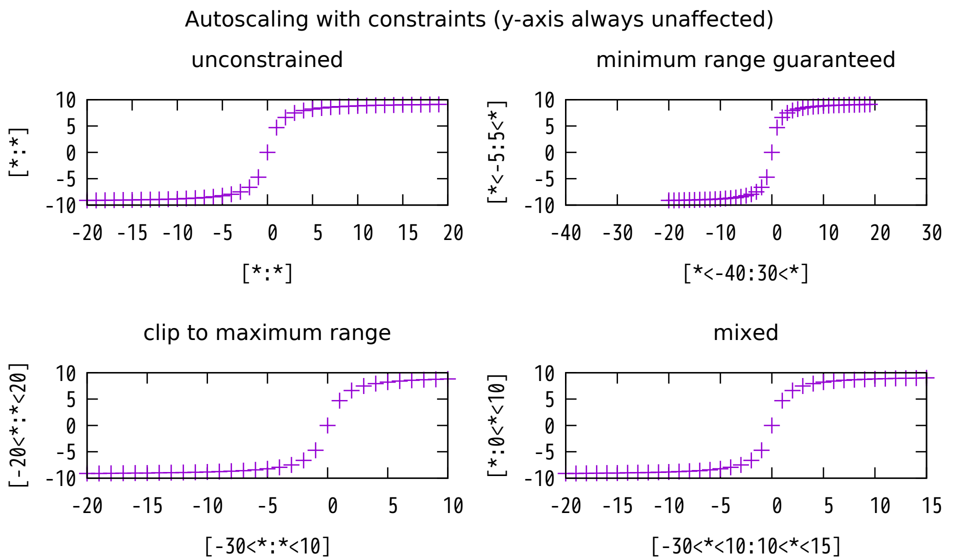
candlesticks with style fill solid
'candlesticks.dat' using 1:3:2:6:5
0
2
4
6
8
10
0
2
4
6
8
10



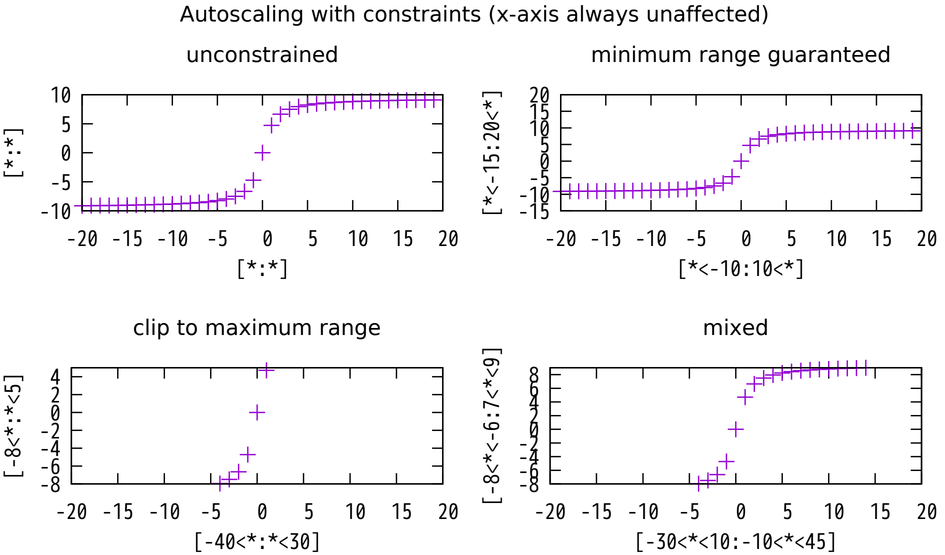
candlesticks showing both states of open/close
open < close
close < open
10
8
6
4
2
0
0
2
4
6
8
10


box-and-whisker plot adding median value as bar
Quartiles
0
2
4
6
8
10
0
2
4
6
8
10

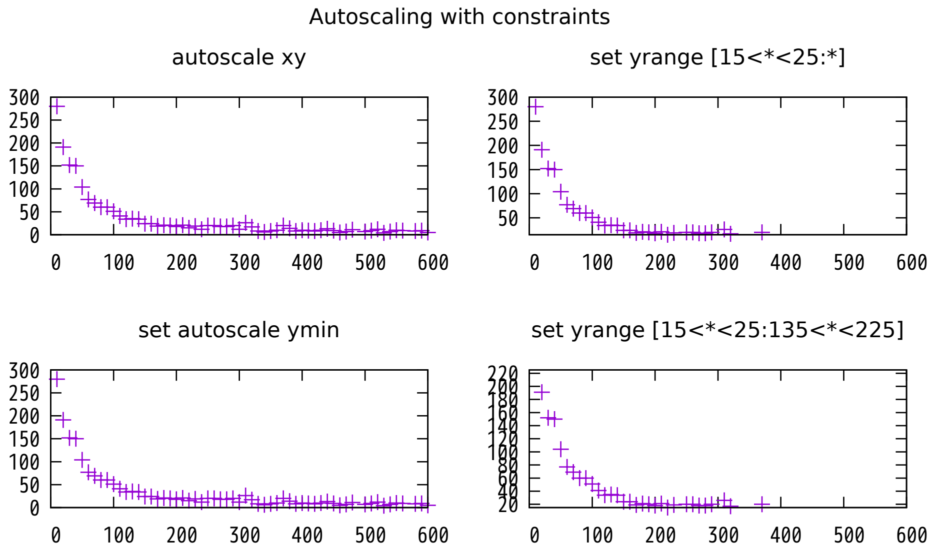

box-and-whisker with median bar and whiskerbars
Quartiles
0
2
4
6
8
10
0
2
4
6
8
10

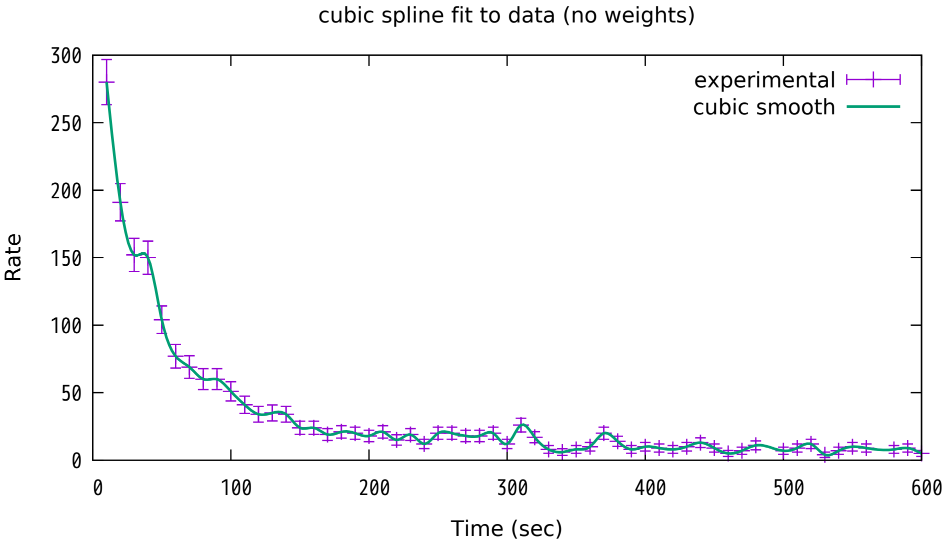


Autoscaling with constraints (y-axis always unaffected)
unconstrained
[*:*]
[*:*]
minimum range guaranteed
[*<-5:5<*]
[*<-40:30<*]
clip to maximum range
[-20<*:*<20]
[-30<*:*<10]
mixed
[*:0<*<10]
[-30<*<10:10<*<15]

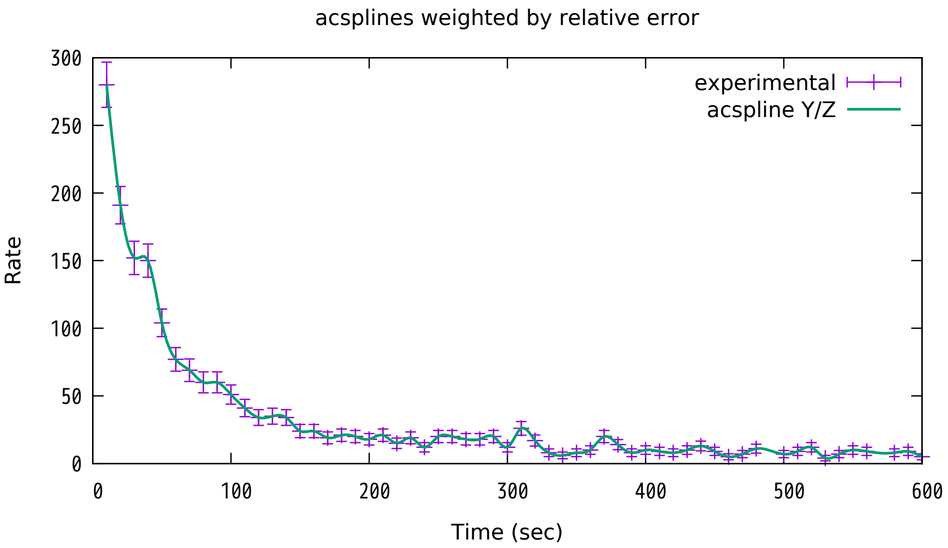


Autoscaling with constraints (x-axis always unaffected)
unconstrained
[*:*]
[*:*]
minimum range guaranteed
[*<-15:20<*]
[*<-10:10<*]
clip to maximum range
[-8<*:*<5]
[-40<*:*<30]
mixed
[-8<*<-6:7<*<9]
[-30<*<10:-10<*<45]

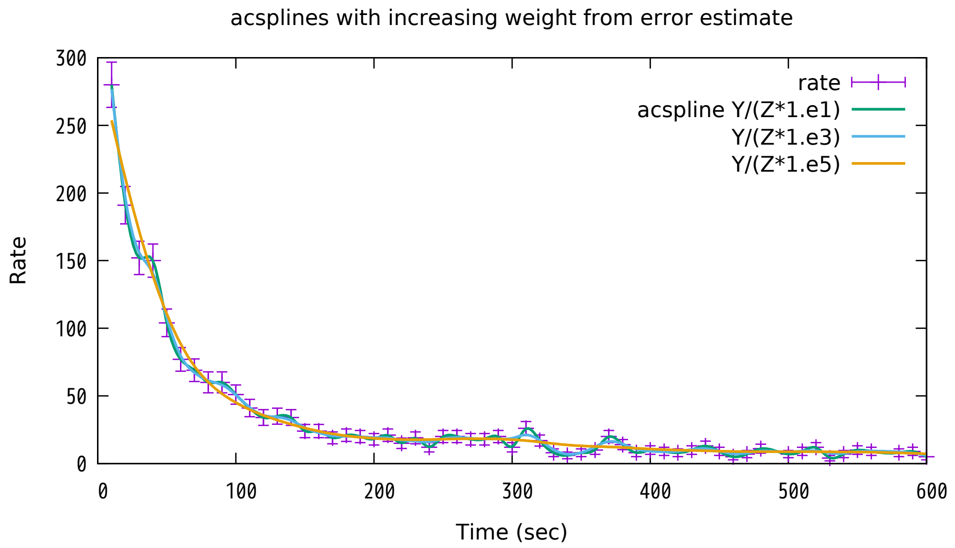

Autoscaling with constraints
autoscale xy
set yrange [15<*<25:*]
set autoscale ymin
set yrange [15<*<25:135<*<225]
0
50
100
150
200
250
300
400
500
600
20
220



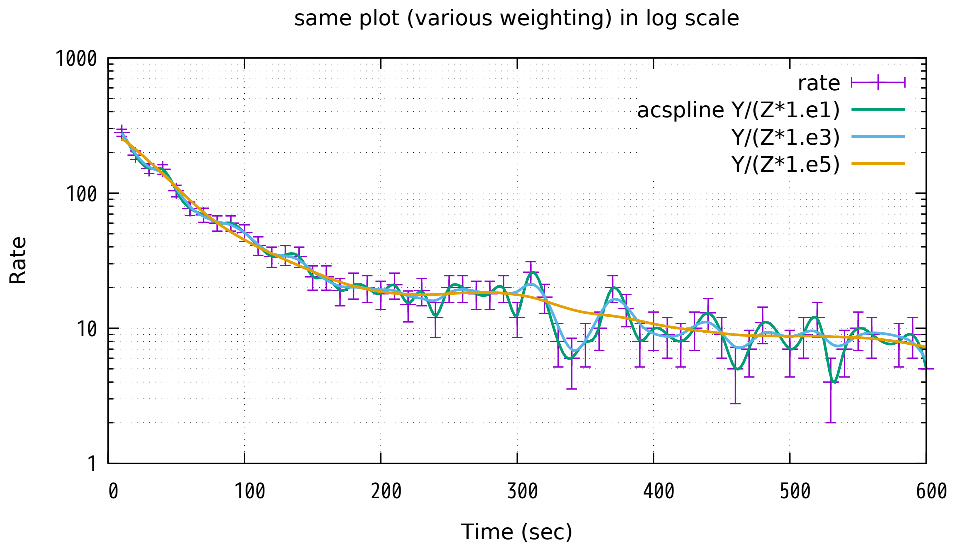
cubic spline fit to data (no weights)
experimental
cubic smooth
Rate
Time (sec)
300
250
200
150
100
50
0
0
100
200
300
400
500
600



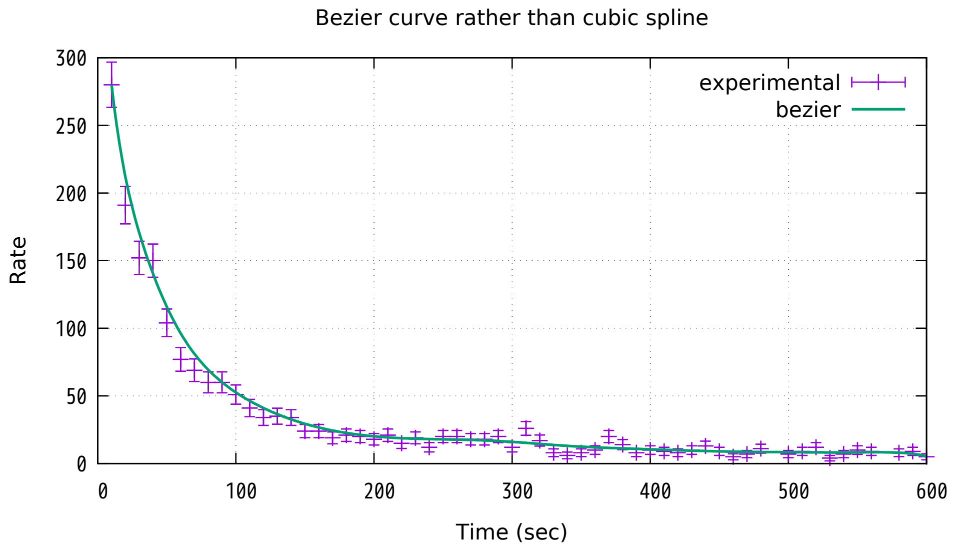
acsplines weighted by relative error
experimental
acspline Y/Z
Rate
Time (sec)
0
50
100
150
200
250
300
0
100
200
300
400
500
600

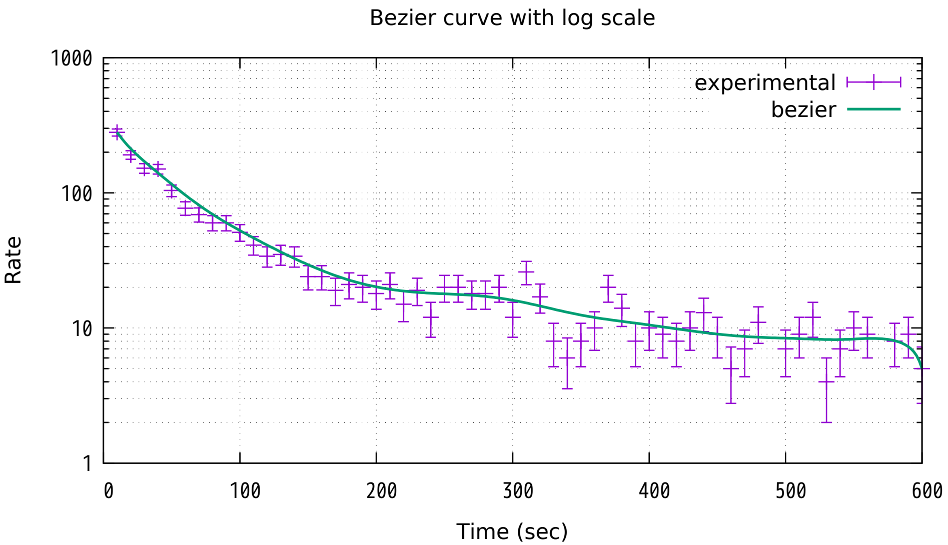


acsplines with increasing weight from error estimate
rate
acspline Y/(Z*1.e1)
Y/(Z*1.e3)
Y/(Z*1.e5)
Rate
Time (sec)
0
50
100
150
200
250
300
0
100
200
300
400
500
600

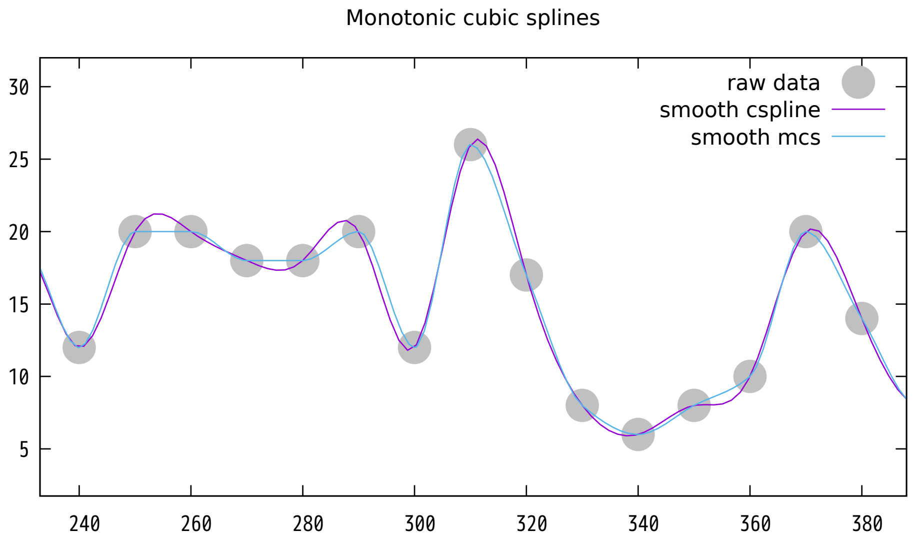


same plot (various weighting) in log scale
rate
acspline Y/(Z*1.e1)
Y/(Z*1.e3)
Y/(Z*1.e5)
Rate
Time (sec)
1000
100
10
1
0
100
200
300
400
500
600

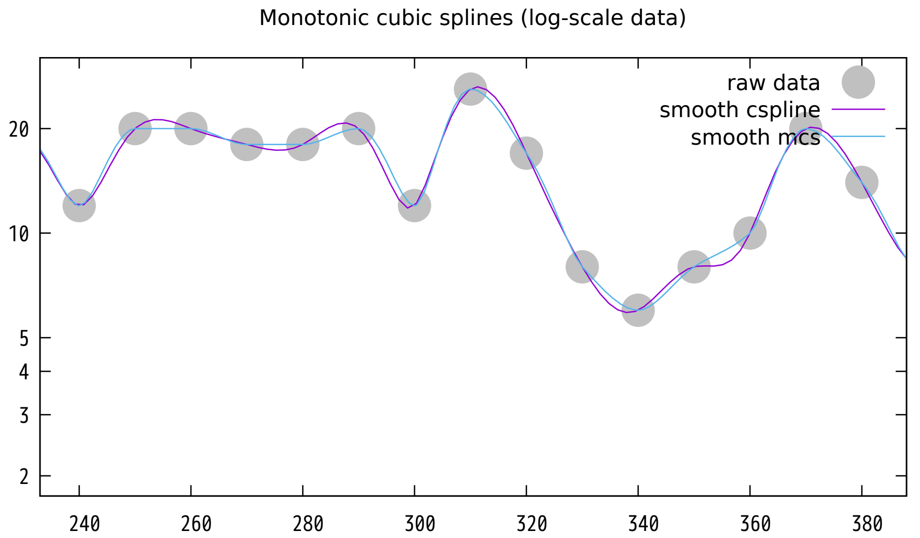

Bezier curve rather than cubic spline
Rate
Time (sec)
experimental
bezier
0
50
100
150
200
250
300
0
100
200
300
400
500
600



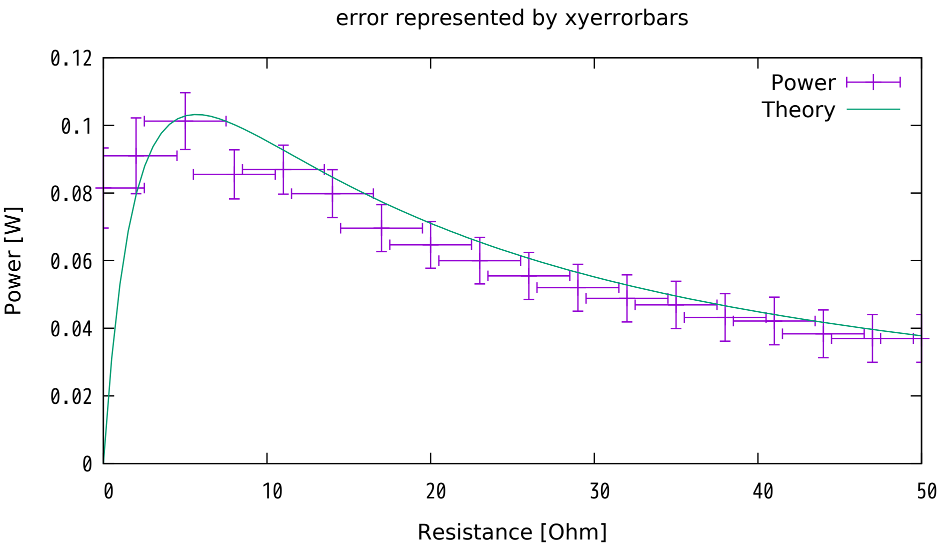
Bezier curve with log scale
experimental
bezier
1000
100
10
1
Rate
0
100
200
300
400
500
600
Time (sec)

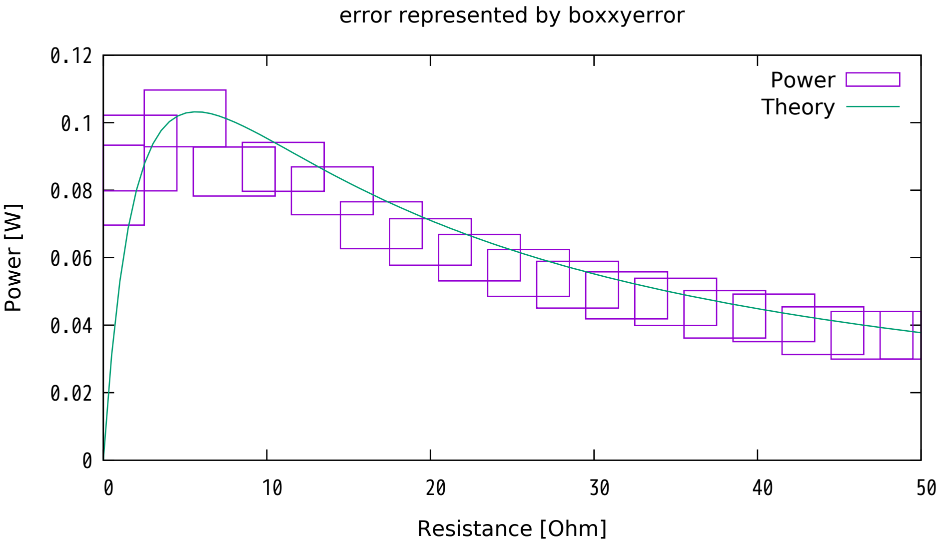


Monotonic cubic splines
raw data
smooth cspline
smooth mcs
30
25
20
15
10
5
240
260
280
300
320
340
360
380

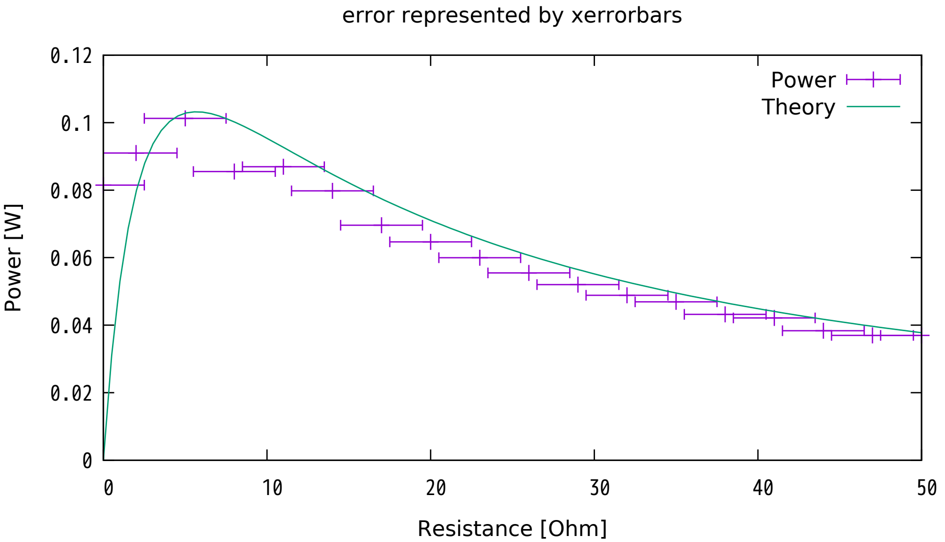


Monotonic cubic splines (log-scale data)
raw data
smooth cspline
smooth mcs
20
10
5
4
3
2
240
260
280
300
320
340
360
380

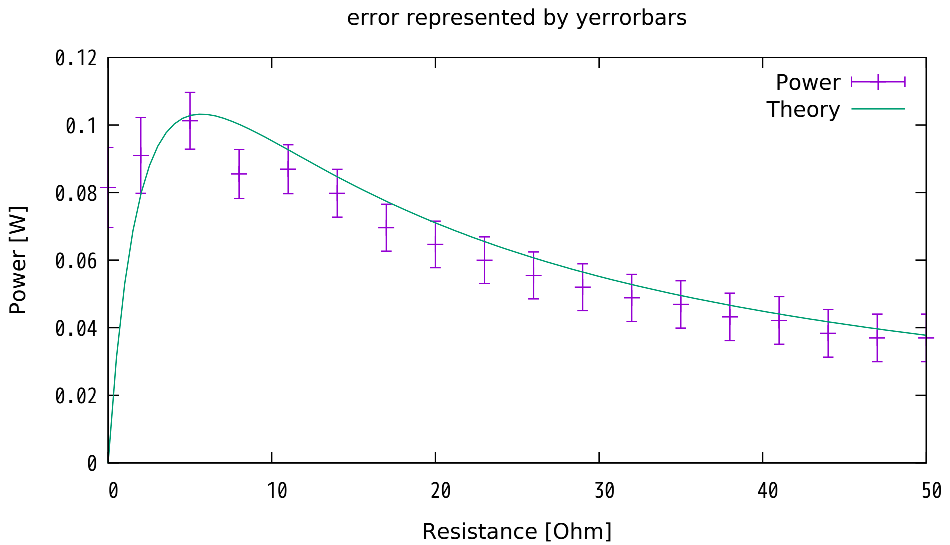

error represented by xyerrorbars
Power
Theory
Power [W]
Resistance [Ohm]
0.12
0.1
0.08
0.06
0.04
0.02
0
0
10
20
30
40
50



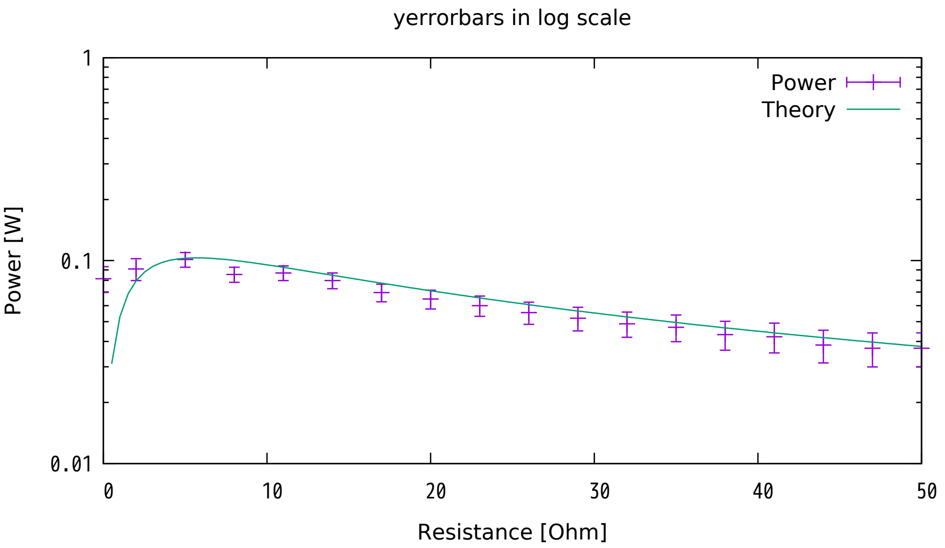
error represented by boxxyerror
Power [W]
Resistance [Ohm]
Power
Theory
0
0.02
0.04
0.06
0.08
0.1
0.12
0
10
20
30
40
50



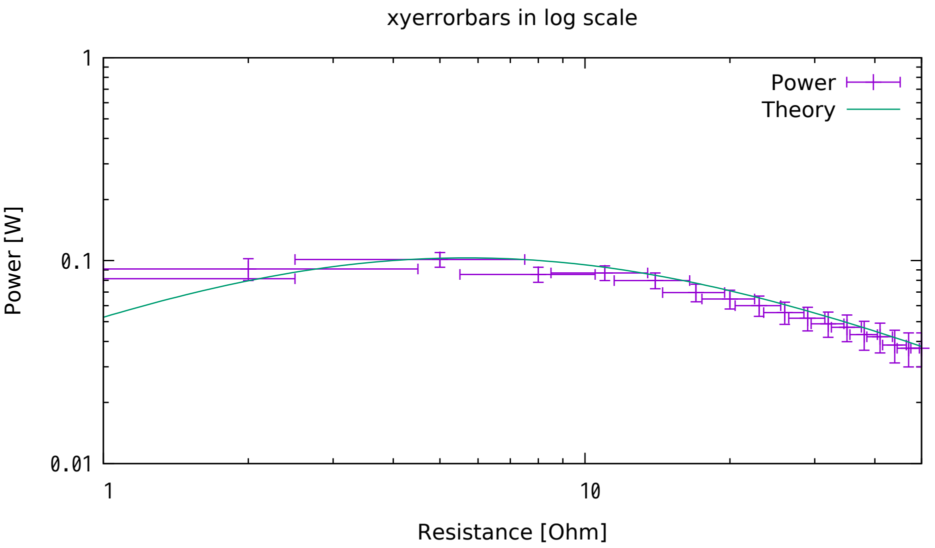
error represented by xerrorbars
Power
Theory
Power [W]
Resistance [Ohm]
0
0.02
0.04
0.06
0.08
0.1
0.12
0
10
20
30
40
50



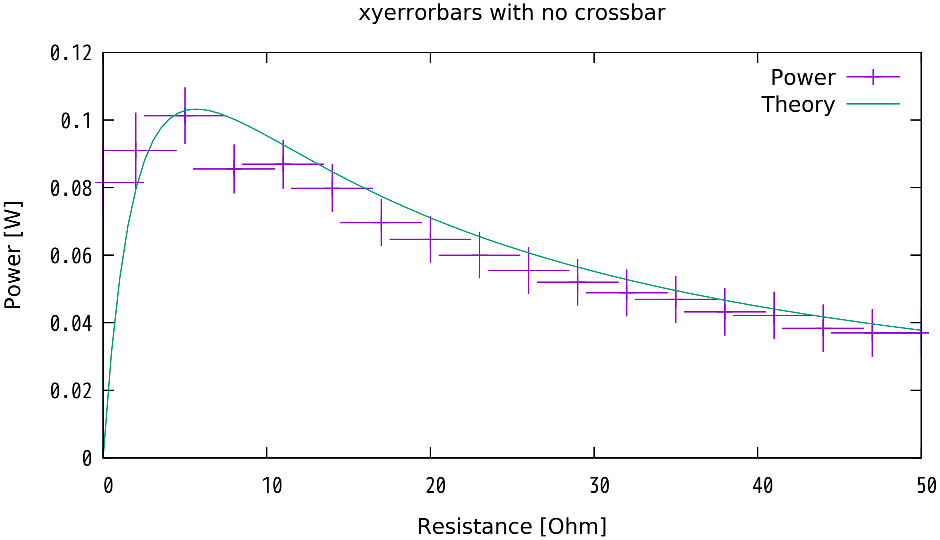
error represented by yerrorbars
Power [W]
Resistance [Ohm]
Power
Theory
0.12
0.1
0.08
0.06
0.04
0.02
0
0
10
20
30
40
50

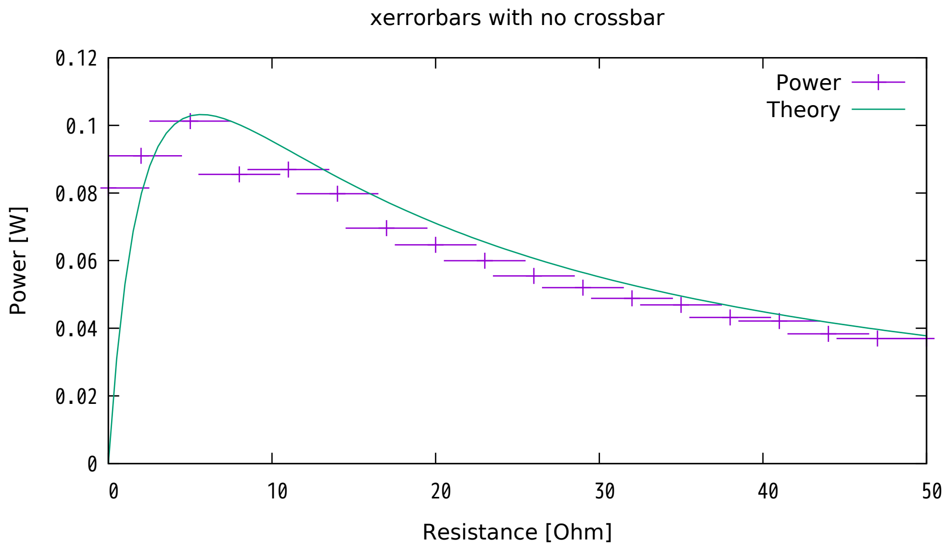


yerrorbars in log scale
Power
Theory
Power [W]
1
0.1
0.01
0
10
20
30
40
50
Resistance [Ohm]

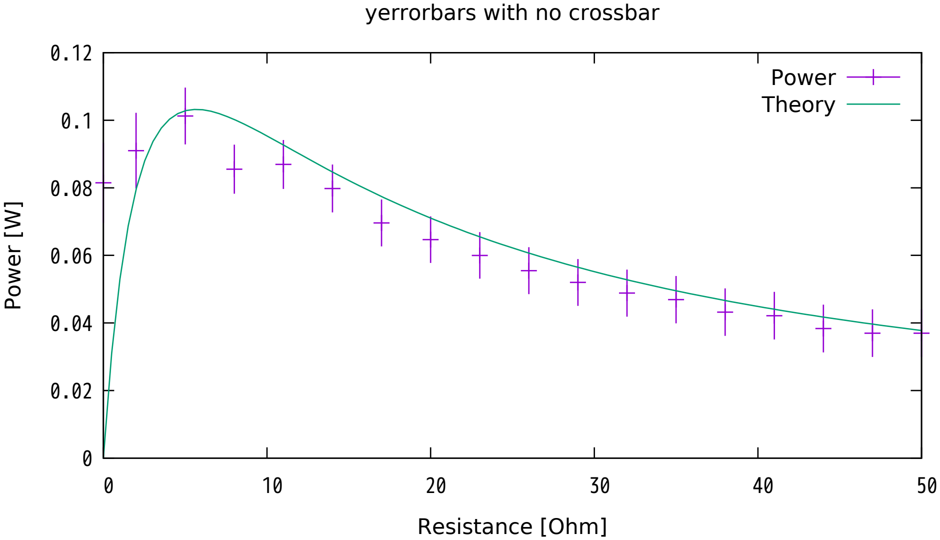


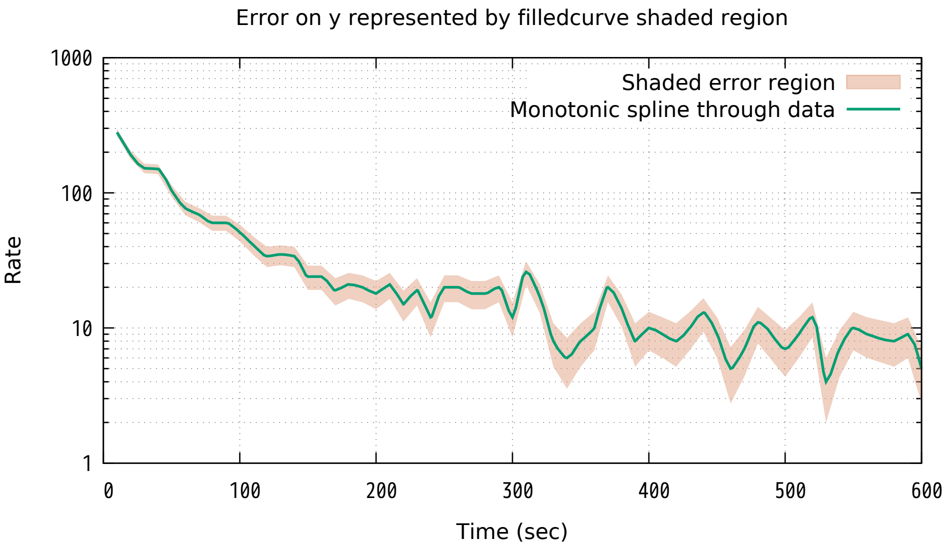
xyerrorbars in log scale
Power
Theory
Power [W]
Resistance [Ohm]
1
0.1
0.01
1
10


xyerrorbars with no crossbar
Power [W]
Resistance [Ohm]
Power
Theory
0.12
0.1
0.08
0.06
0.04
0.02
0
0
10
20
30
40
50

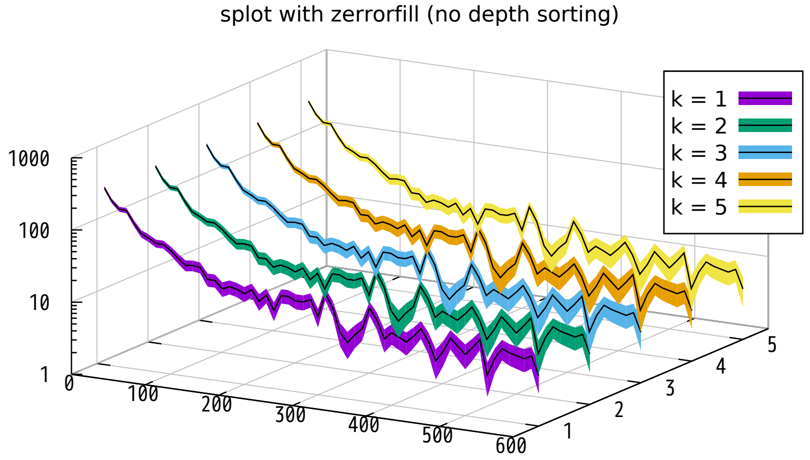


xerrorbars with no crossbar
Power [W]
Resistance [Ohm]
Power
Theory
0
0.02
0.04
0.06
0.08
0.1
0.12
0
10
20
30
40
50


yerrorbars with no crossbar
Power
Theory
Power [W]
Resistance [Ohm]
0.12
0.1
0.08
0.06
0.04
0.02
0
0
10
20
30
40
50

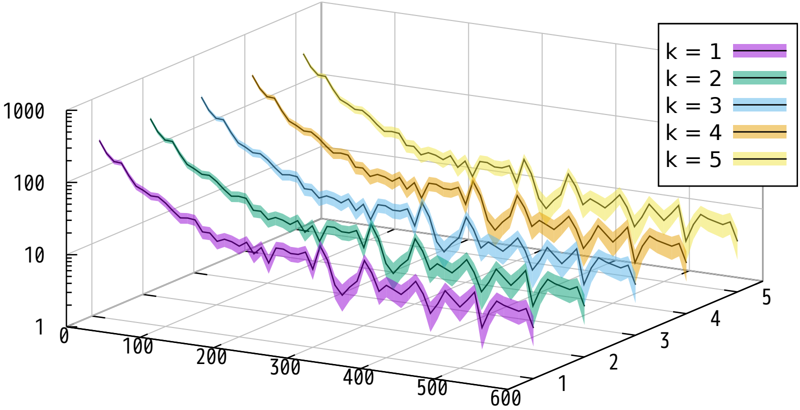


Error on y represented by filledcurve shaded region
Shaded error region
Monotonic spline through data
Rate
1000
100
10
1
0
100
200
300
400
500
600
Time (sec)

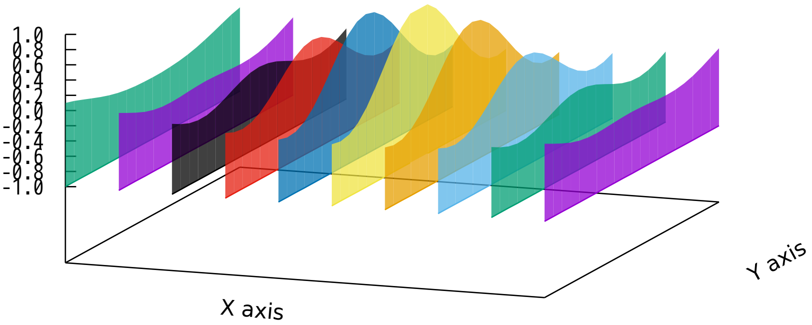


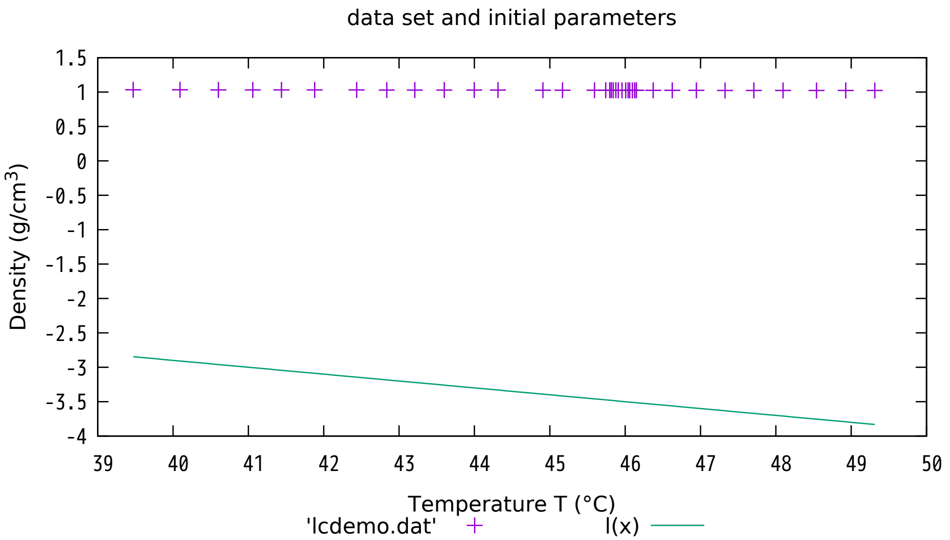
splot with zerrorfill (no depth sorting)
k = 1
k = 2
k = 3
k = 4
k = 5
1000
100
10
1
0
100
200
300
400
500
600
1
2
3
4
5

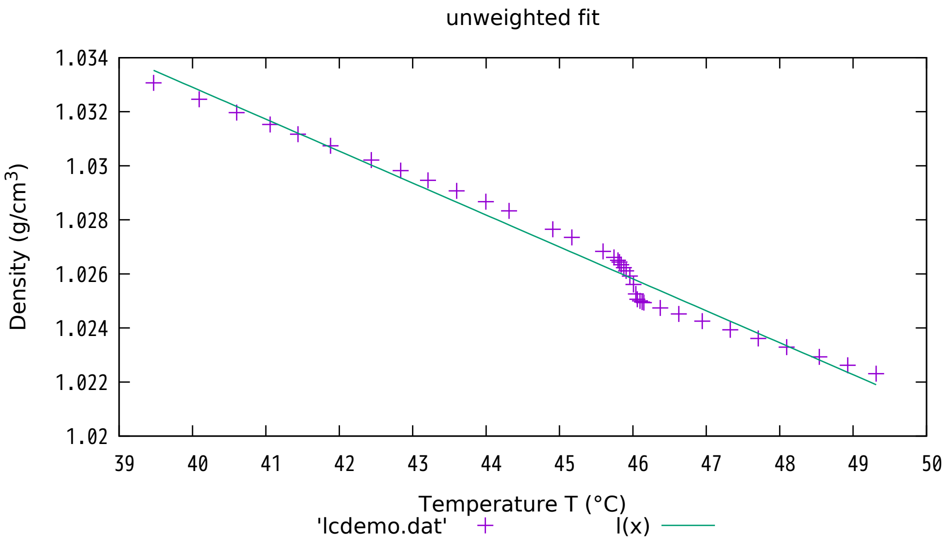
splot with zerrorfill (set pm3d depthorder)



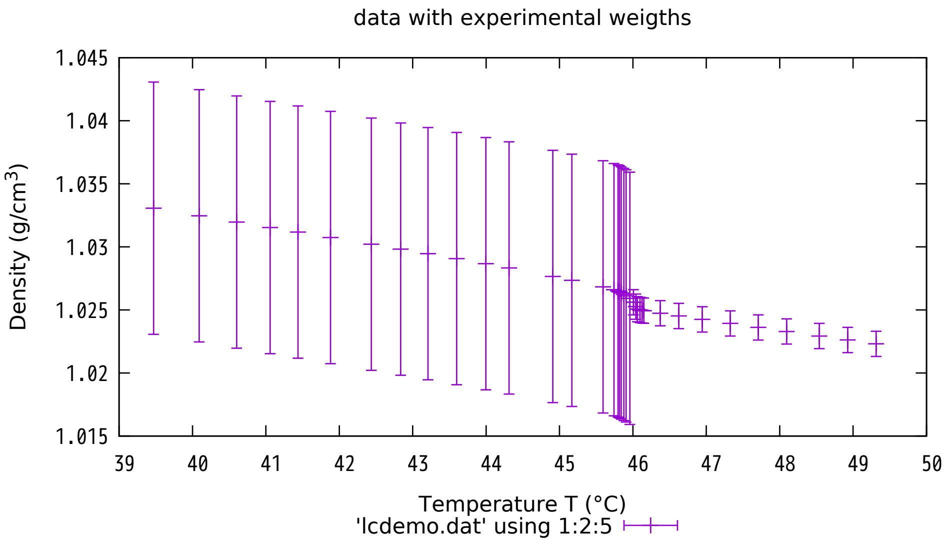
fence plot constructed with zerrorfill

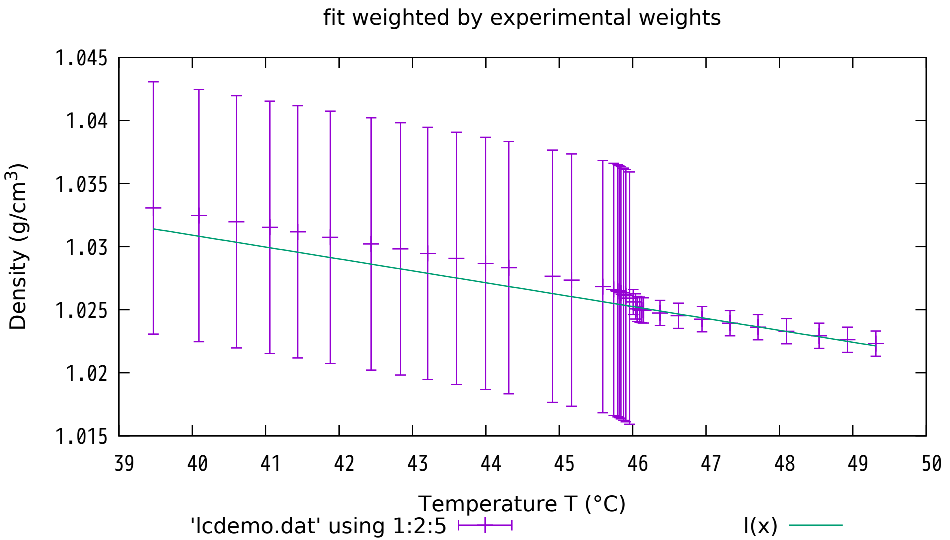


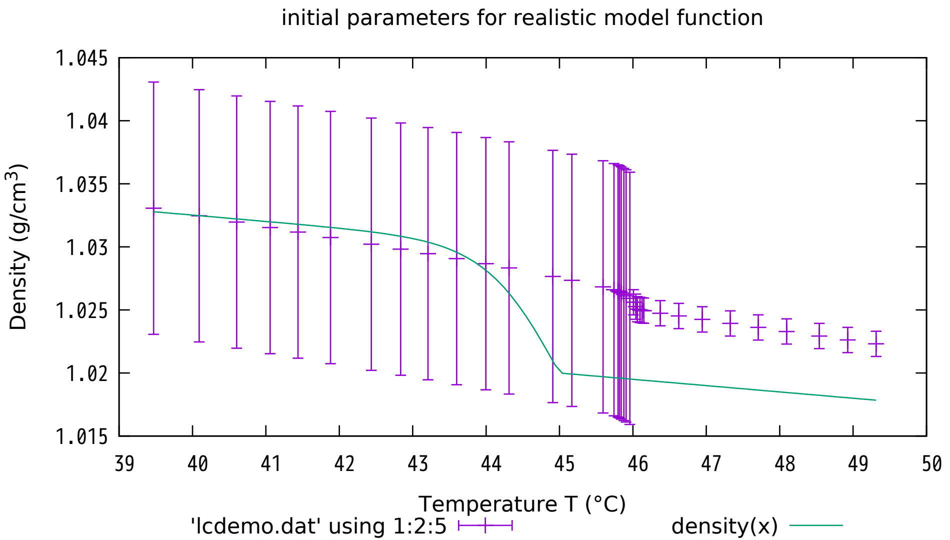

data set and initial parameters
Density (g/cm³)
Temperature T (°C)
'lcdemo.dat'
l(x)
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
39
40
41
42
43
44
45
46
47
48
49
50



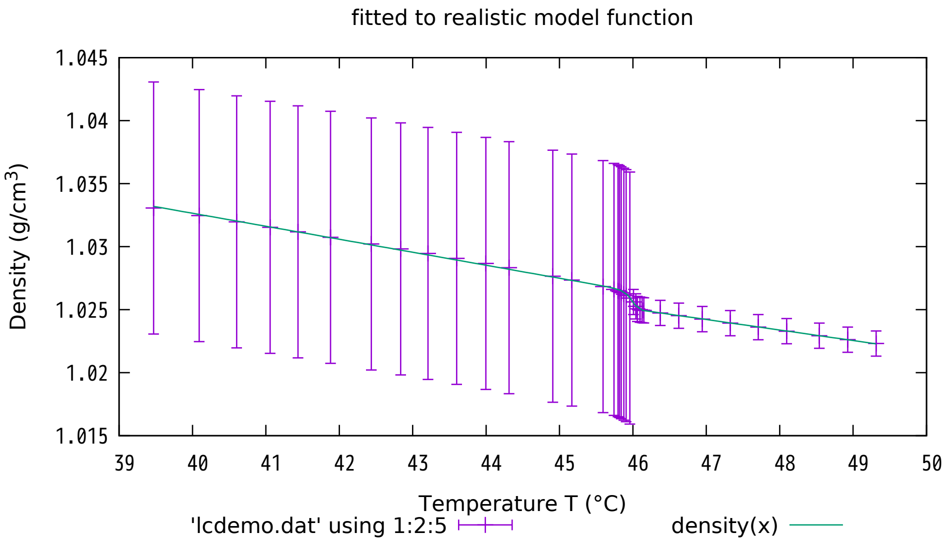
unweighted fit
1.034
1.032
1.03
1.028
1.026
1.024
1.022
1.02
Density (g/cm³)
39
40
41
42
43
44
45
46
47
48
49
50
Temperature T (°C)
'lcdemo.dat'
l(x)


data with experimental weigths
Density (g/cm^3)
1.045
1.04
1.035
1.03
1.025
1.02
1.015
39
40
41
42
43
44
45
46
47
48
49
50
Temperature T (°C)
'lcdemo.dat' using 1:2:5

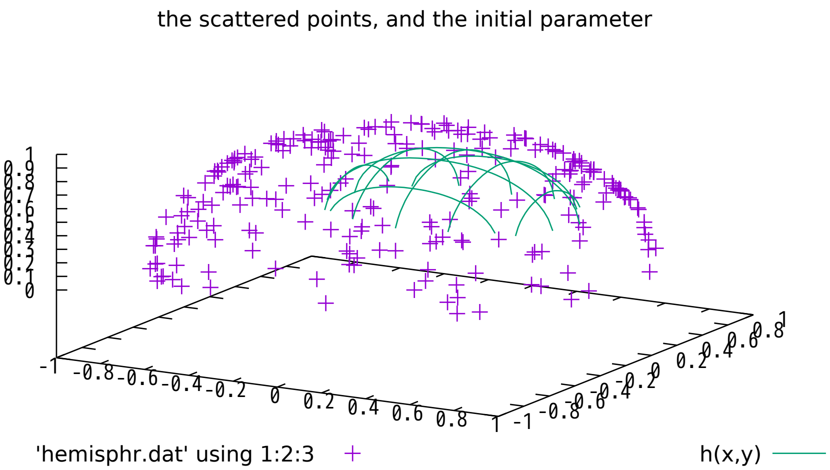

fit weighted by experimental weights
1.045
1.04
1.035
1.03
1.025
1.02
1.015
Density (g/cm³)
39
40
41
42
43
44
45
46
47
48
49
50
Temperature T (°C)
'lcdemo.dat' using 1:2:5
l(x)

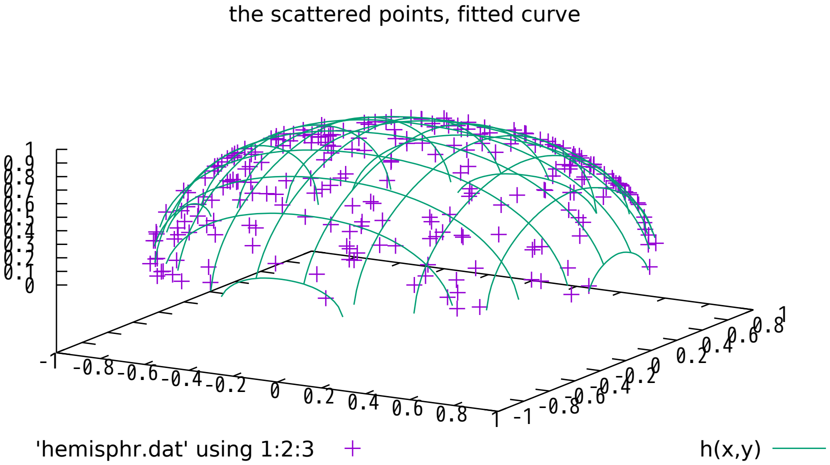


initial parameters for realistic model function
1.045
1.04
1.035
1.03
1.025
1.02
1.015
Density (g/cm³)
39
40
41
42
43
44
45
46
47
48
49
50
Temperature T (°C)
'lcdemo.dat' using 1:2:5
density(x)

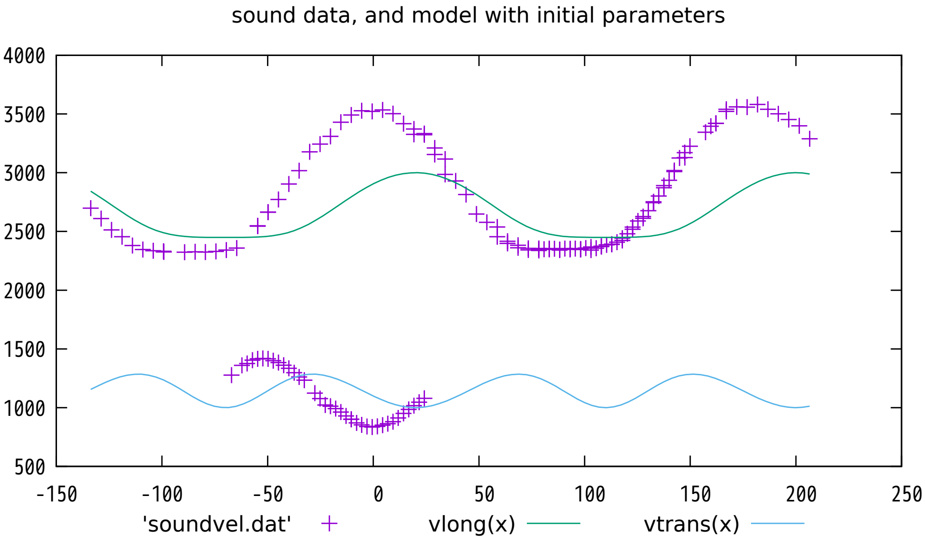


fitted to realistic model function
1.045
1.04
1.035
1.03
1.025
1.02
1.015
Density (g/cm3)
39
40
41
42
43
44
45
46
47
48
49
50
Temperature T (°C)
'lcdemo.dat' using 1:2:5
density(x)

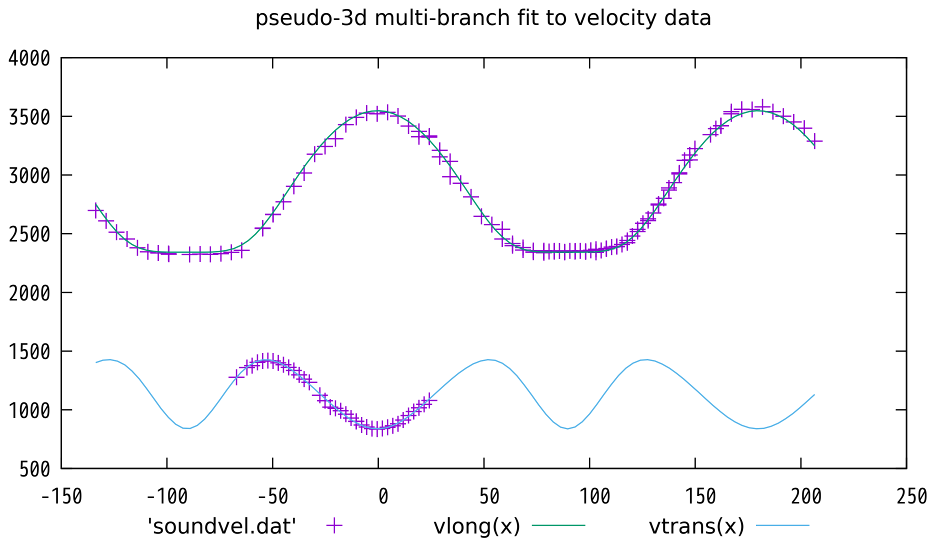

the scattered points, and the initial parameter
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
'hemisphr.dat' using 1:2:3
h(x,y)

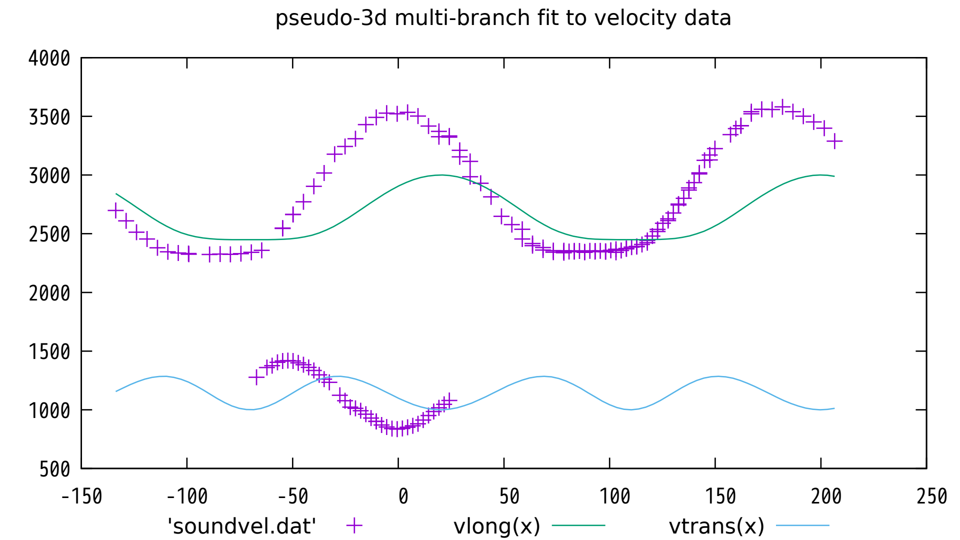


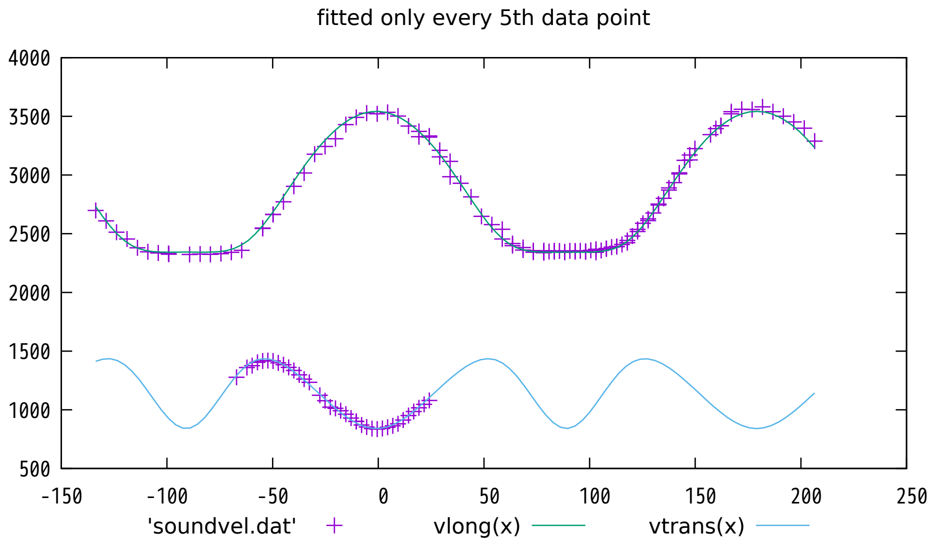
the scattered points, fitted curve
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
'hemisphr.dat' using 1:2:3
h(x,y)



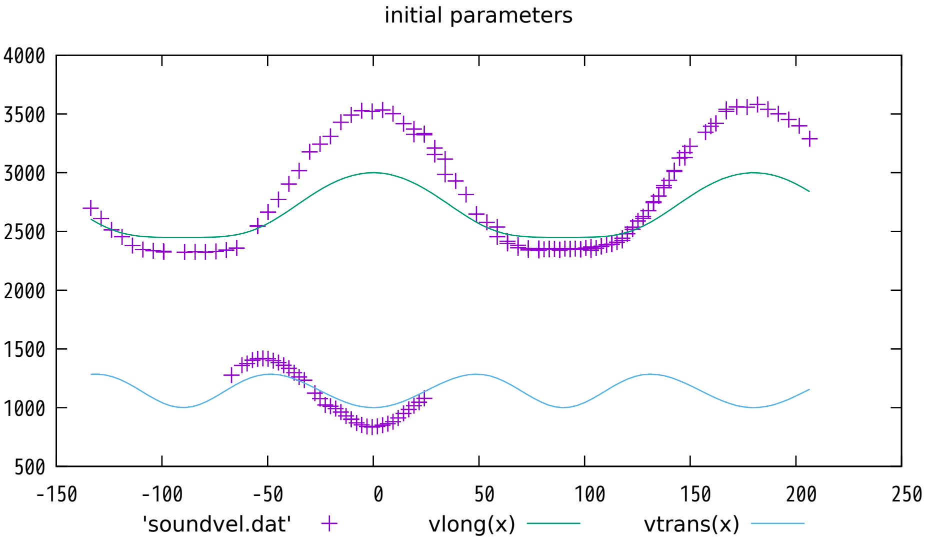
sound data, and model with initial parameters
4000
3500
3000
2500
2000
1500
1000
500
-150
-100
-50
0
50
100
150
200
250
'soundvel.dat'
vlong(x)
vtrans(x)

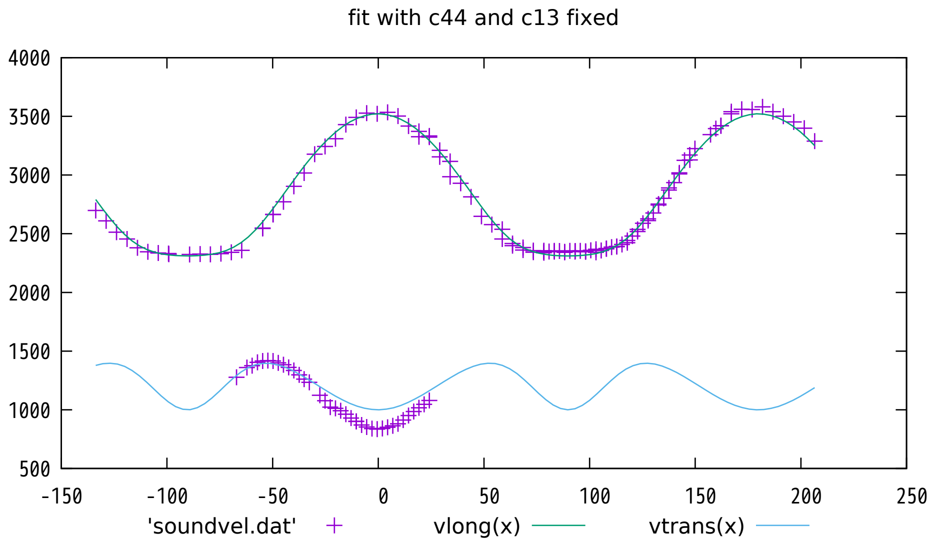

pseudo-3d multi-branch fit to velocity data
4000
3500
3000
2500
2000
1500
1000
500
-150
-100
-50
0
50
100
150
200
250
'soundvel.dat'
vlong(x)
vtrans(x)

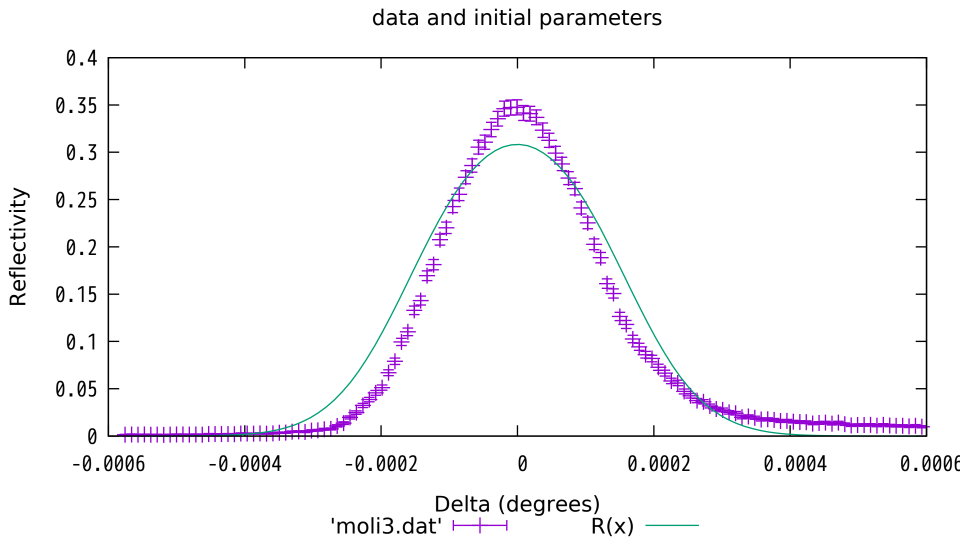

pseudo-3d multi-branch fit to velocity data
4000
3500
3000
2500
2000
1500
1000
500
-150
-100
-50
0
50
100
150
200
250
'soundvel.dat'
vlong(x)
vtrans(x)

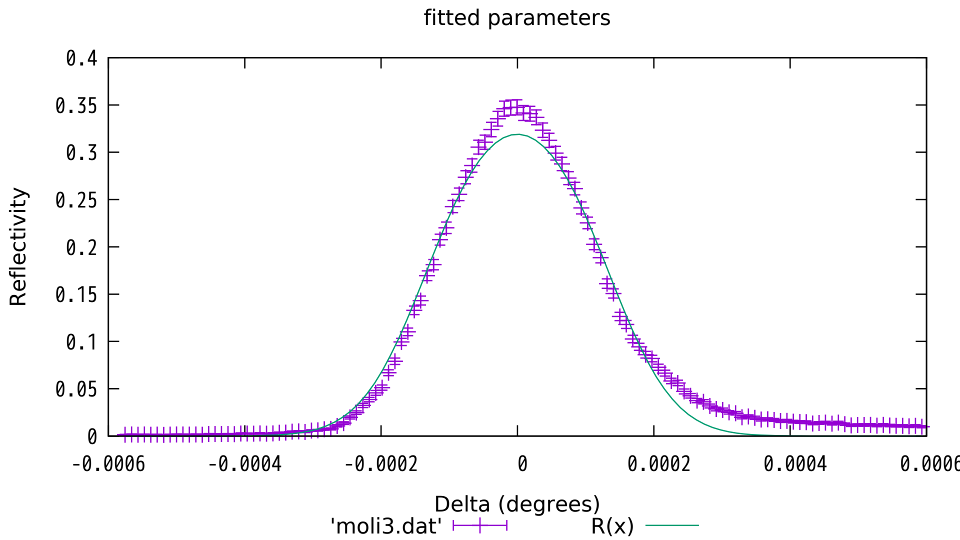


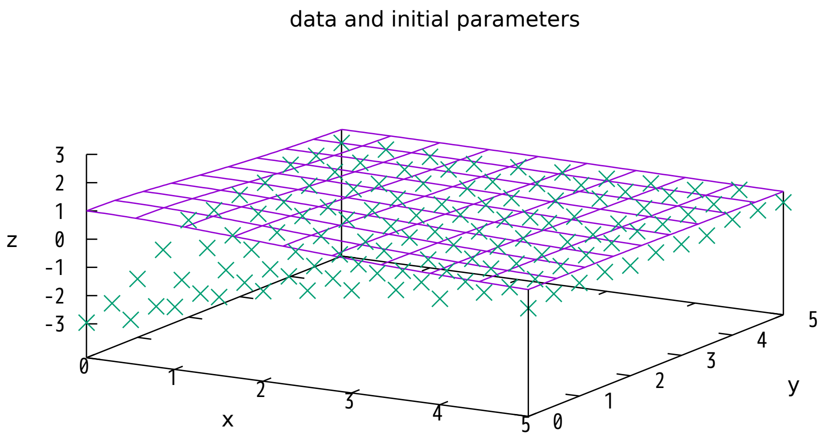
fitted only every 5th data point
4000
3500
3000
2500
2000
1500
1000
500
-150
-100
-50
0
50
100
150
200
250
'soundvel.dat'
vlong(x)
vtrans(x)

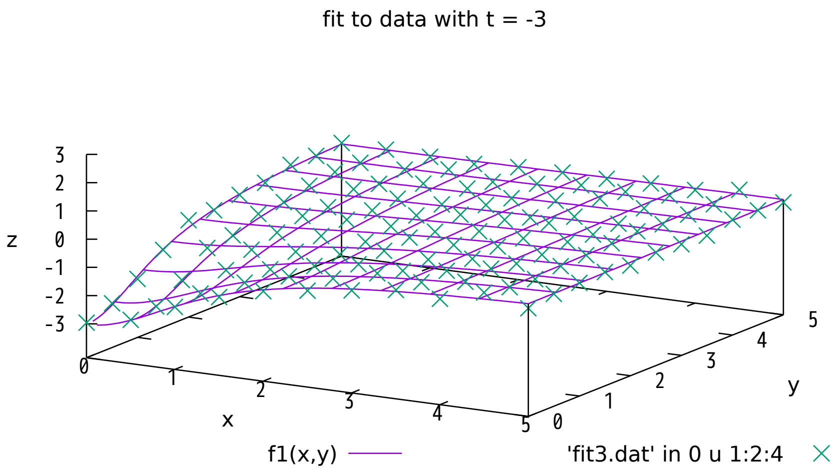

initial parameters
4000
3500
3000
2500
2000
1500
1000
500
-150
-100
-50
0
50
100
150
200
250
'soundvel.dat'
vlong(x)
vtrans(x)


fit with c44 and c13 fixed
4000
3500
3000
2500
2000
1500
1000
500
-150
-100
-50
0
50
100
150
200
250
'soundvel.dat'
vlong(x)
vtrans(x)

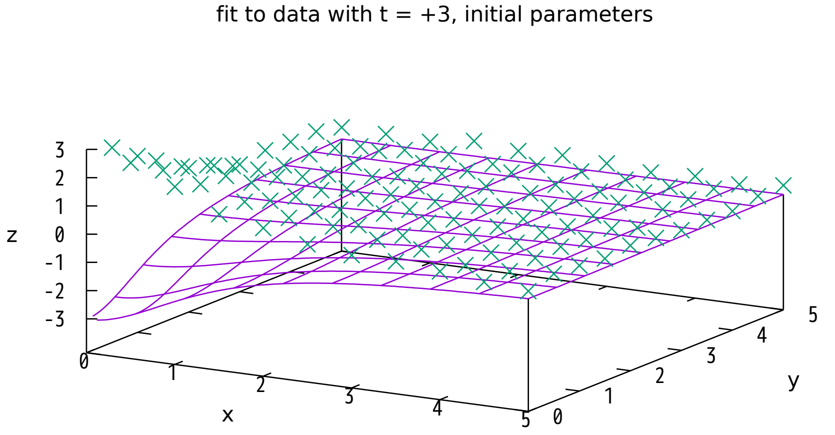

data and initial parameters
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Reflectivity
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
0.0006
Delta (degrees)
'moli3.dat'
R(x)


fitted parameters
Reflectivity
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.0006
-0.0004
-0.0002
0
0.0002
0.0004
Delta (degrees)
'moli3.dat'
R(x)

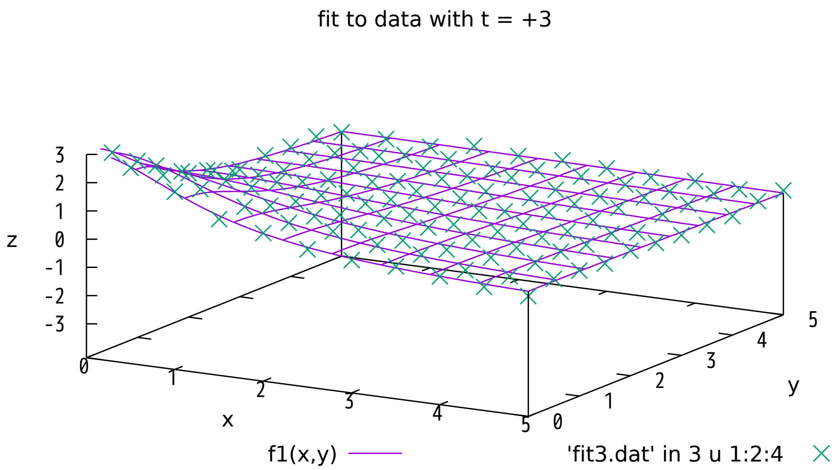

data and initial parameters
z
3
2
1
0
-1
-2
-3
x
0
1
2
3
4
5
y
0
1
2
3
4
5
f1(x,y)
'fit3.dat' in 0 u 1:2:4



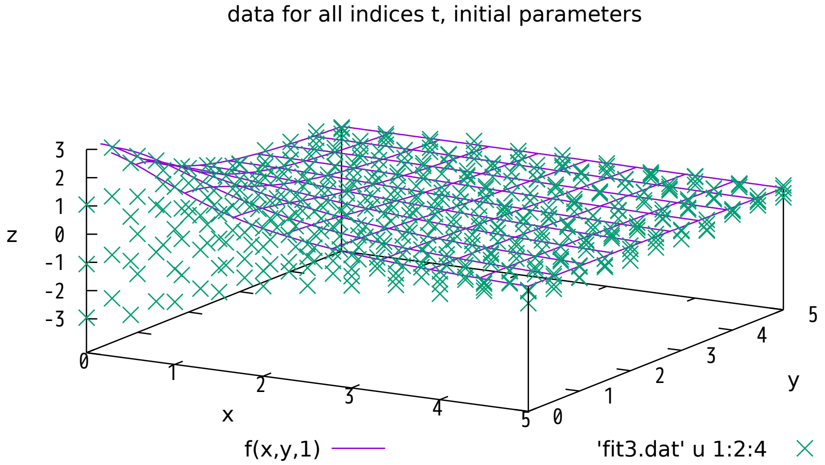
fit to data with t = -3
z
3
2
1
0
-1
-2
-3
x
0
1
2
3
4
5
y
0
1
2
3
4
5
f1(x,y)
'fit3.dat' in 0 u 1:2:4



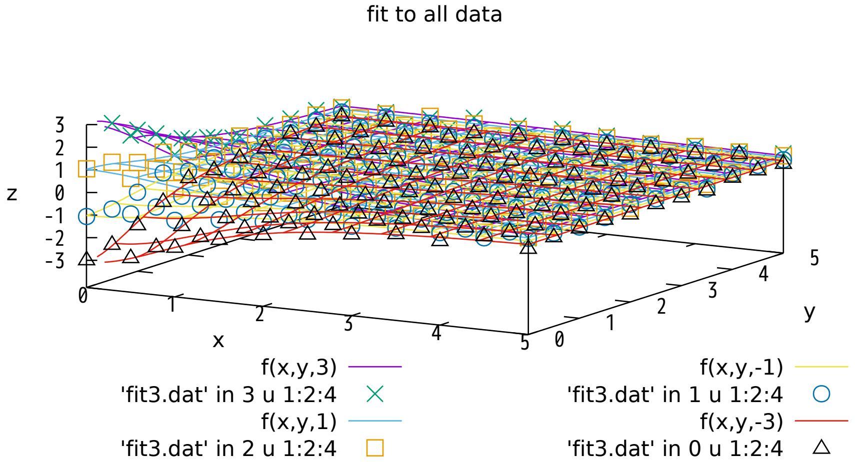
fit to data with t = +3, initial parameters
z
3
2
1
0
-1
-2
-3
x
0
1
2
3
4
5
y
0
1
2
3
4
5
f1(x,y)
'fit3.dat' in 3 u 1:2:4



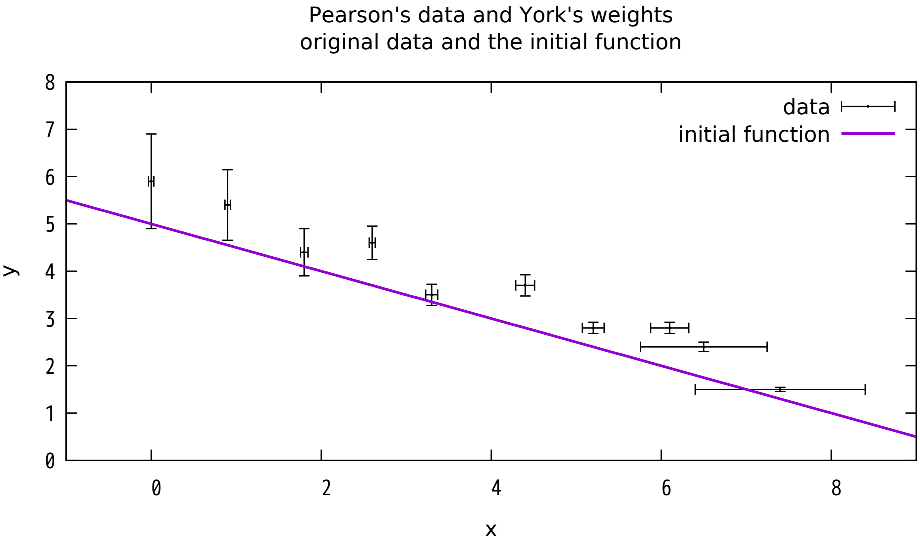
fit to data with t = +3
z
3
2
1
0
-1
-2
-3
0
1
2
3
4
5
x
0
1
2
3
4
5
y
f1(x,y)
'fit3.dat' in 3 u 1:2:4



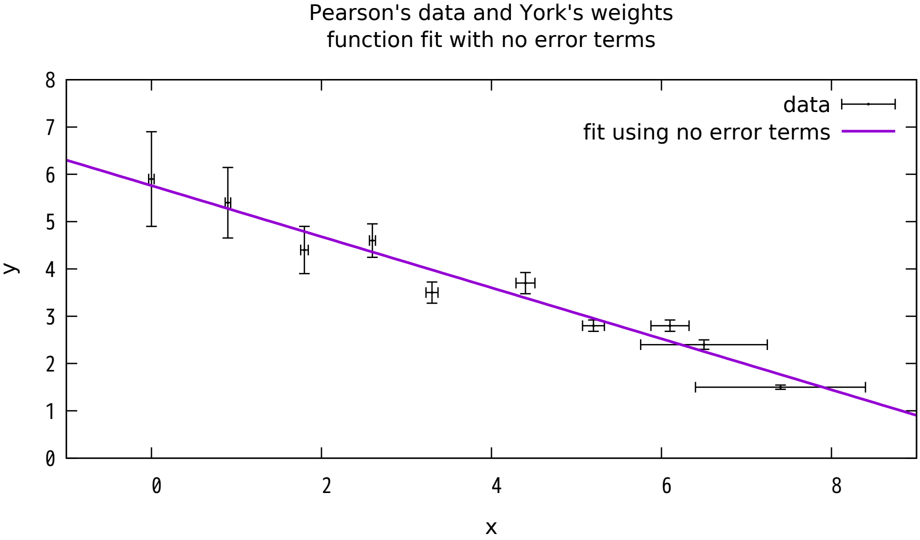
data for all indices t, initial parameters
z
3
2
1
0
-1
-2
-3
x
0
1
2
3
4
5
y
0
1
2
3
4
5
f(x,y,1)
'fit3.dat' u 1:2:4



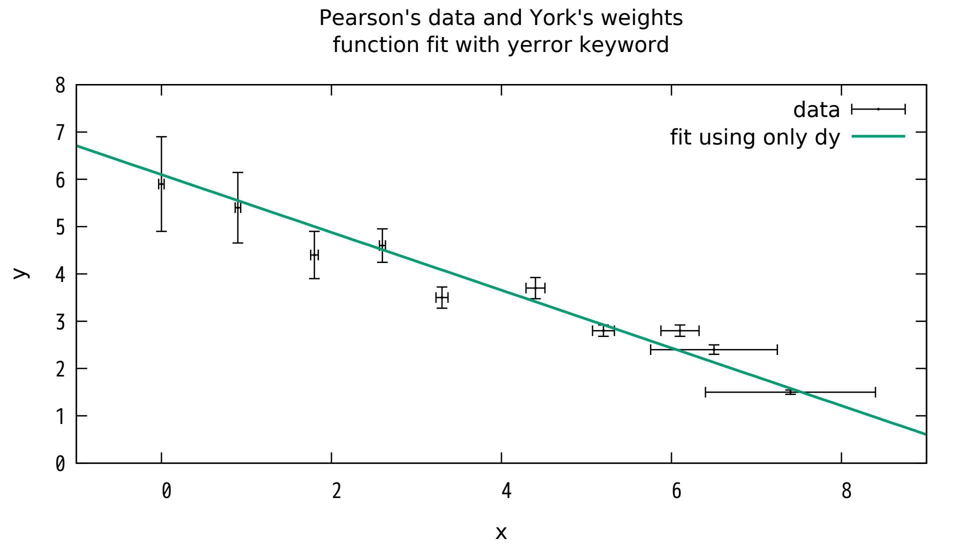
fit to all data
z
3
2
1
0
-1
-2
-3
0
1
2
3
4
5
x
0
1
2
3
4
5
y
f(x,y,3)
'fit3.dat' in 3 u 1:2:4
f(x,y,1)
'fit3.dat' in 2 u 1:2:4
f(x,y,-1)
'fit3.dat' in 1 u 1:2:4
f(x,y,-3)
'fit3.dat' in 0 u 1:2:4



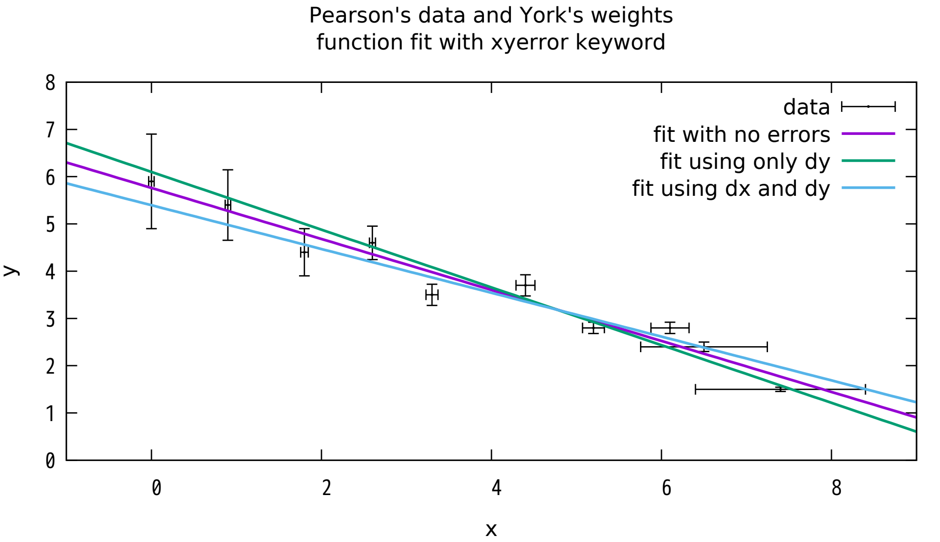
Pearson's data and York's weights
original data and the initial function
data
initial function
y
x
0
1
2
3
4
5
6
7
8
0
2
4
6
8



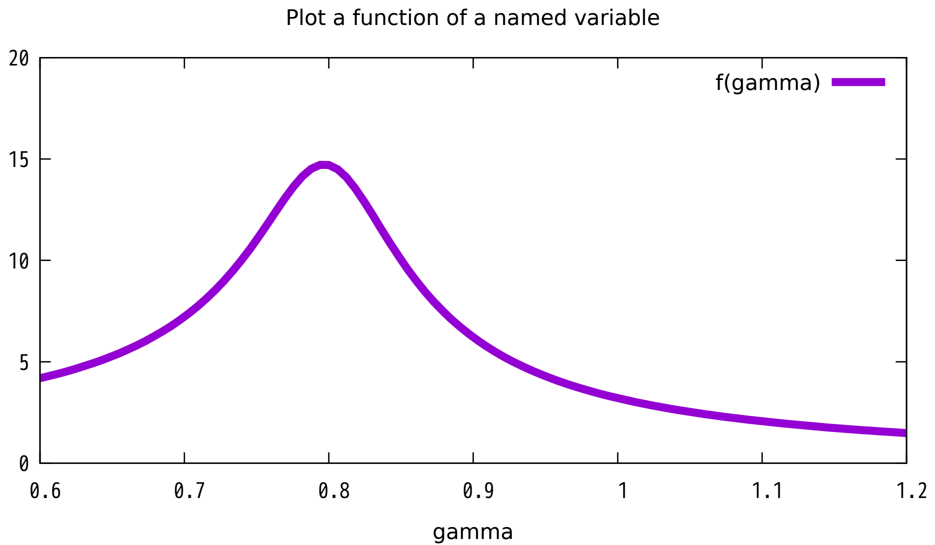
Pearson's data and York's weights
function fit with no error terms
data
fit using no error terms
y
x
0
1
2
3
4
5
6
7
8
0
2
4
6
8



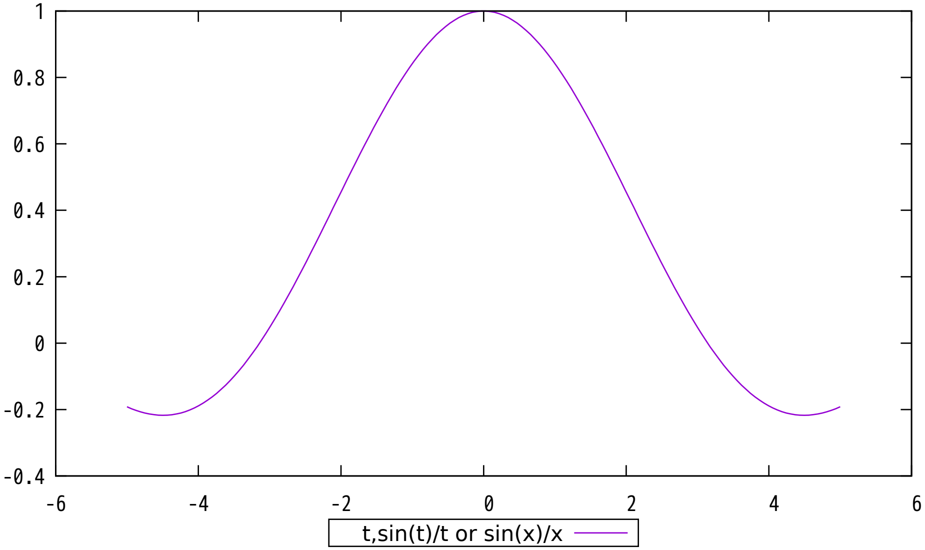
Pearson's data and York's weights
function fit with yerror keyword
data
fit using only dy
y
x
0
1
2
3
4
5
6
7
8
0
2
4
6
8



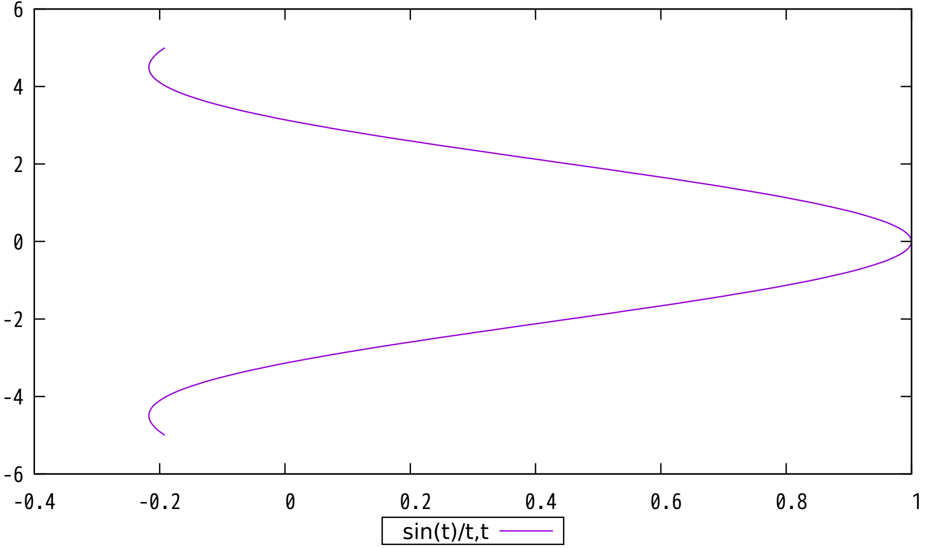
Pearson's data and York's weights
function fit with xyerror keyword
data
fit with no errors
fit using only dy
fit using dx and dy
y
x
0
1
2
3
4
5
6
7
8
0
2
4
6
8



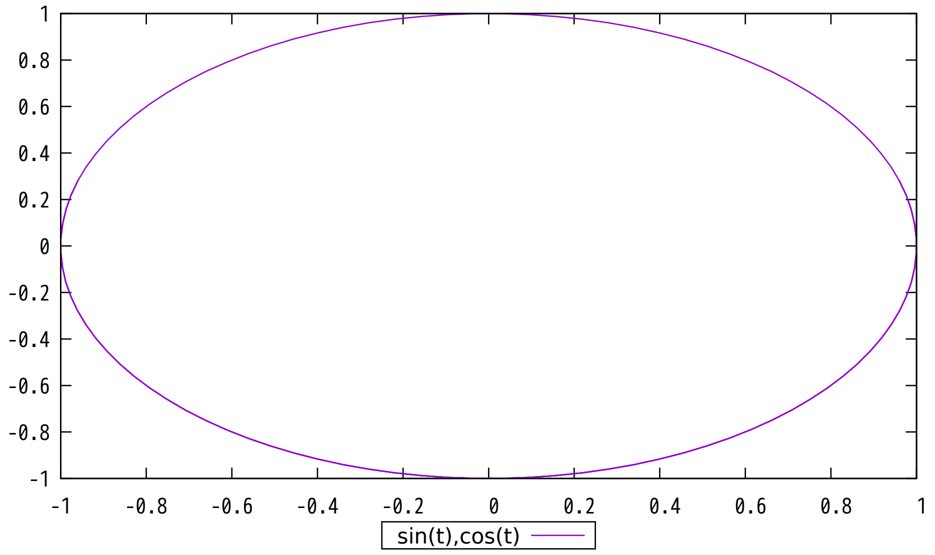
Plot a function of a named variable
f(gamma)
20
15
10
5
0
0.6
0.7
0.8
0.9
1
1.1
1.2
gamma

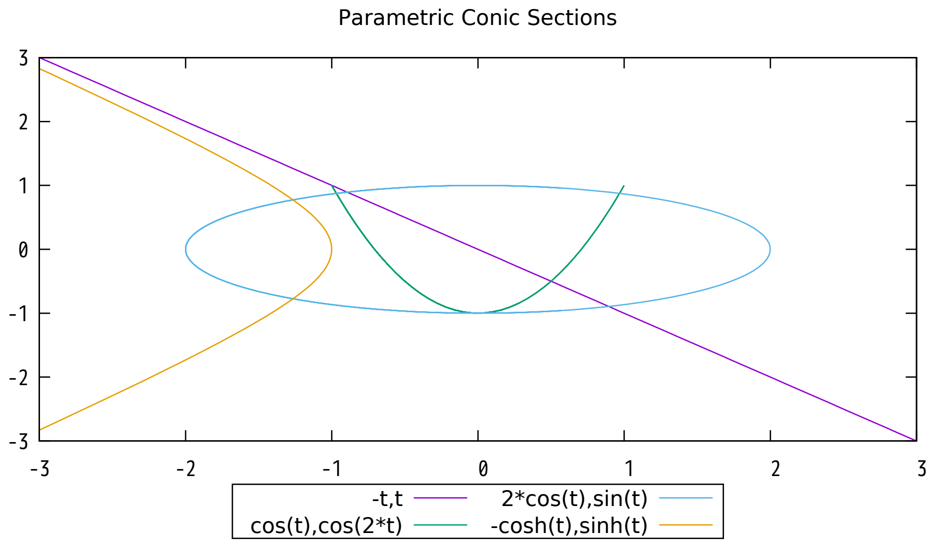


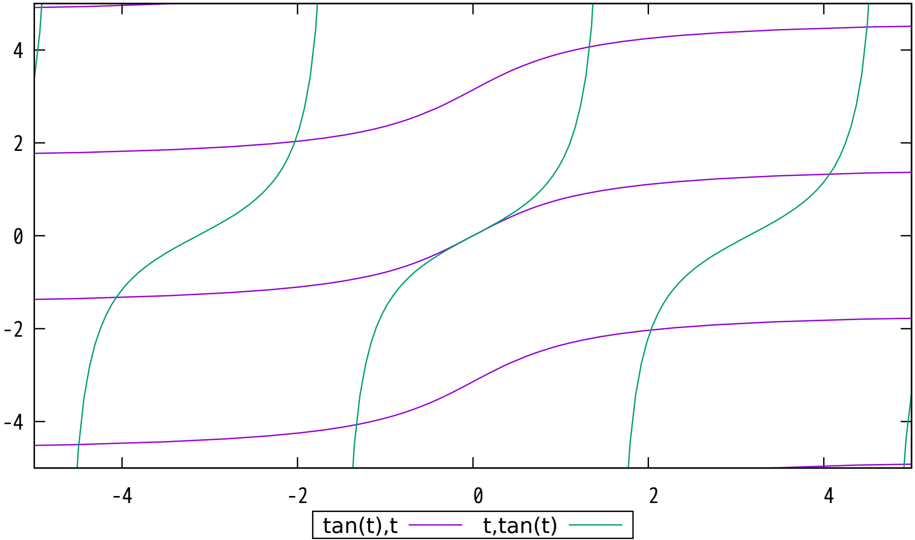
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-6
-4
-2
0
2
4
6
t,sin(t)/t or sin(x)/x

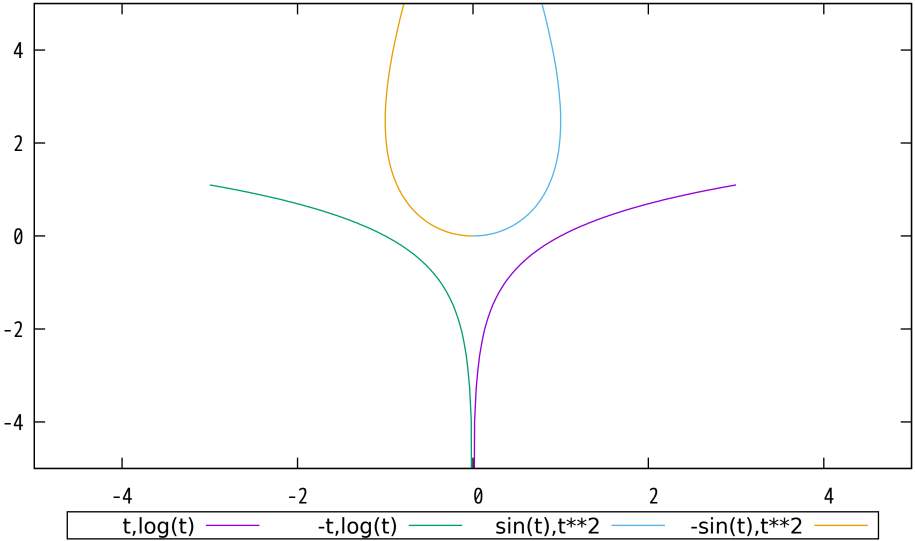


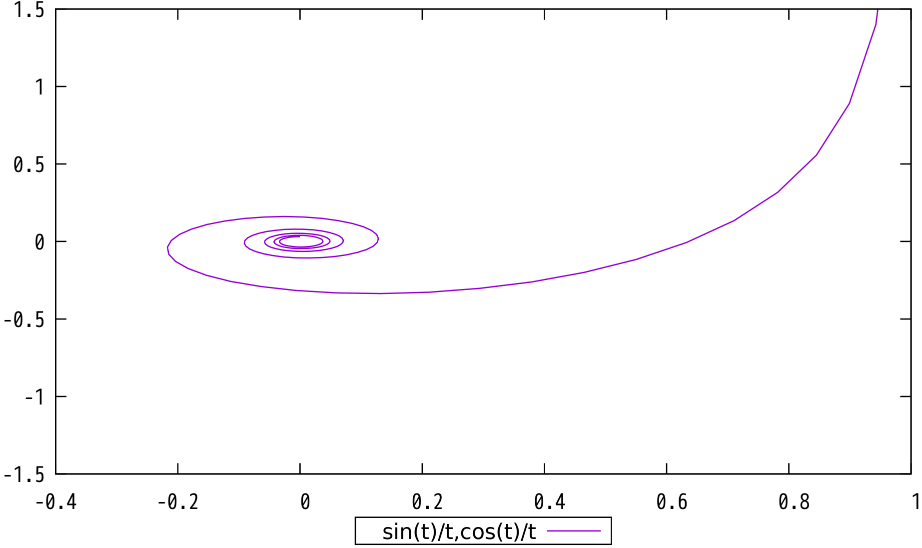
6
4
2
0
-2
-4
-6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
sin(t)/t,t


1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
sin(t),cos(t)


Parametric Conic Sections
3
2
1
0
-1
-2
-3
-3
-2
-1
0
1
2
3
-t,t
2*cos(t),sin(t)
cos(t),cos(2*t)
-cosh(t),sinh(t)

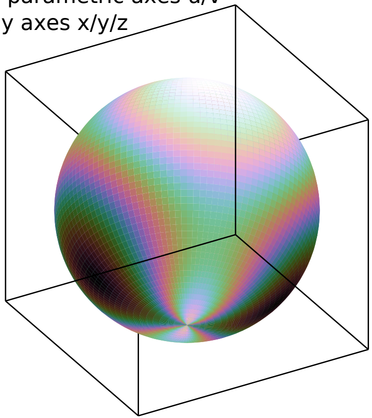

4
2
0
-2
-4
-4
-2
0
2
4
tan(t),t
t,tan(t)

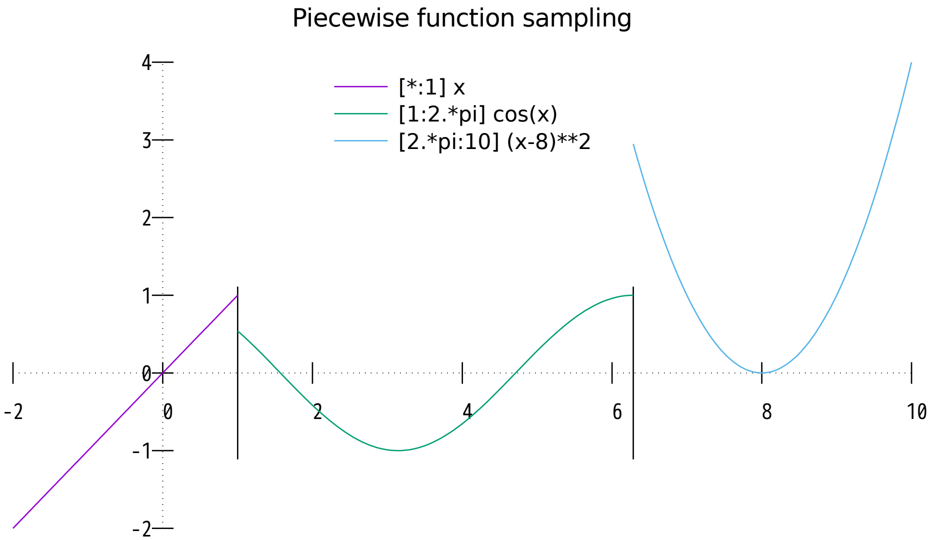

4
2
0
-2
-4
-4
-2
0
2
4
t,log(t)
-t,log(t)
sin(t),t**2
-sin(t),t**2



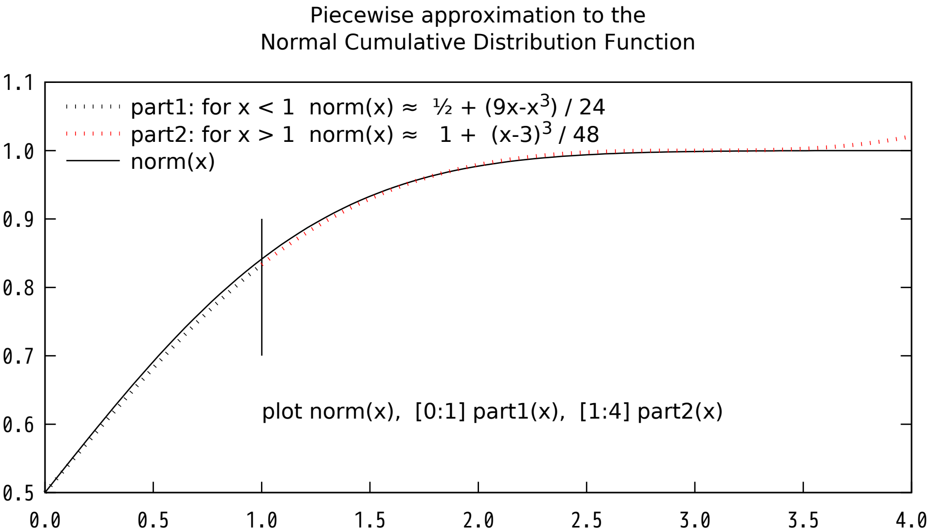
1.5
1
0.5
0
-0.5
-1
-1.5
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
sin(t)/t,cos(t)/t

Decouple range of parametric axes u/v
from that of display axes x/y/z

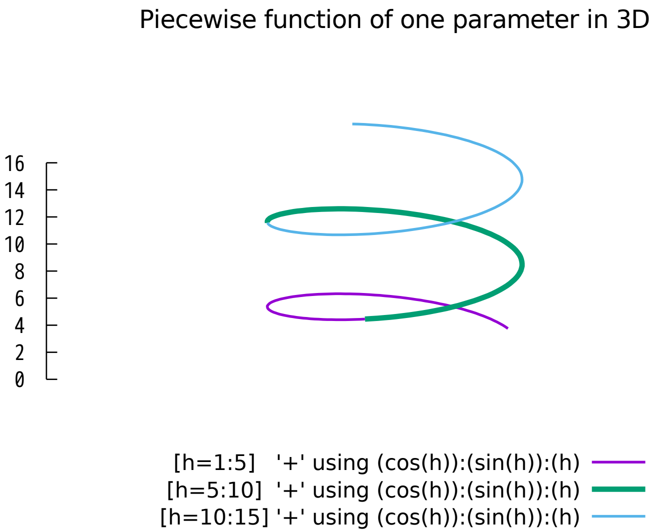


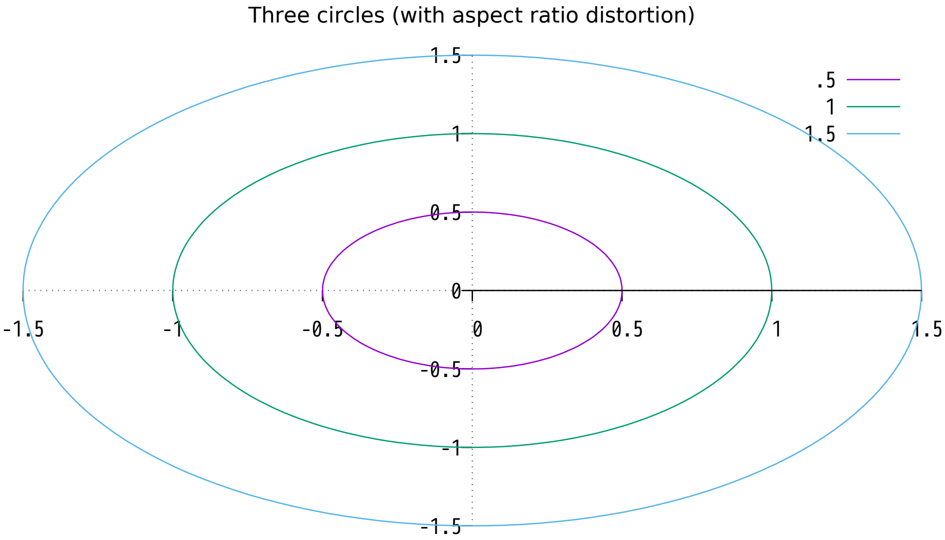


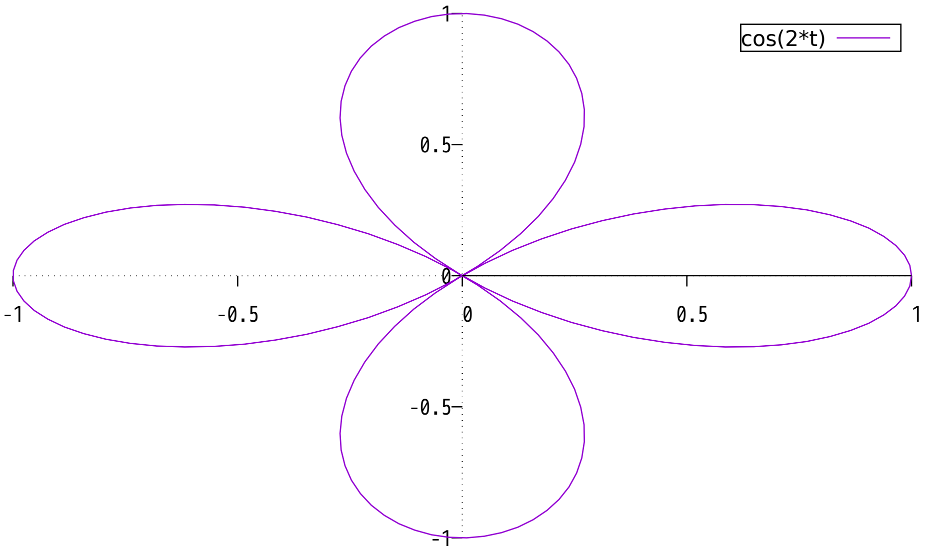
Piecewise function sampling
[*:1] x
[1:2.*pi] cos(x)
[2.*pi:10] (x-8)**2
4
3
2
1
0
-1
-2
-2
0
2
4
6
8
10



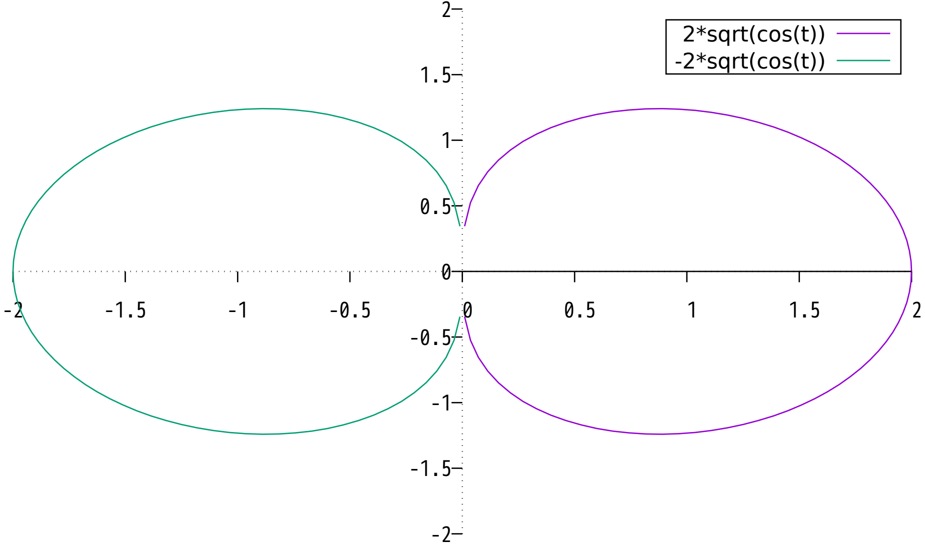
Piecewise approximation to the
Normal Cumulative Distribution Function
part1: for x < 1 norm(x) ≈ ½ + (9x-x3) / 24
part2: for x > 1 norm(x) ≈ 1 + (x-3)3 / 48
norm(x)
plot norm(x), [0:1] part1(x), [1:4] part2(x)
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0


Piecewise function of one parameter in 3D
16
14
12
10
8
6
4
2
0
[h=1:5] '+' using (cos(h)):(sin(h)):(h)
[h=5:10] '+' using (cos(h)):(sin(h)):(h)
[h=10:15] '+' using (cos(h)):(sin(h)):(h)

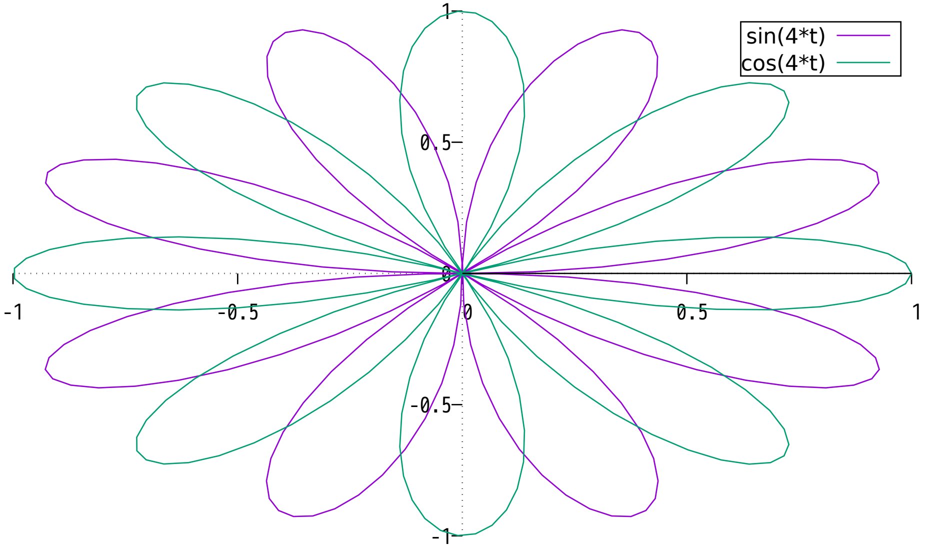

Three circles (with aspect ratio distortion)
.5
1
1.5
1.5
1
0.5
0
-0.5
-1
-1.5
-1.5
-1
-0.5
0
0.5
1
1.5



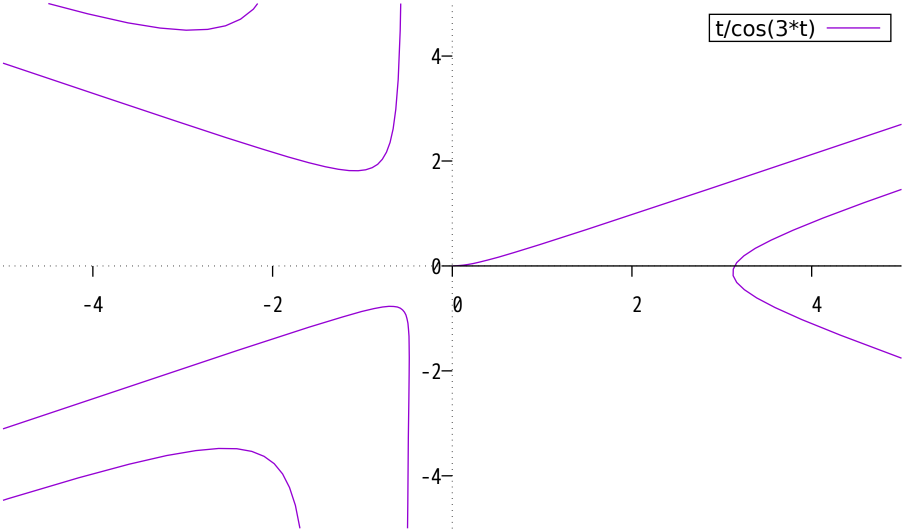
cos(2*t)
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1

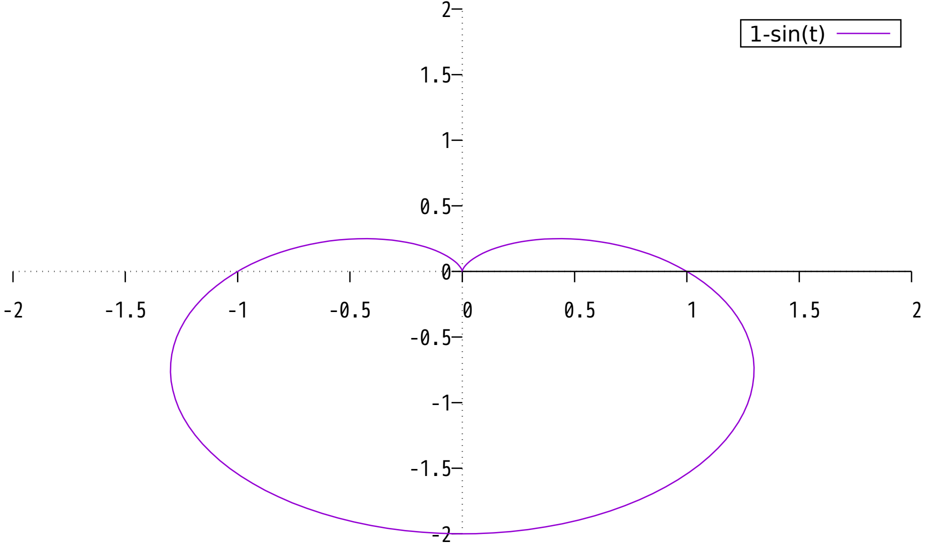


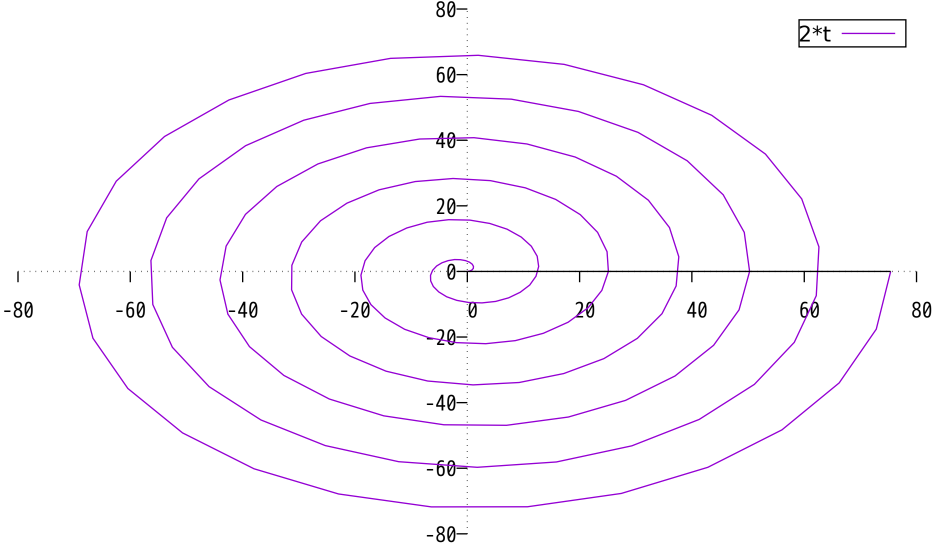
2*sqrt(cos(t))
-2*sqrt(cos(t))
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2



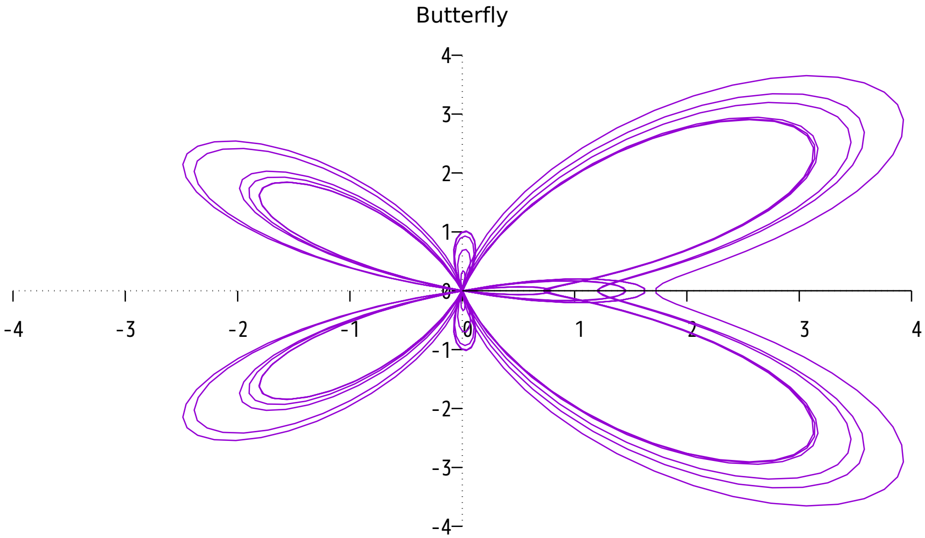
sin(4*t)
cos(4*t)
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1

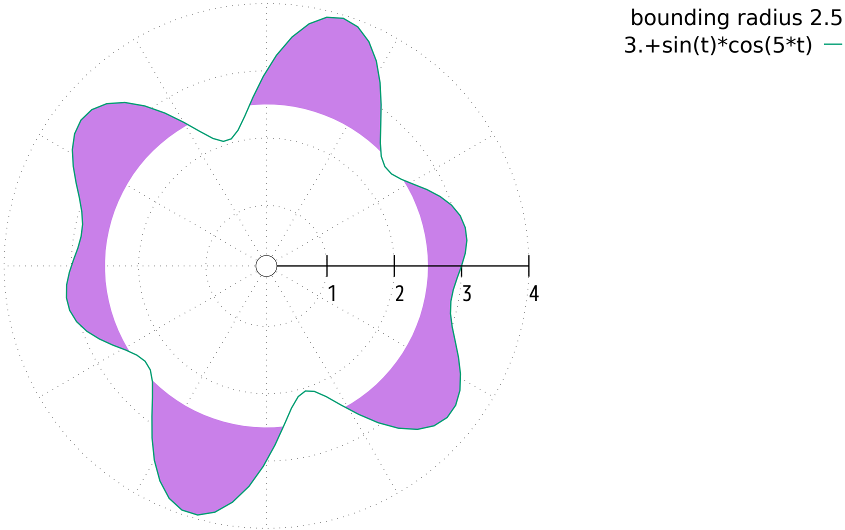

t/cos(3*t)
4
2
0
-2
-4
-4
-2
0
2
4


1-sin(t)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

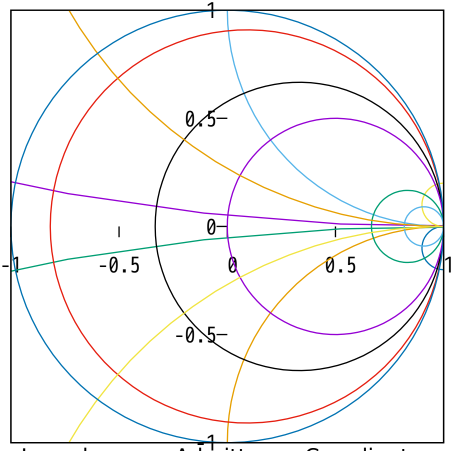


80
60
40
20
0
-20
-40
-60
-80
-80
-60
-40
-20
0
20
40
60
80
2*t


Butterfly
4
3
2
1
0
-1
-2
-3
-4
-4
-3
-2
-1
0
1
2
3
4

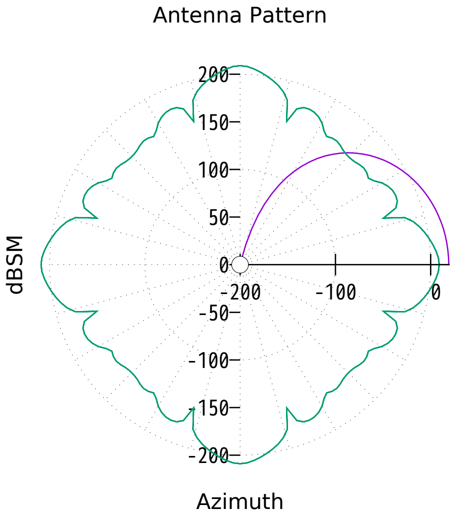

bounding radius 2.5
3.+sin(t)*cos(5*t)
1
2
3
4

Primitive Smith Chart



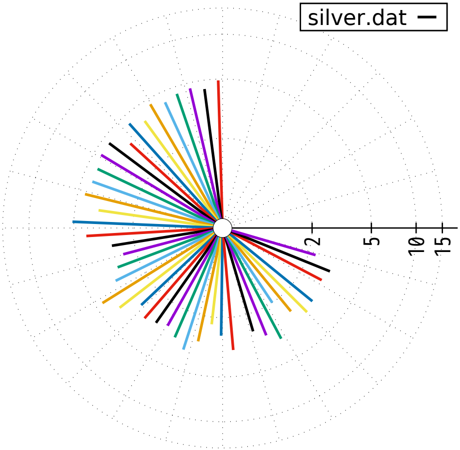
Impedance or Admittance Coordinates

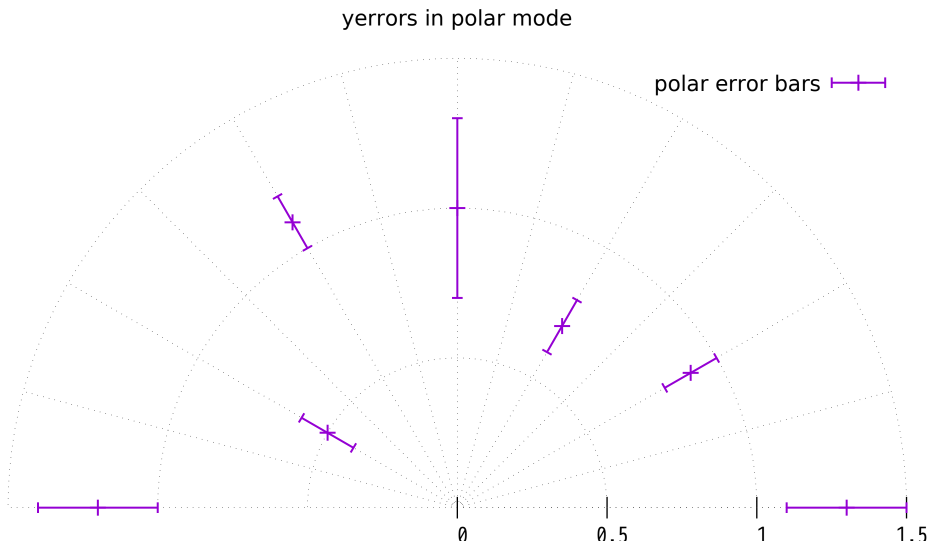
(金) 11月 30 11:48:59 2018



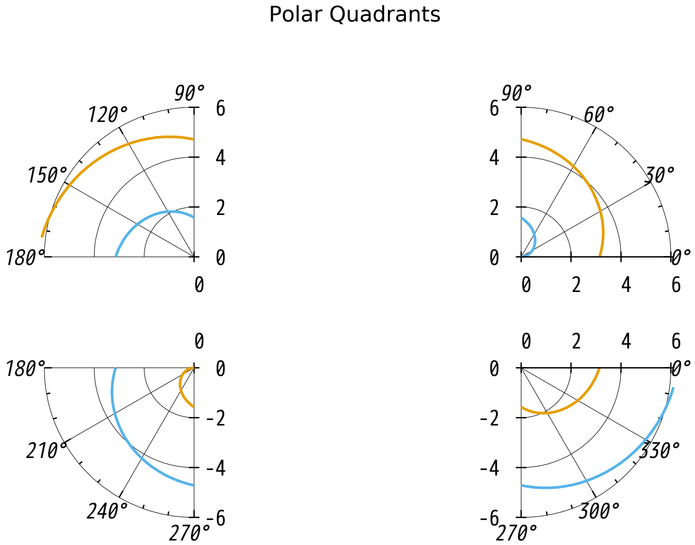
(金) 11月 30 11:48:59 2018

log scale polar axis, trange in degrees

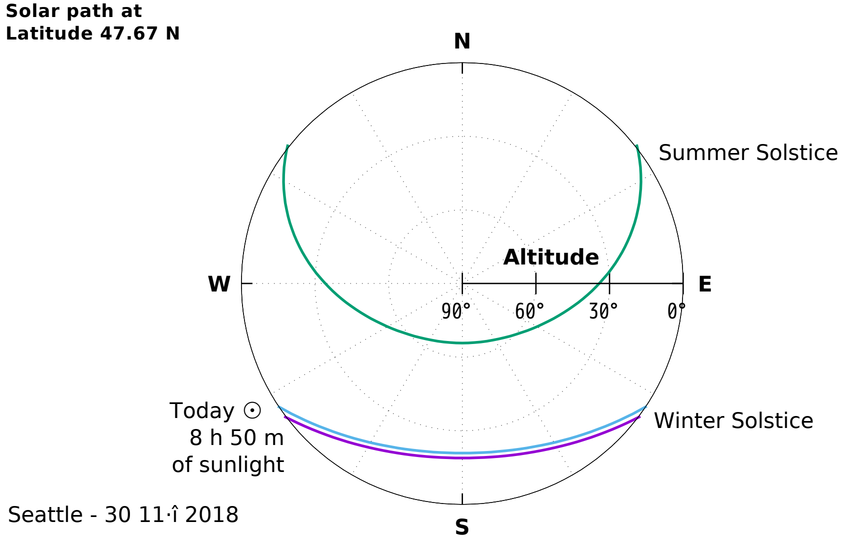




yerrors in polar mode
polar error bars
0
0.5
1
1.5

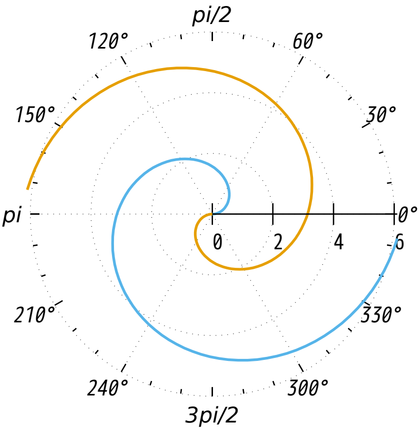


Polar Quadrants
90°
120°
150°
180°
6
4
2
0
0
90°
60°
30°
0°
6
4
2
0
0
2
4
6
0
180°
210°
240°
270°
0
-2
-4
-6
0
2
4
6
0
0°
-2
-4
-6
330°
300°
270°

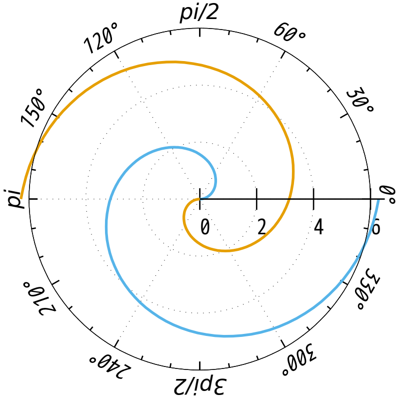


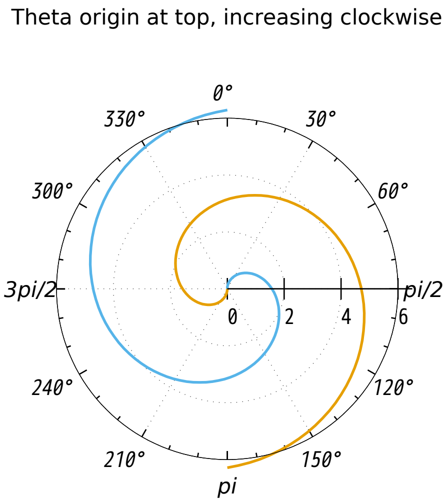
Solar path at
Latitude 47.67 N
N
Summer Solstice
Altitude
W
E
90°
60°
30°
0°
Today ☉
8 h 50 m
of sunlight
Winter Solstice
Seattle - 30 11·î 2018
S

Angle labels (ttics) for polar plots

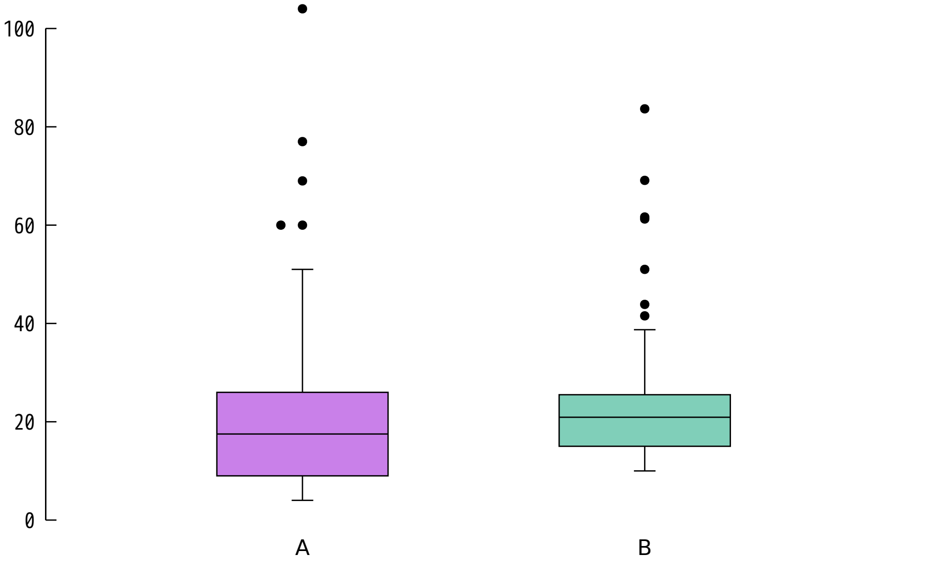


Polar plot with border and rotated labels for ttics

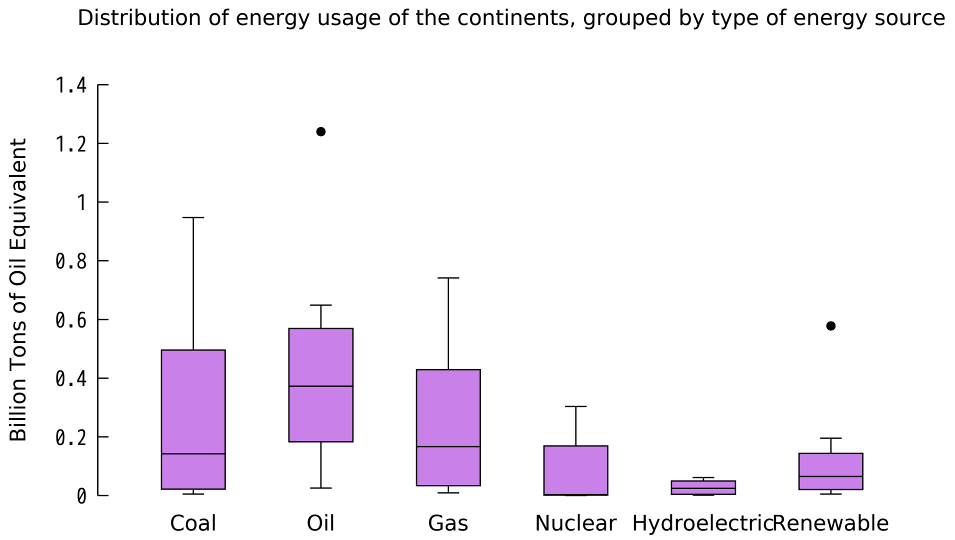




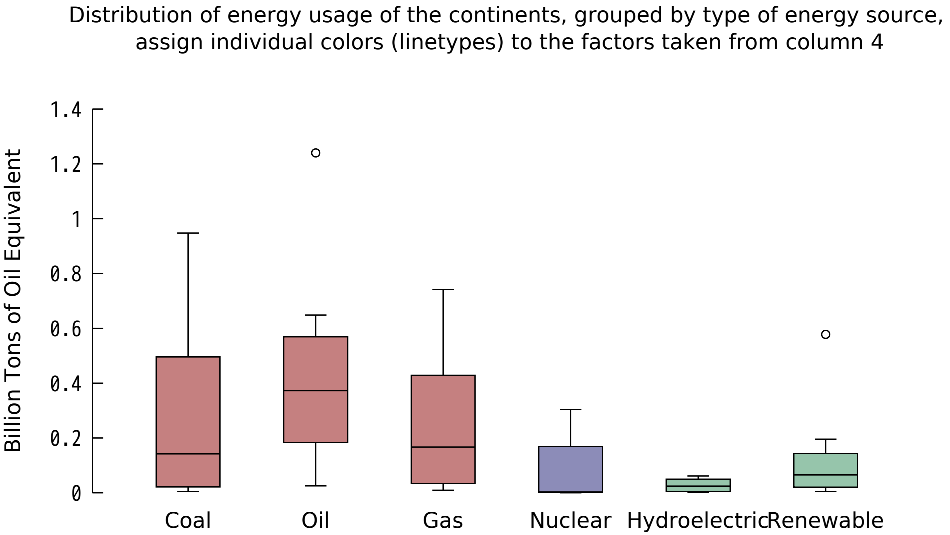
Theta origin at top, increasing clockwise
0°
30°
60°
pi/2
120°
150°
pi
210°
240°
3pi/2
300°
330°
0
2
4
6

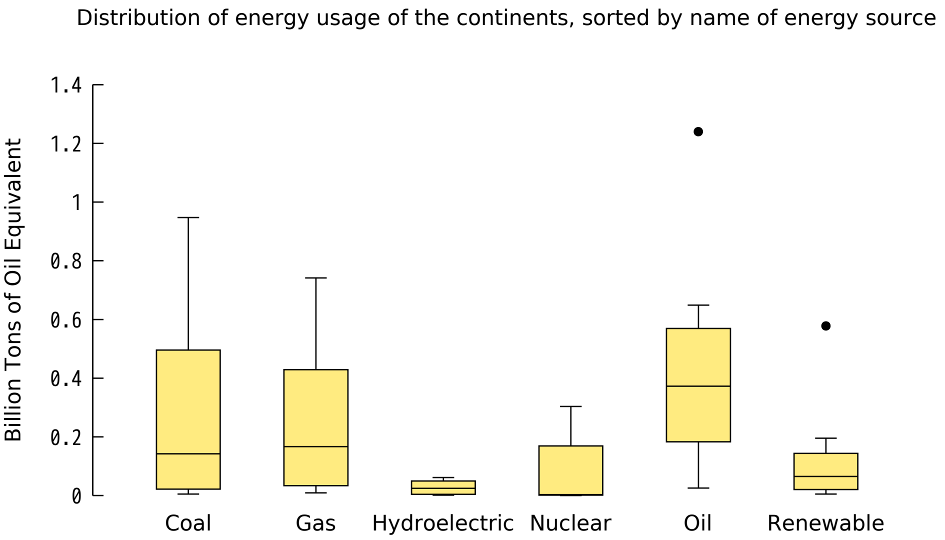


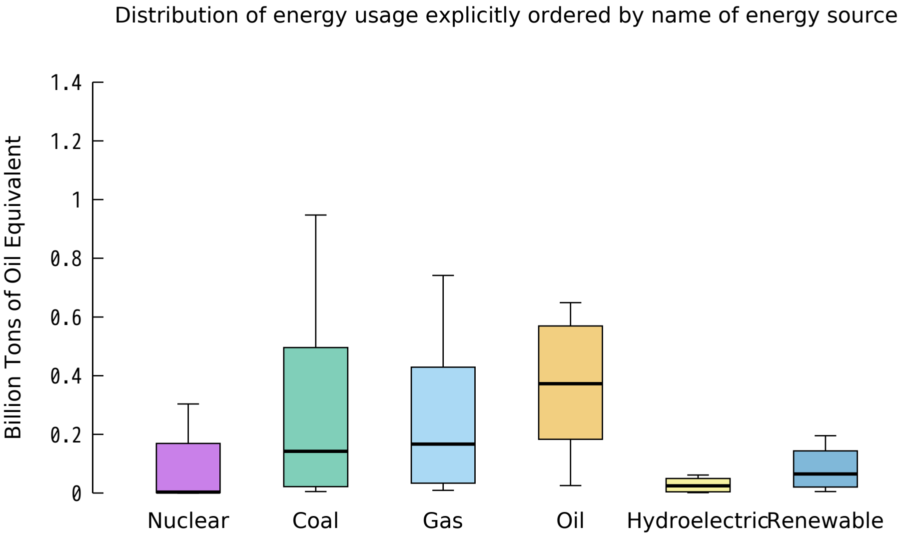
100
80
60
40
20
0
A
B

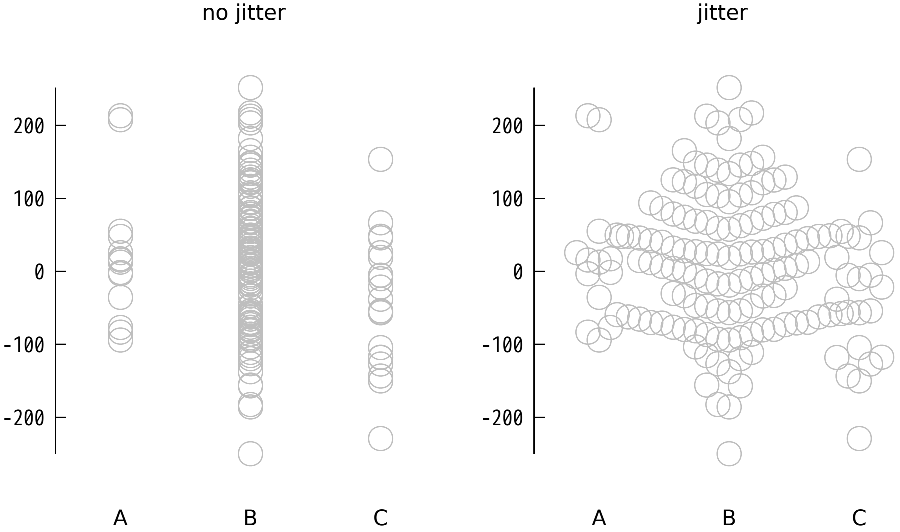


Distribution of energy usage of the continents, grouped by type of energy source
Billion Tons of Oil Equivalent
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Coal
Oil
Gas
Nuclear
Hydroelectric
Renewable

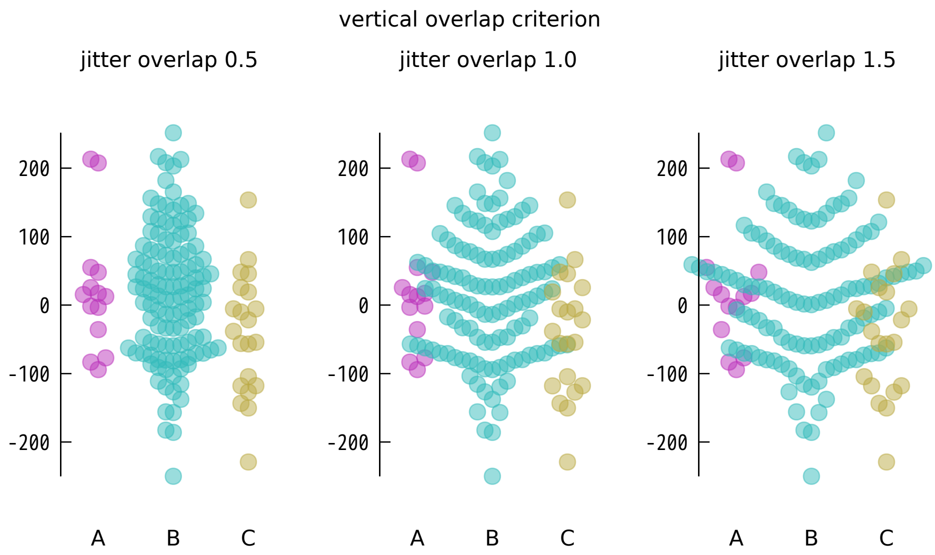

Distribution of energy usage of the continents, grouped by type of energy source,
assign individual colors (linetypes) to the factors taken from column 4
Billion Tons of Oil Equivalent
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Coal
Oil
Gas
Nuclear
Hydroelectric
Renewable

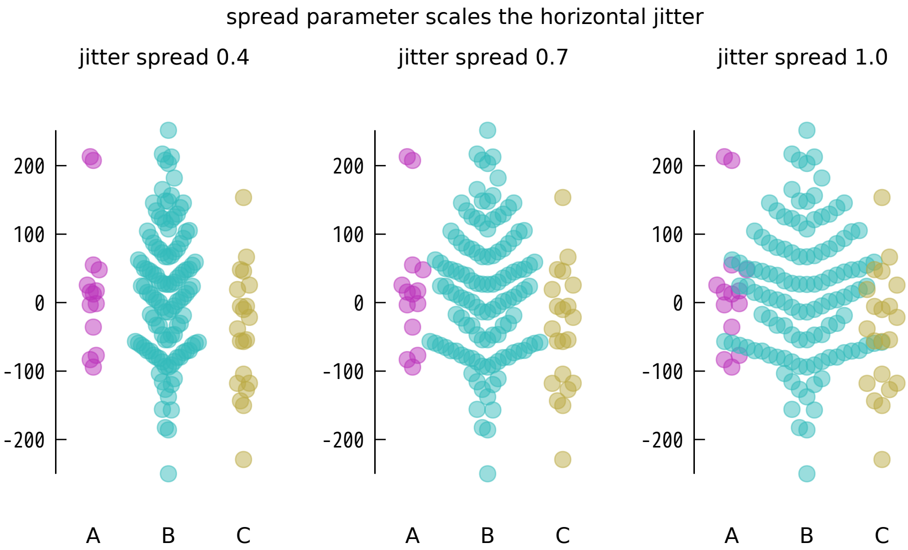

Distribution of energy usage of the continents, sorted by name of energy source
Billion Tons of Oil Equivalent
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Coal
Gas
Hydroelectric
Nuclear
Oil
Renewable


Distribution of energy usage explicitly ordered by name of energy source
Billion Tons of Oil Equivalent
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Nuclear
Coal
Gas
Oil
Hydroelectric
Renewable

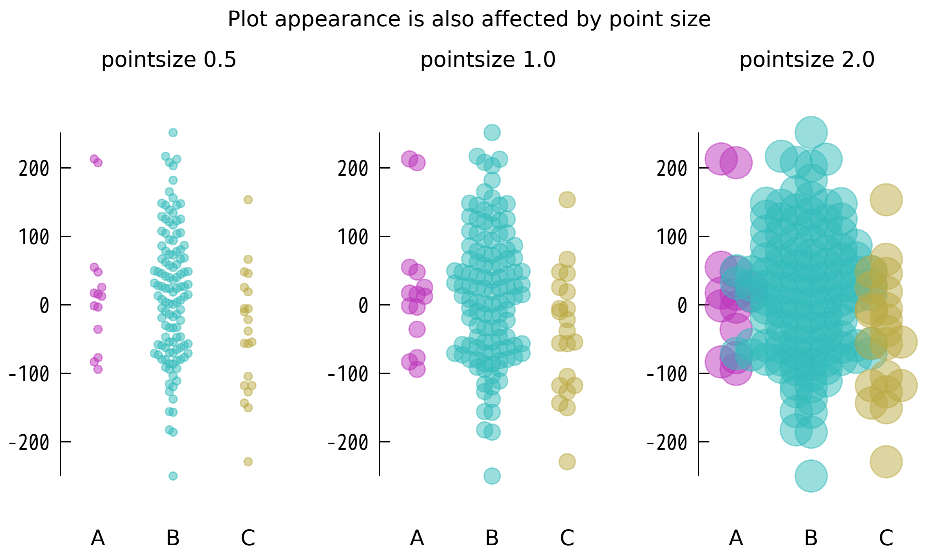


no jitter
jitter
200
100
0
-100
-200
A
B
C

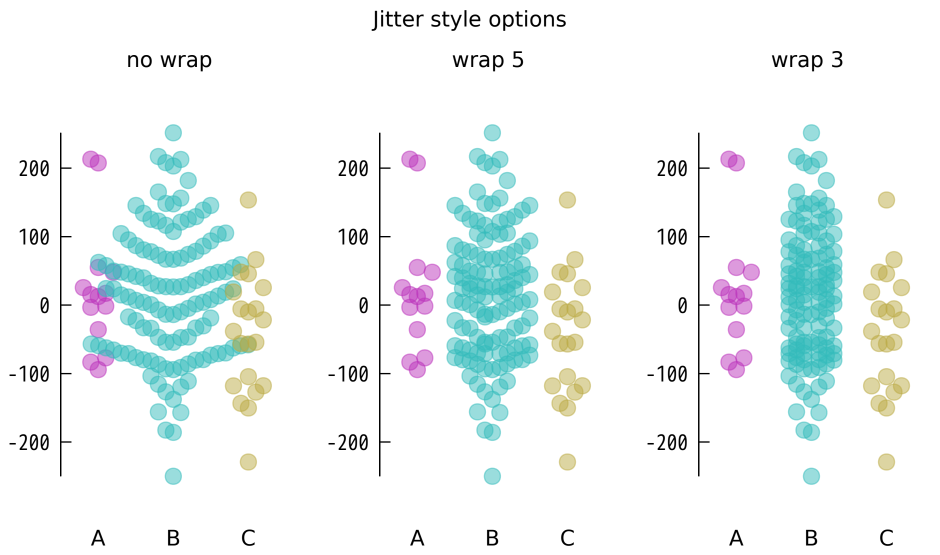

vertical overlap criterion
jitter overlap 0.5
jitter overlap 1.0
jitter overlap 1.5
200
100
0
-100
-200
A
B
C

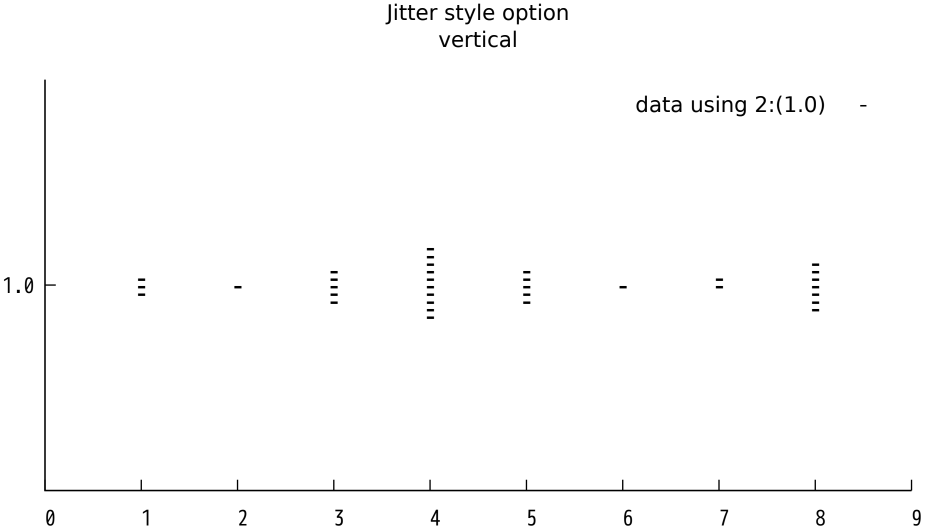


spread parameter scales the horizontal jitter
jitter spread 0.4
jitter spread 0.7
jitter spread 1.0
200
100
0
-100
-200
A
B
C

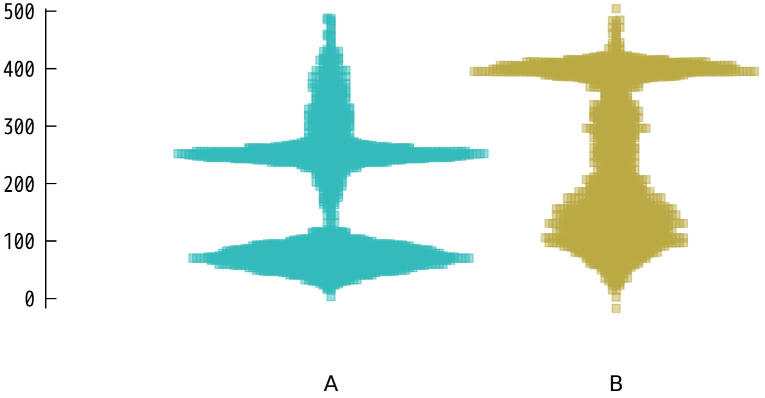

Plot appearance is also affected by point size
pointsize 0.5
pointsize 1.0
pointsize 2.0
200
100
0
-100
-200
A
B
C

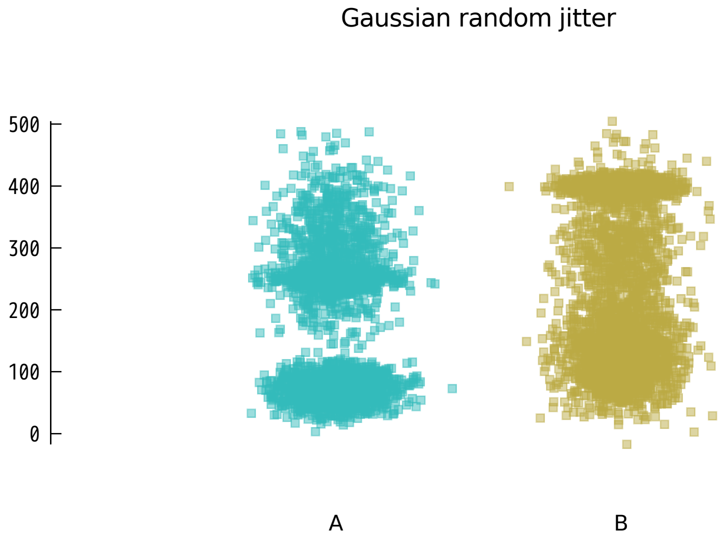
Jitter style options
swarm (default)
square
200
100
0
-100
-200
A
B
C
200
100
0
-100
-200
A
B
C


Jitter style options
no wrap
wrap 5
wrap 3
200
100
0
-100
-200
A
B
C

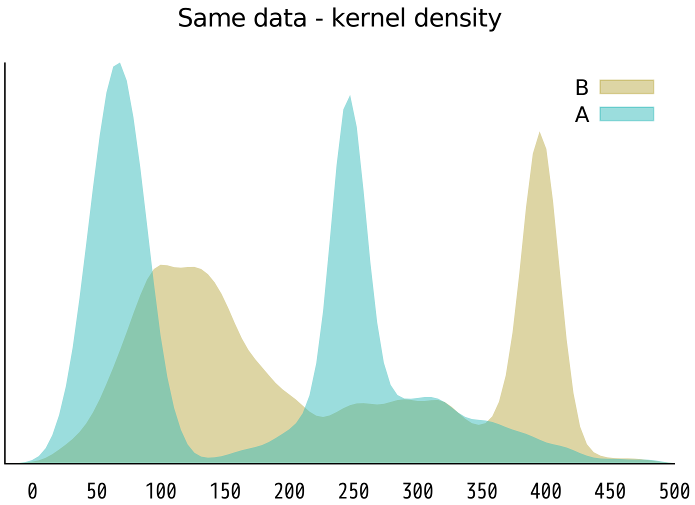

Jitter style option
vertical
data using 2:(1.0)
1.0
0
1
2
3
4
5
6
7
8
9

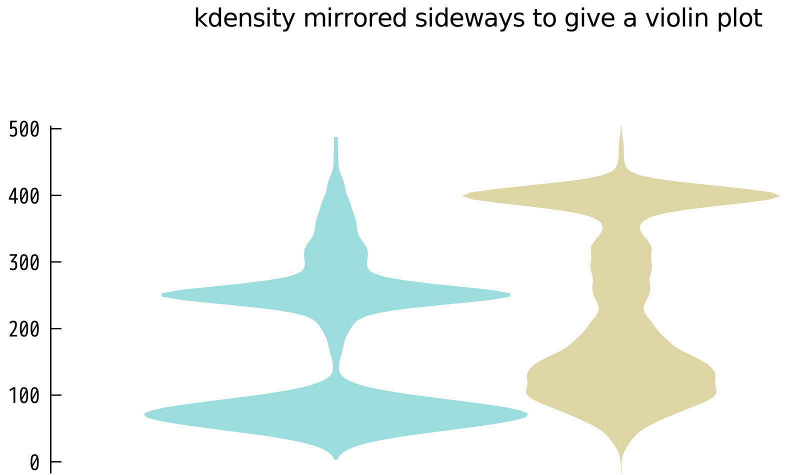
swarm jitter with a large number of points
approximates a violin plot



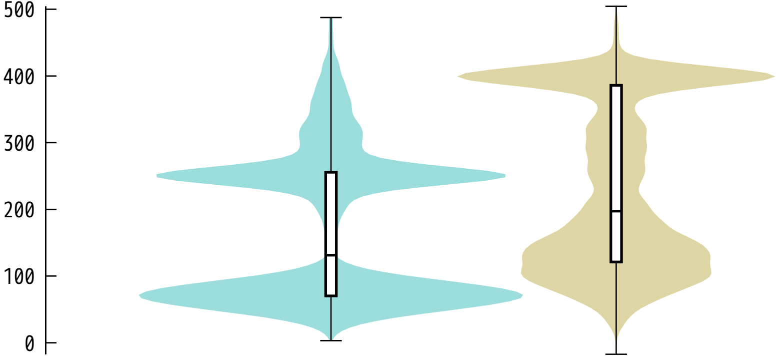


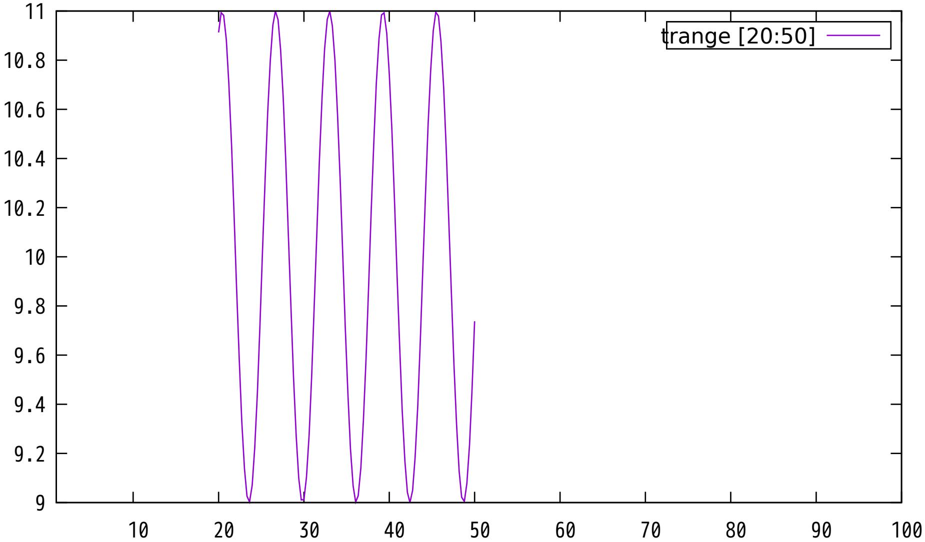
Gaussian random jitter
500
400
300
200
100
0
A
B

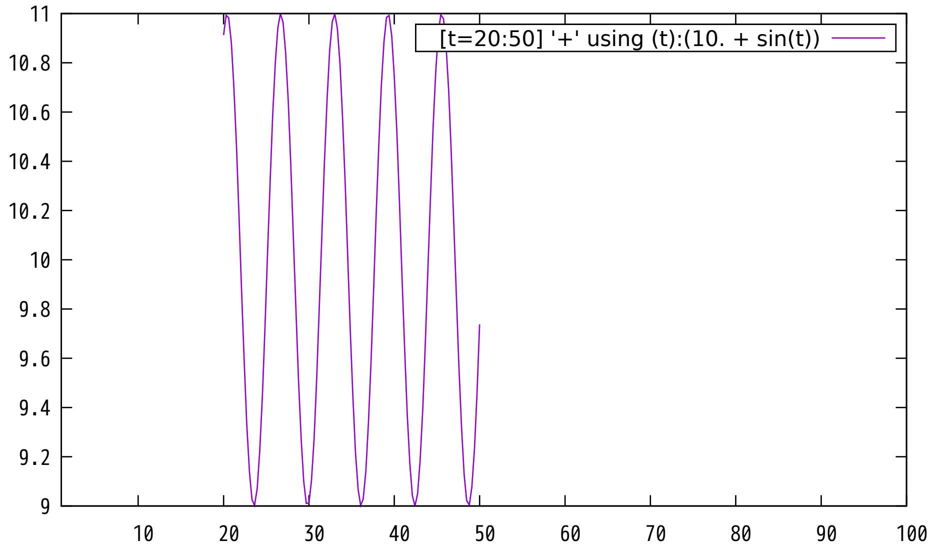

Same data - kernel density
B
A
0
50
100
150
200
250
300
350
400
450
500

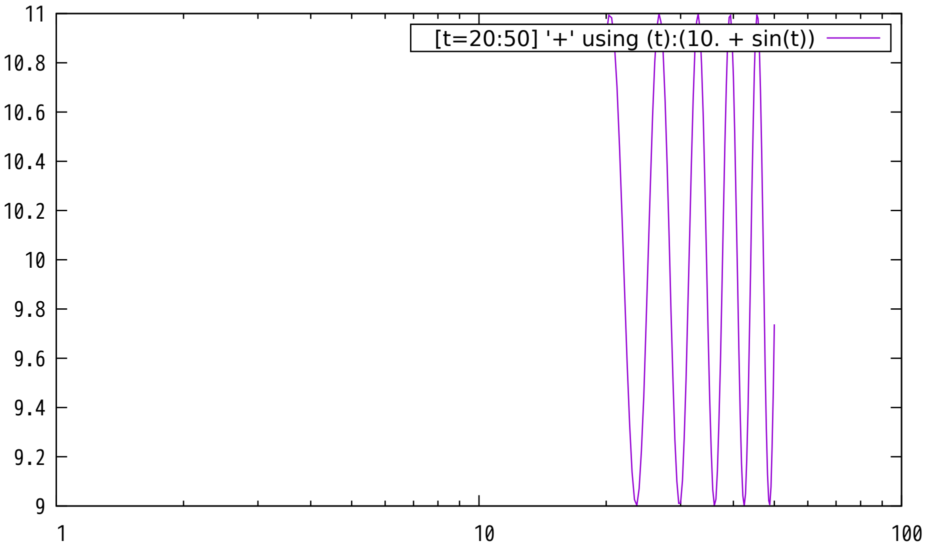

kdensity mirrored sideways to give a violin plot
500
400
300
200
100
0

Superimposed violin plot and box plot

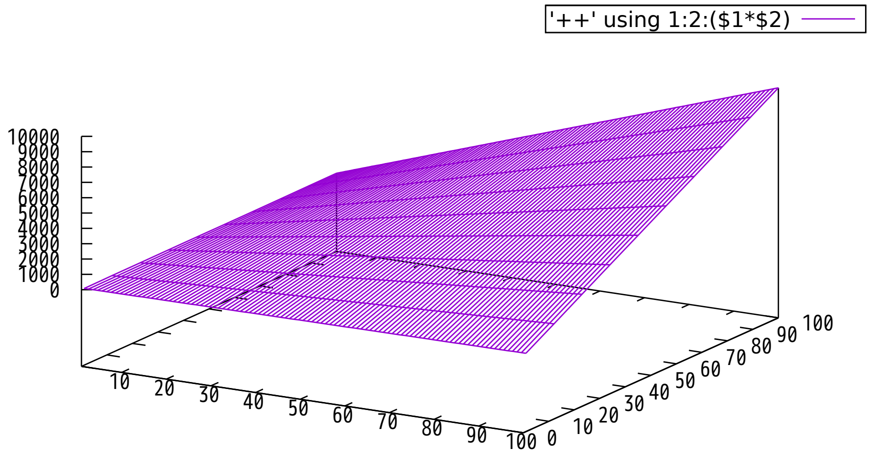


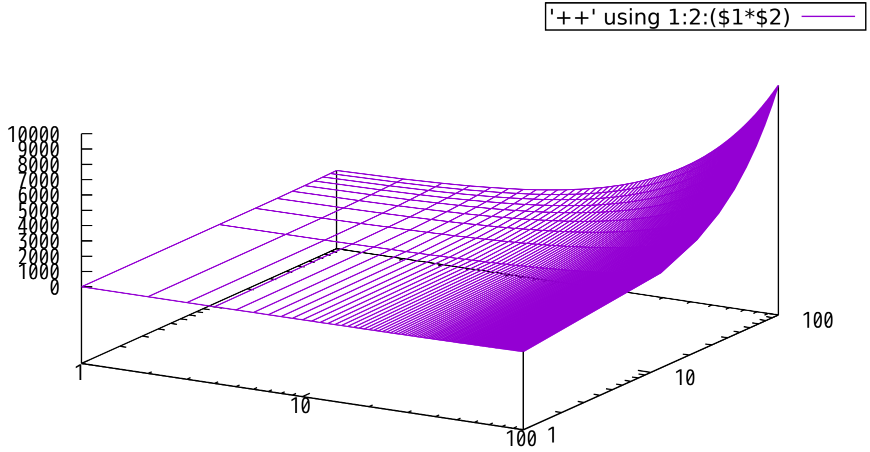

trange [20:50]
11
10.8
10.6
10.4
10.2
10
9.8
9.6
9.4
9.2
9
10
20
30
40
50
60
70
80
90
100


[t=20:50] '+' using (t):(10. + sin(t))
11
10.8
10.6
10.4
10.2
10
9.8
9.6
9.4
9.2
9
10
20
30
40
50
60
70
80
90
100

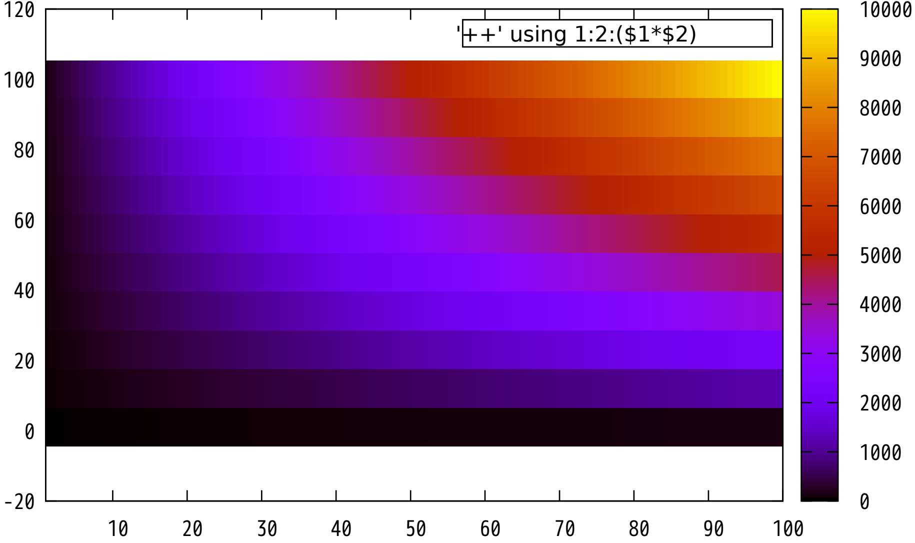


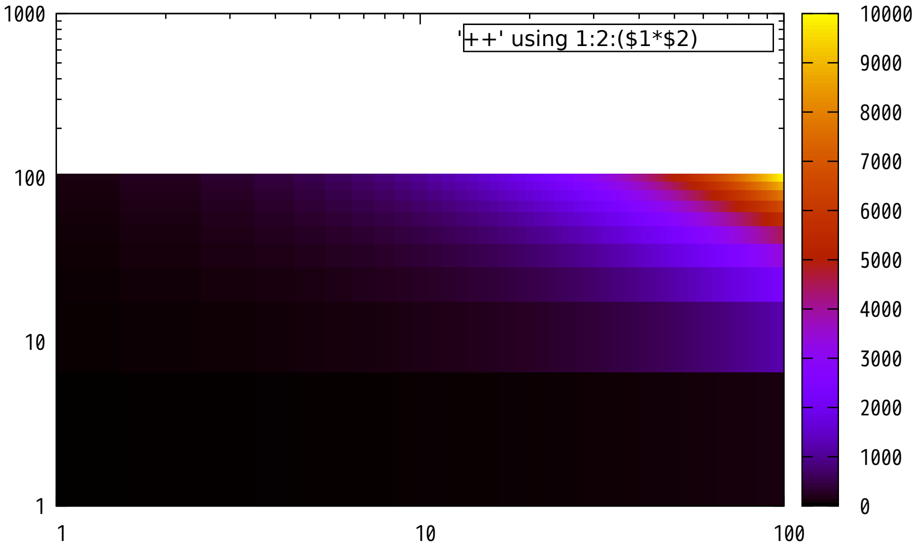
[t=20:50] '+' using (t):(10. + sin(t))
11
10.8
10.6
10.4
10.2
10
9.8
9.6
9.4
9.2
9
1
10
100


'++' using 1:2:($1*$2)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
10
20
30
40
50
60
70
80
90
100
0
10
20
30
40
50
60
70
80
90
100

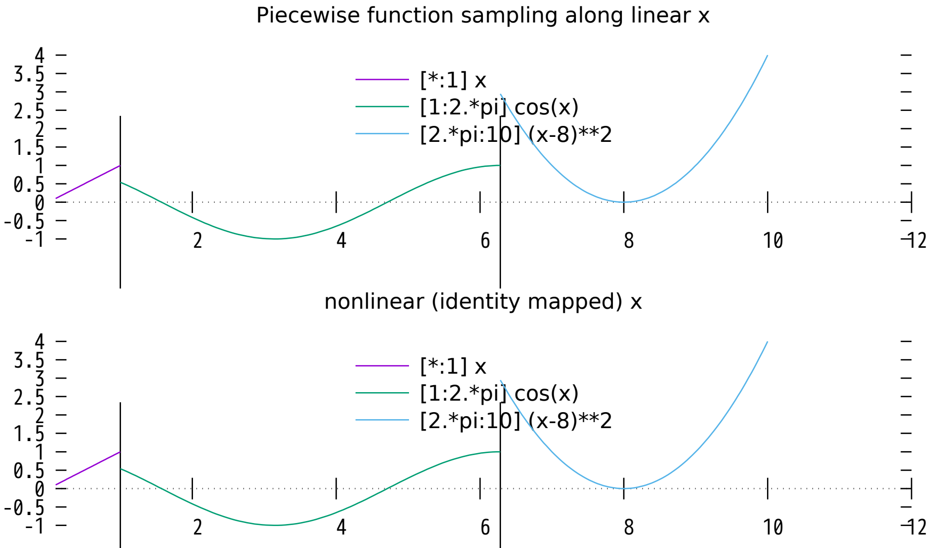


'++' using 1:2:($1*$2)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1
10
100
1
10
100

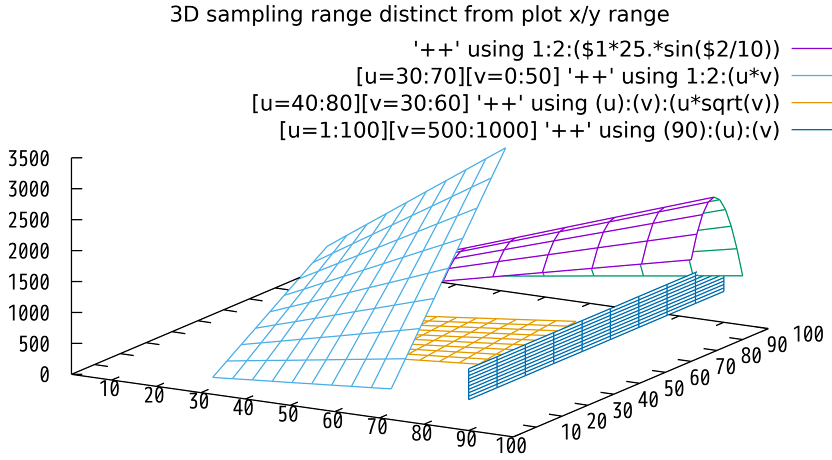

'++' using 1:2:($1*$2)
120
100
80
60
40
20
0
-20
10
20
30
40
50
60
70
80
90
100
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0

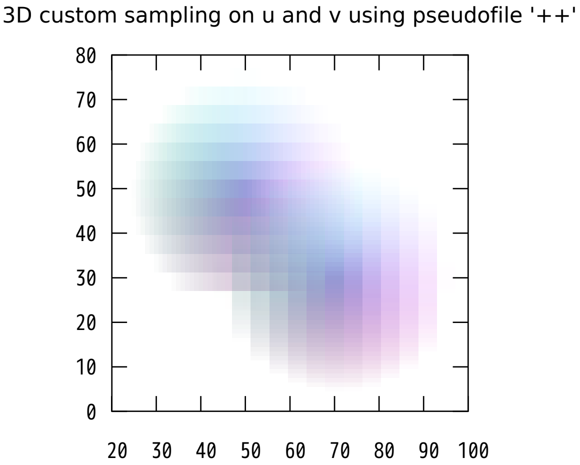


1000
100
10
1
1
10
100
'++' using 1:2:($1*$2)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0

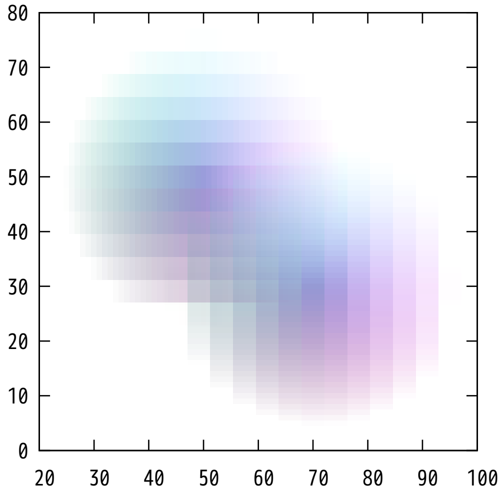


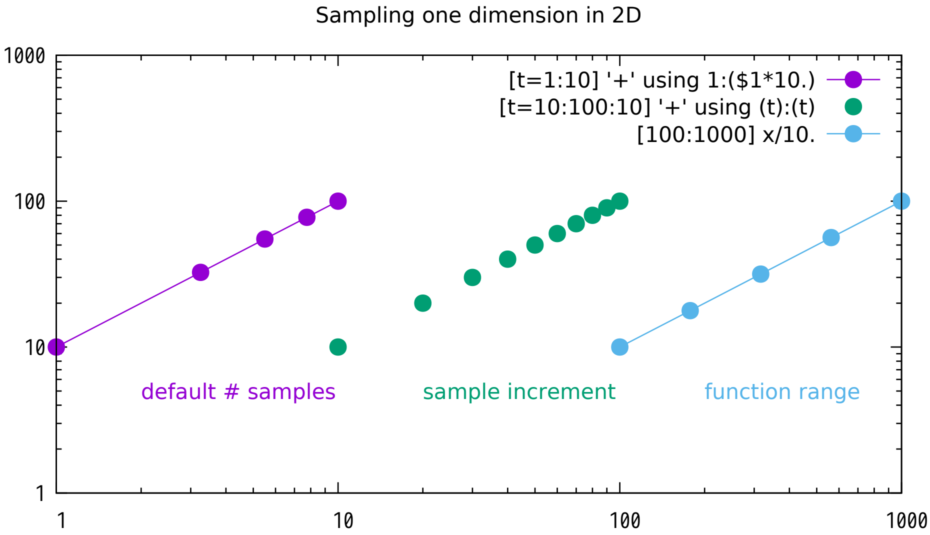
Piecewise function sampling along linear x
[*:1] x
[1:2.*pi] cos(x)
[2.*pi:10] (x-8)**2
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
2
4
6
8
10
12
nonlinear (identity mapped) x
[*:1] x
[1:2.*pi] cos(x)
[2.*pi:10] (x-8)**2
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
2
4
6
8
10
12


3D sampling range distinct from plot x/y range
'++' using 1:2:($1*25.*sin($2/10))
[u=30:70][v=0:50] '++' using 1:2:(u*v)
[u=40:80][v=30:60] '++' using (u):(v):(u*sqrt(v))
[u=1:100][v=500:1000] '++' using (90):(u):(v)
3500
3000
2500
2000
1500
1000
500
0
10 20 30 40 50 60 70 80 90 100
10 20 30 40 50 60 70 80 90 100


3D custom sampling on u and v using pseudofile '++'
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100

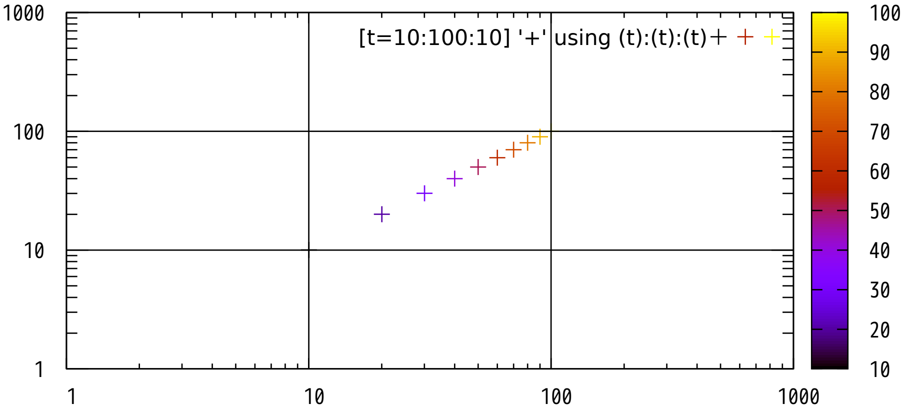
2D custom sampling on u and v using pseudofile '++'

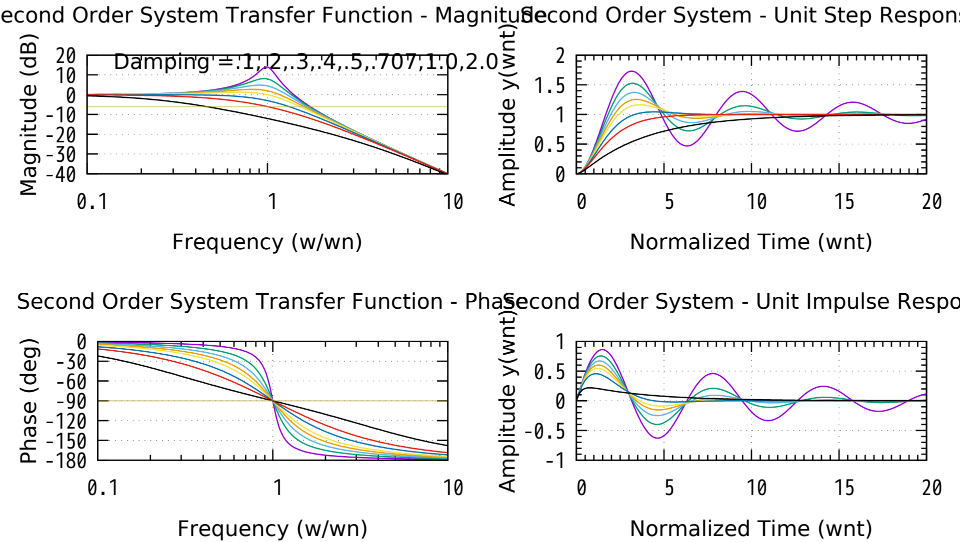




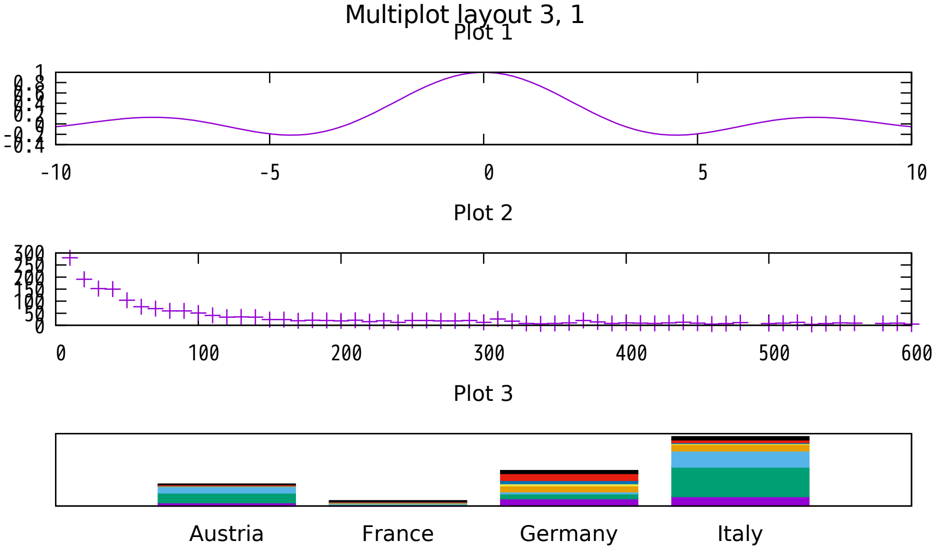
Sampling one dimension in 2D
[t=1:10] '+' using 1:($1*10.)
[t=10:100:10] '+' using (t):(t)
[100:1000] x/10.
default # samples
sample increment
function range
1000
100
10
1
1
10
100
1000

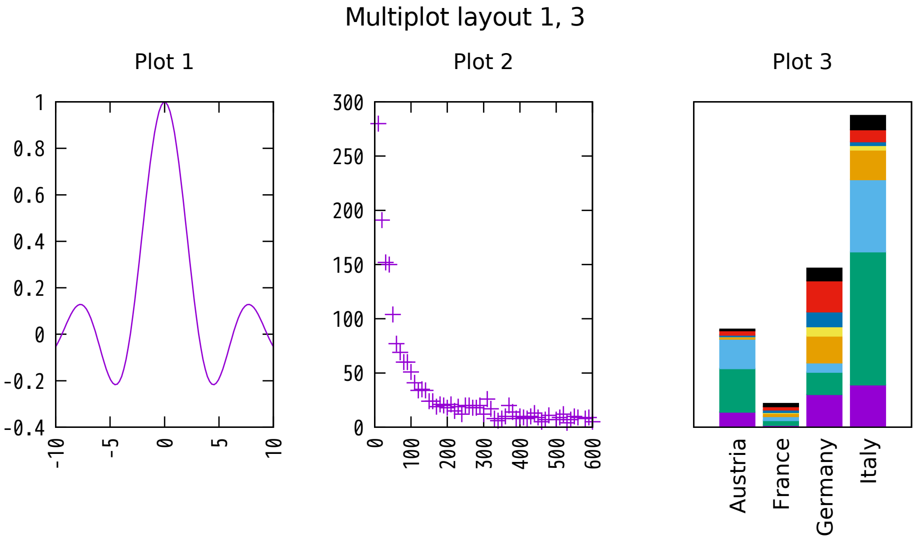
Sampling one dimension in 3D

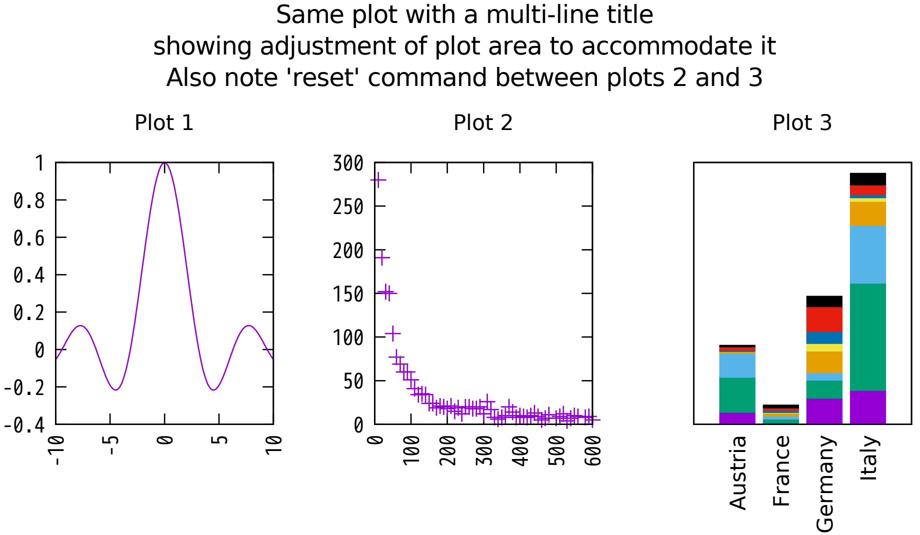


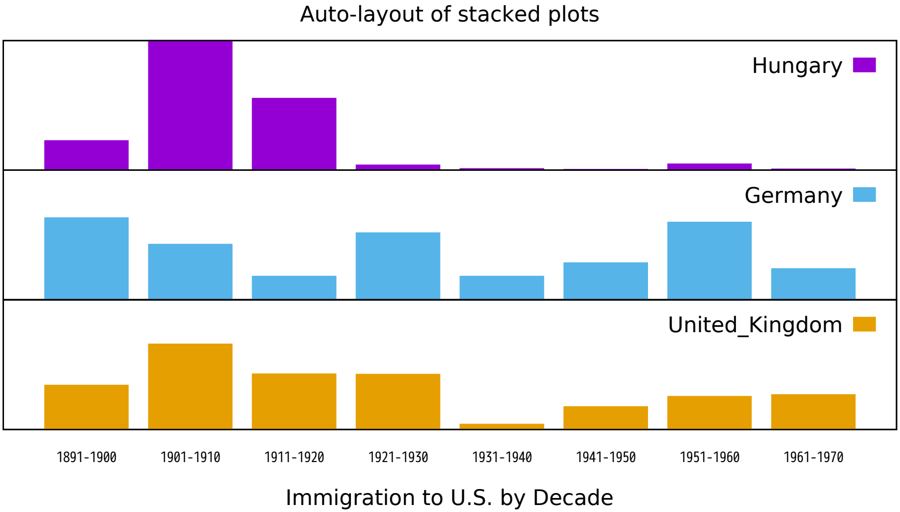


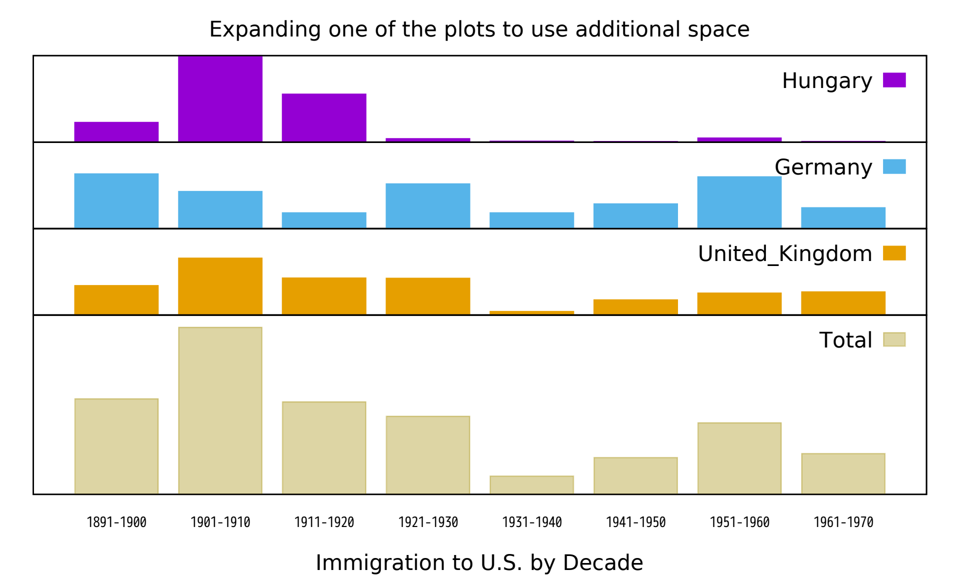
econd Order System Transfer Function - Magnitude
Damping =.1,.2,.3,.4,.5,.707,1.0,2.0
Magnitude (dB)
20
10
0
-10
-20
-30
-40
0.1
1
10
Frequency (w/wn)
Second Order System - Unit Step Respons
Amplitude y(wnt)
2
1.5
1
0.5
0
0
5
10
15
20
Normalized Time (wnt)
Second Order System Transfer Function - Phase
Phase (deg)
0
-30
-60
-90
-120
-150
-180
0.1
1
10
Frequency (w/wn)
Second Order System - Unit Impulse Respo
Amplitude y(wnt)
1
0.5
0
-0.5
-1
0
5
10
15
20
Normalized Time (wnt)


Multiplot layout 3, 1
Plot 1
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
Plot 2
300
250
200
150
100
50
0
0
100
200
300
400
500
600
Plot 3
Austria
France
Germany
Italy

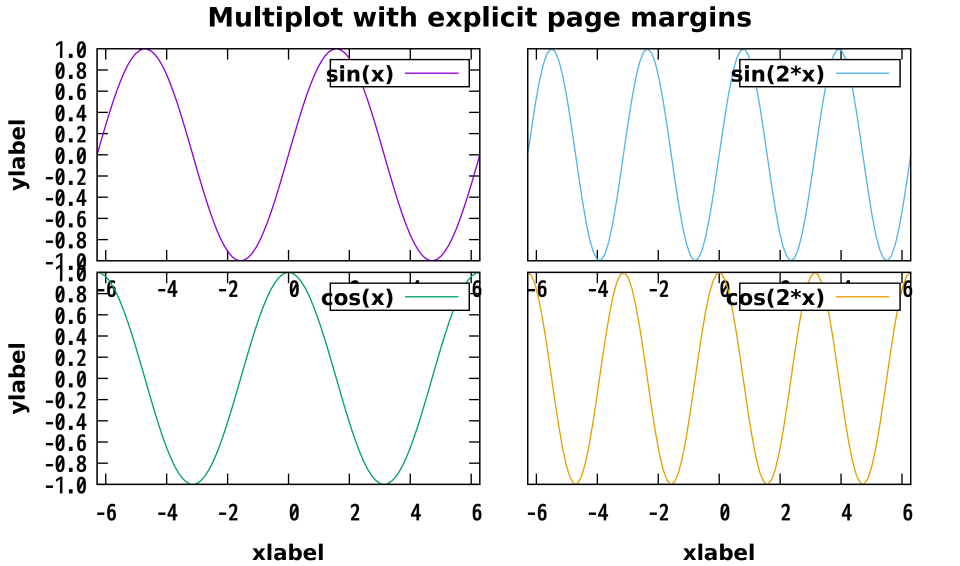

Multiplot layout 1, 3
Plot 1
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
Plot 2
300
250
200
150
100
50
0
0
100
200
300
400
500
600
Plot 3
Austria
France
Germany
Italy


Same plot with a multi-line title
showing adjustment of plot area to accommodate it
Also note 'reset' command between plots 2 and 3
Plot 1
Plot 2
Plot 3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
300
250
200
150
100
50
0
0
100
200
300
400
500
600
Austria
France
Germany
Italy


Auto-layout of stacked plots
Hungary
Germany
United_Kingdom
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Immigration to U.S. by Decade

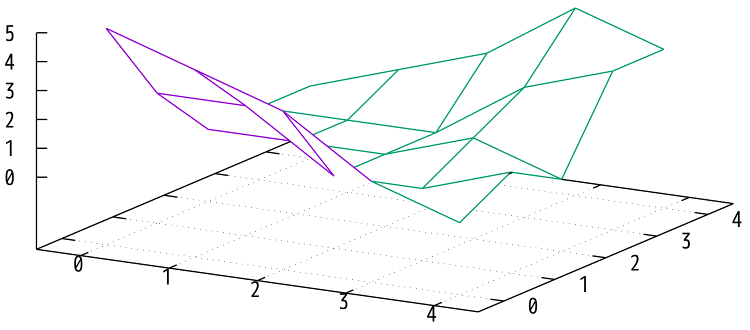


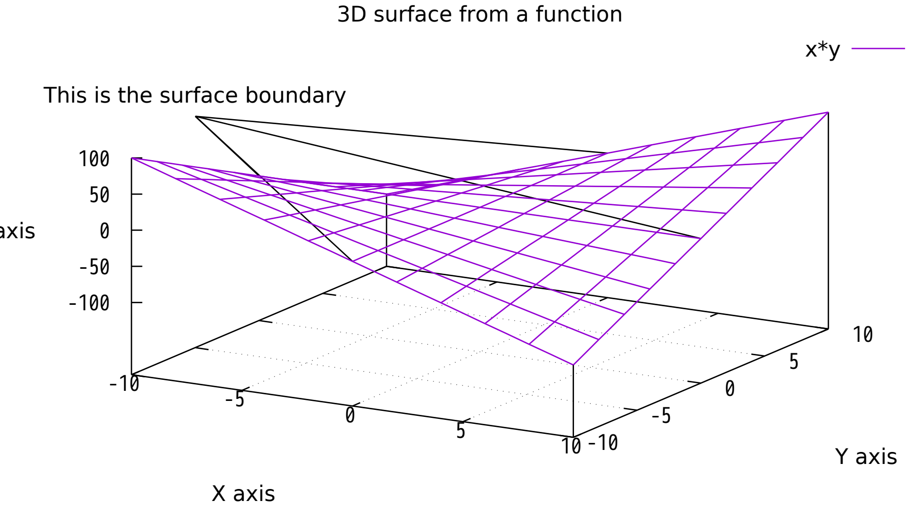
Expanding one of the plots to use additional space
Hungary
Germany
United_Kingdom
Total
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Immigration to U.S. by Decade



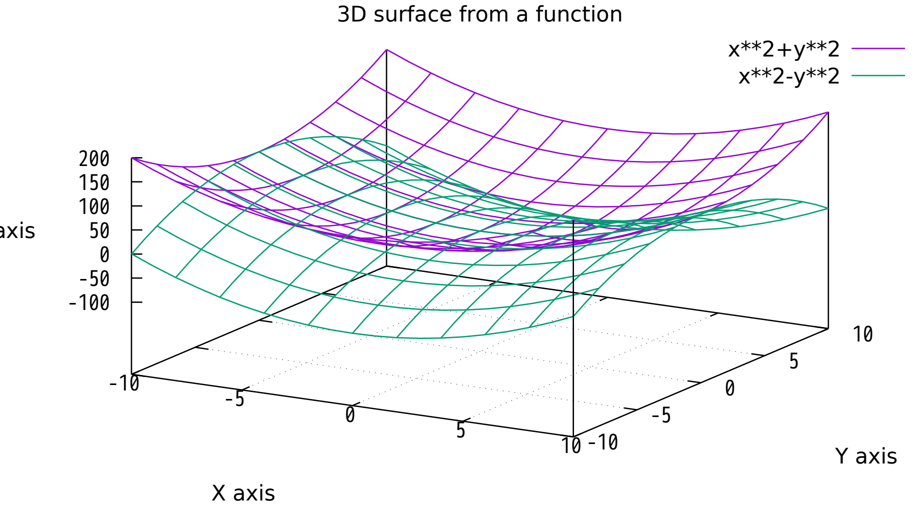
Multiplot with explicit page margins
sin(x)
sin(2*x)
cos(x)
cos(2*x)
ylabel
ylabel
xlabel
xlabel
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-6
-4
-2
0
2
4
6

3D surface from a grid (matrix) of Z values

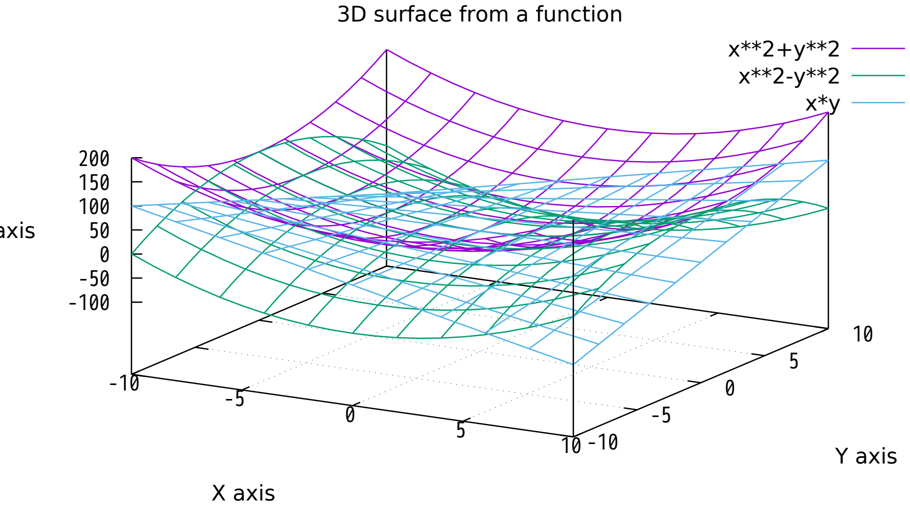




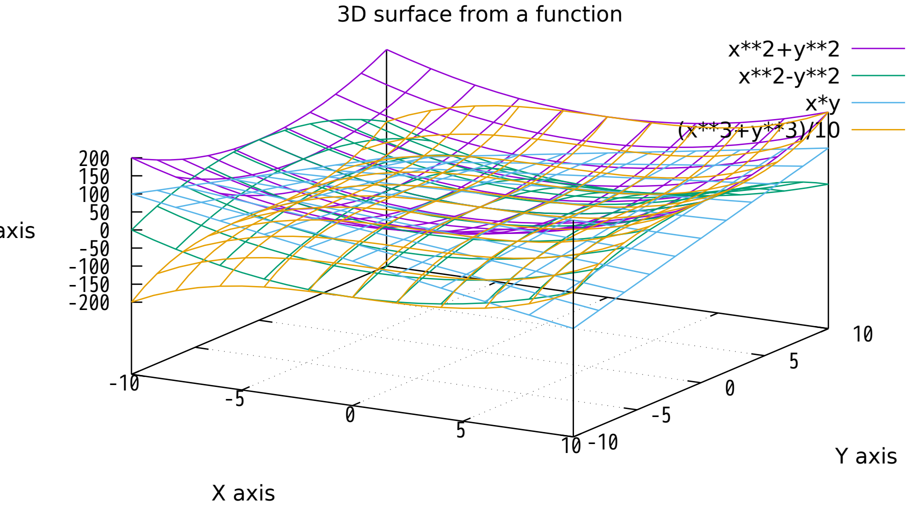
3D surface from a function
x*y
This is the surface boundary
100
50
0
-50
-100
axis
-10
-5
0
5
10
-10
-5
0
5
10
X axis
Y axis



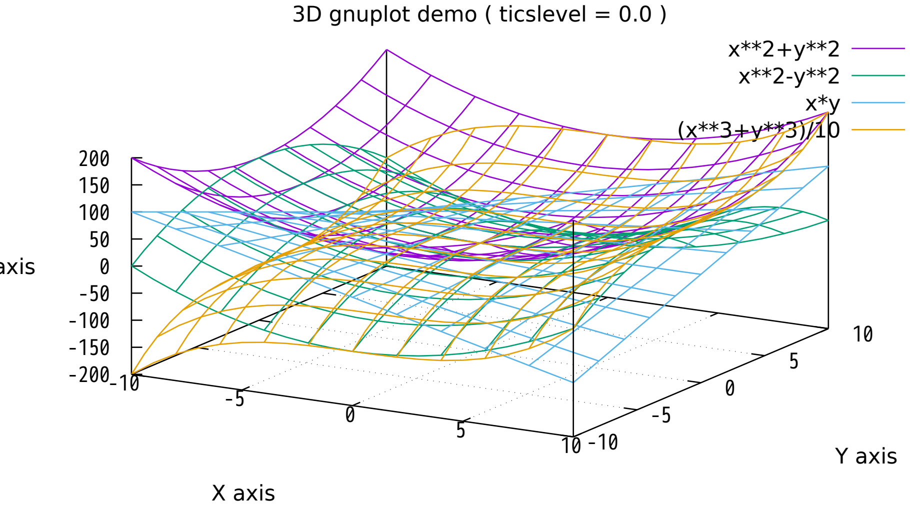
3D surface from a function
x**2+y**2
x**2-y**2
200
150
100
50
0
-50
-100
axis
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis



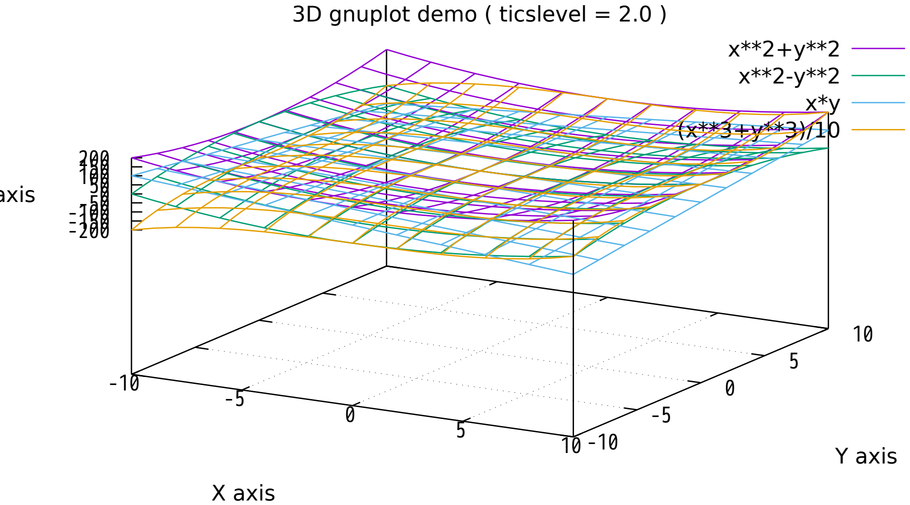
3D surface from a function
x**2+y**2
x**2-y**2
x*y
axis
200
150
100
50
0
-50
-100
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

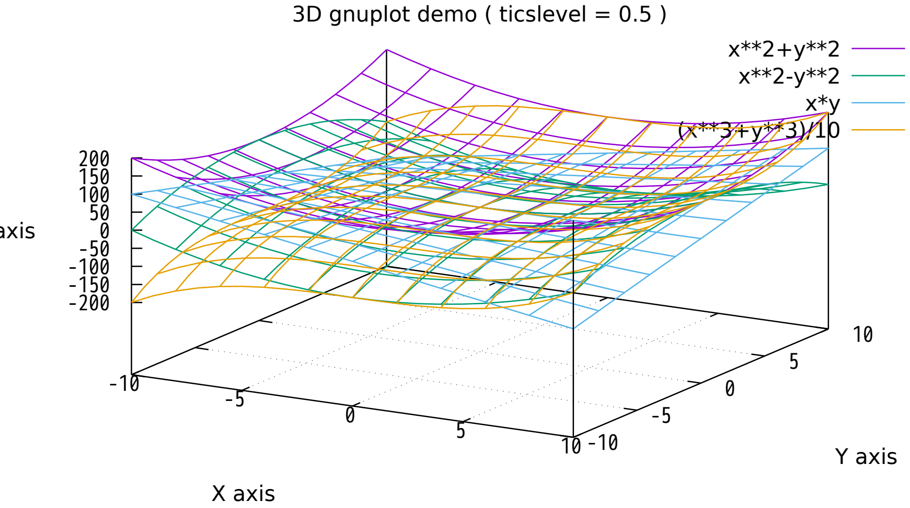


3D surface from a function
x**2+y**2
x**2-y**2
x*y
(x**3+y**3)/10
200
150
100
50
0
-50
-100
-150
-200
axis
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

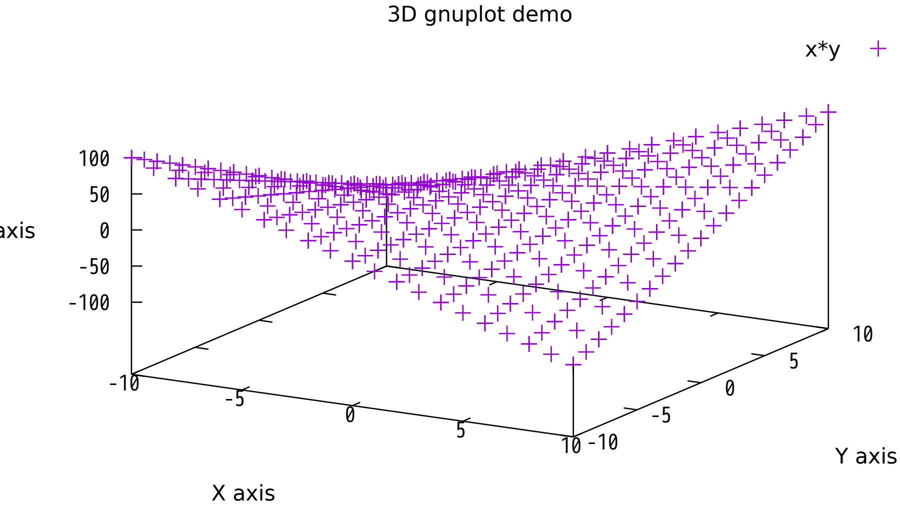


3D gnuplot demo (ticslevel = 0.0)
x**2+y**2
x**2-y**2
x*y
(x**3+y**3)/10
200
150
100
50
0
-50
-100
-150
-200
axis
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

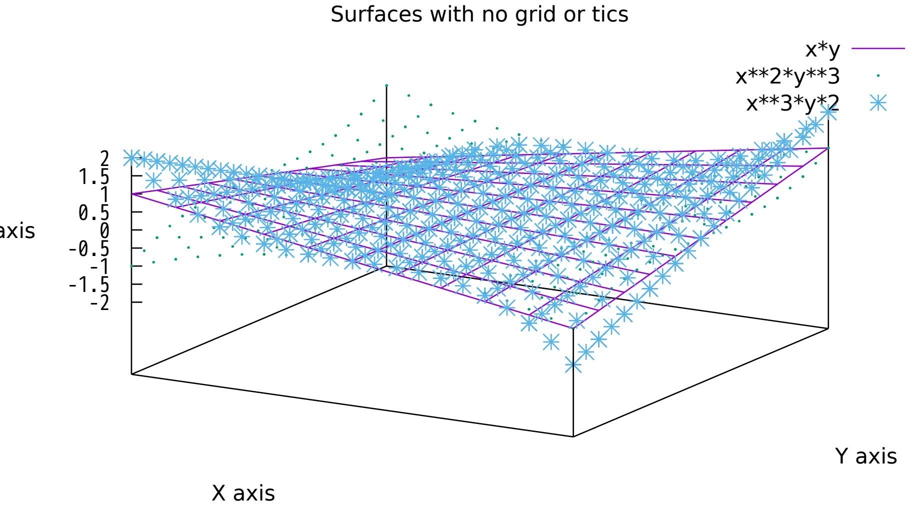

3D gnuplot demo (ticslevel = 2.0)
x**2+y**2
x**2-y**2
x*y
(x**3+y**3)/10
200
-200
axis
-10
-5
0
5
10
-10
-5
0
5
10
X axis
Y axis



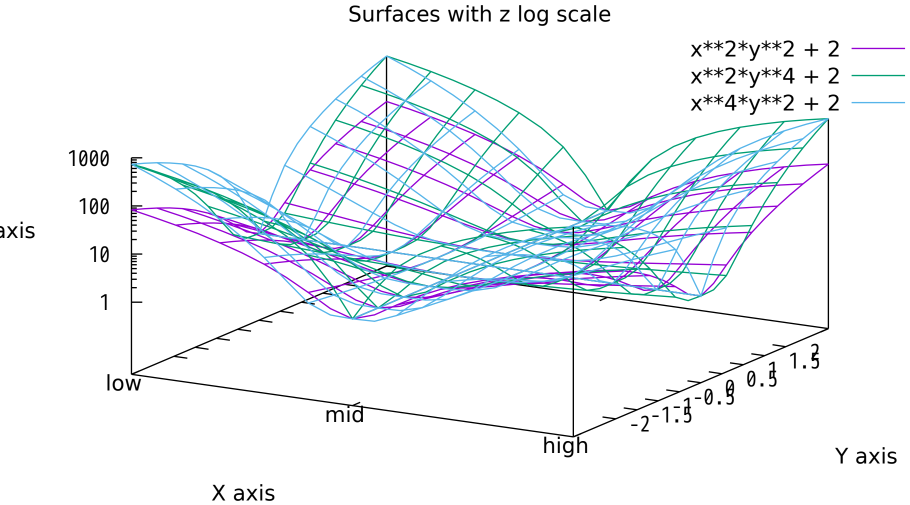
3D gnuplot demo (ticslevel = 0.5)
x**2+y**2
x**2-y**2
x*y
(x**3+y**3)/10
200
150
100
50
0
-50
-100
-150
-200
axis
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis



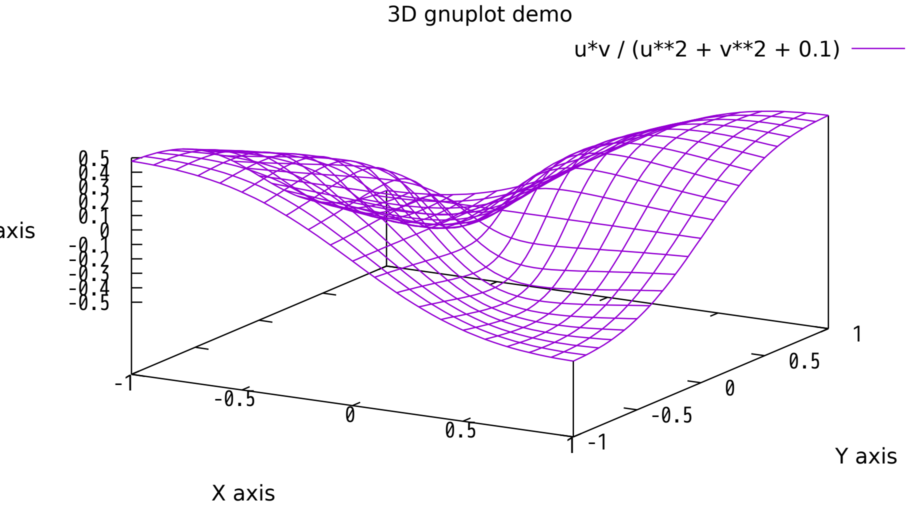
3D gnuplot demo
x*y
100
50
0
-50
-100
axis
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

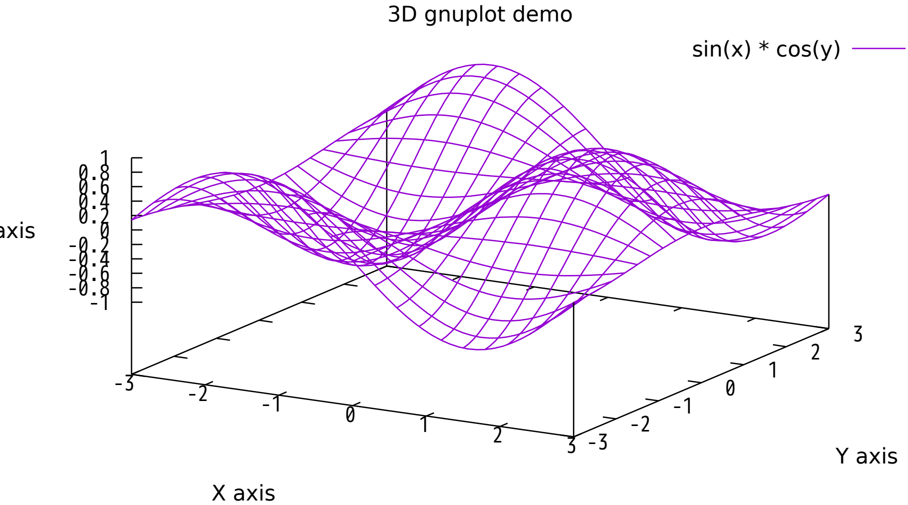


Surfaces with no grid or tics
x*y
x**2*y**3
x**3*y*2
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
axis
X axis
Y axis

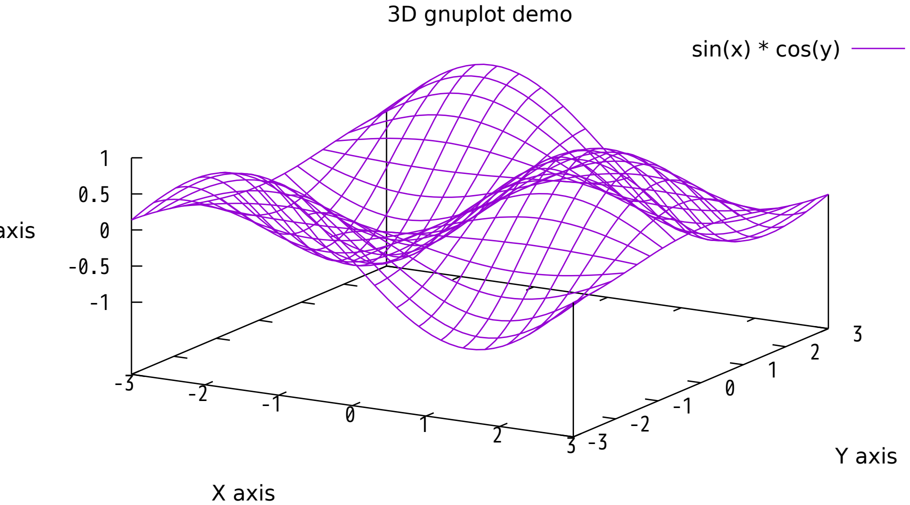


Surfaces with z log scale
x**2*y**2 + 2
x**2*y**4 + 2
x**4*y**2 + 2
1000
100
10
1
axis
low
mid
high
X axis
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
Y axis

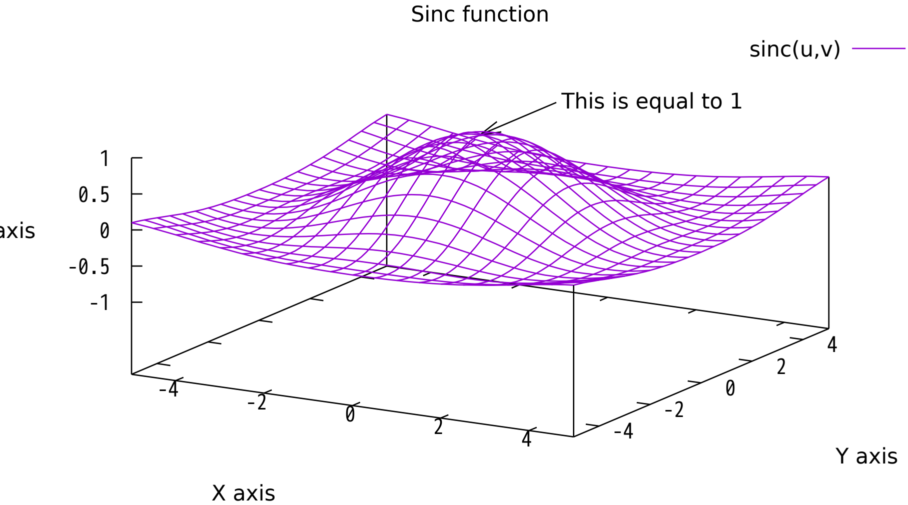

3D gnuplot demo
u*v / (u**2 + v**2 + 0.1)
axis
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-1
-0.5
0
0.5
1
X axis
-1
-0.5
0
0.5
1
Y axis



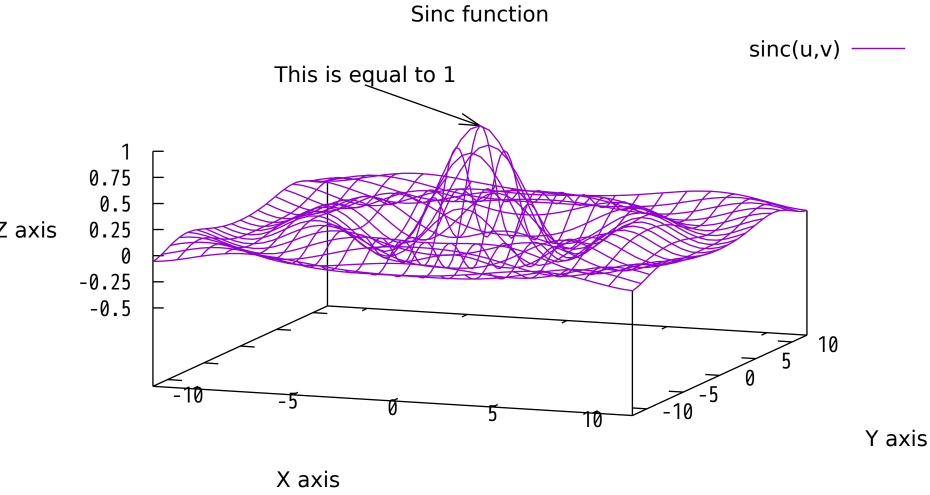
3D gnuplot demo
sin(x) * cos(y)
axis
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-3
-2
-1
0
1
2
3
X axis
-3
-2
-1
0
1
2
3
Y axis



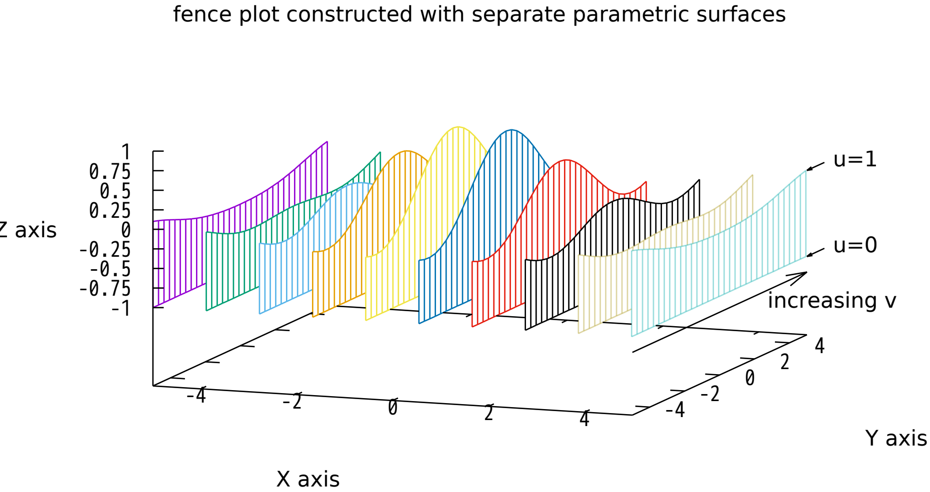
3D gnuplot demo
sin(x) * cos(y)
1
0.5
axis
0
-0.5
-1
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3
Y axis
X axis



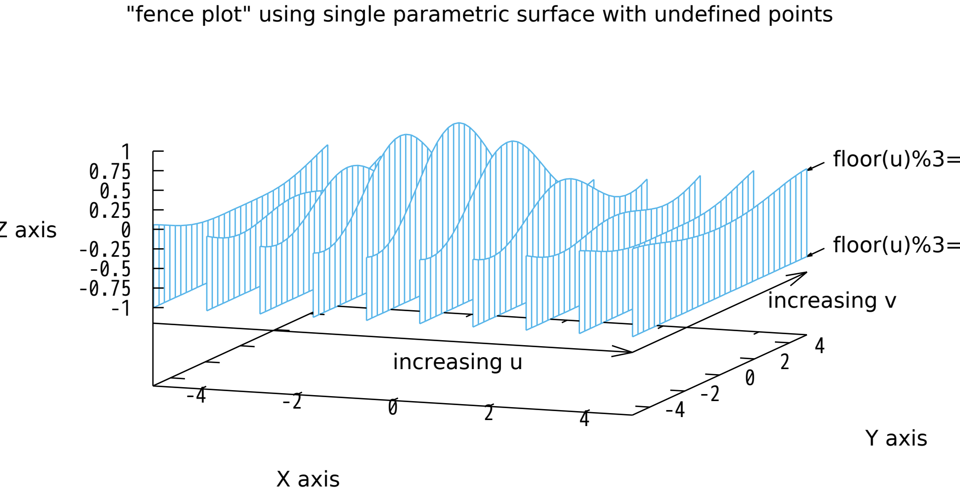
Sinc function
sinc(u,v)
This is equal to 1
1
0.5
0
-0.5
-1
axis
-4
-2
0
2
4
X axis
4
2
0
-2
-4
Y axis



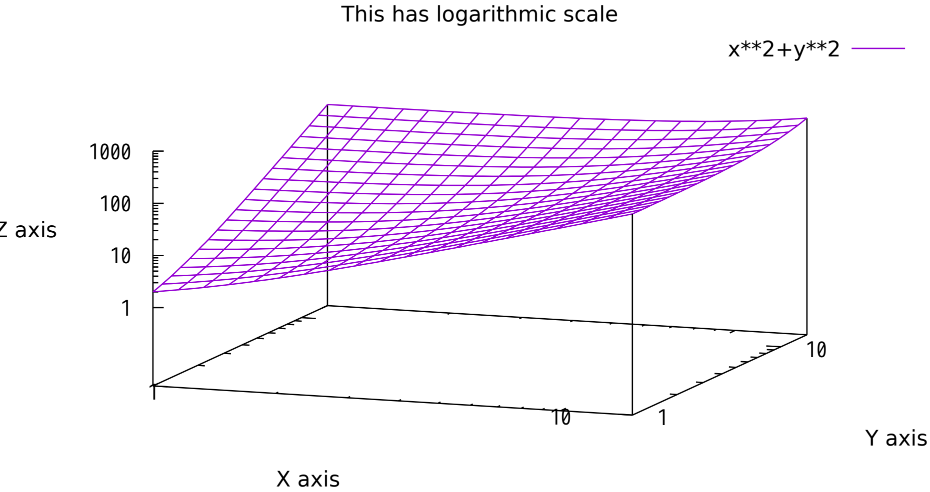
Sinc function
sinc(u,v)
This is equal to 1
1
0.75
0.5
0.25
0
-0.25
-0.5
Z axis
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

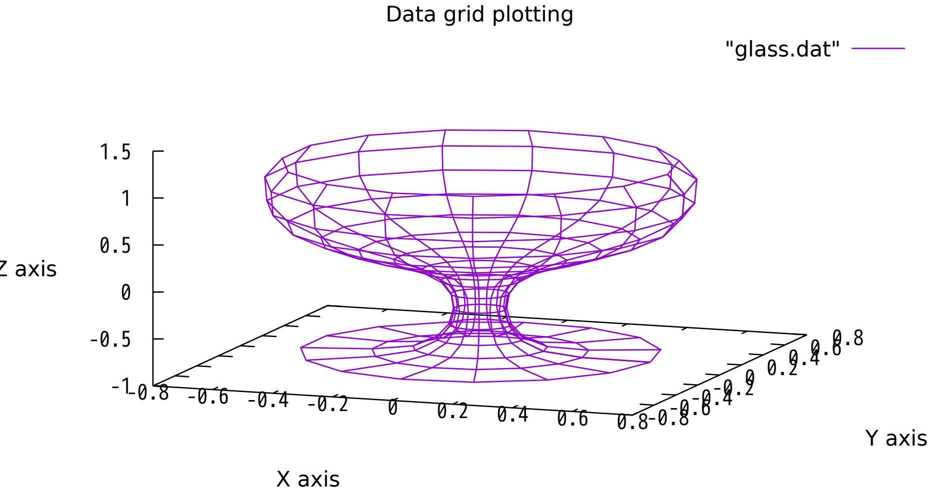


fence plot constructed with separate parametric surfaces
Z axis
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
u=1
u=0
increasing v
X axis
-4
-2
0
2
4
Y axis
-4
-2
0
2
4

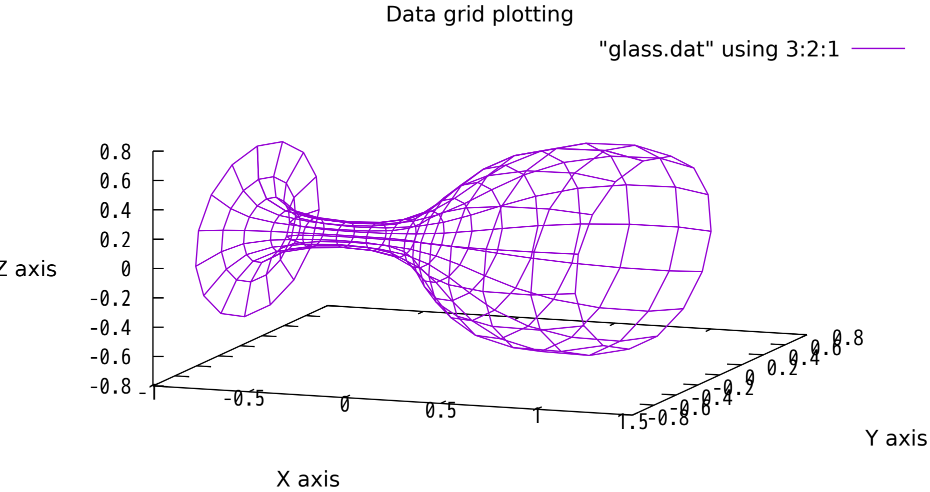


"fence plot" using single parametric surface with undefined points
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
Z axis
floor(u)%3=
floor(u)%3=
increasing v
increasing u
-4
-2
0
2
4
4
2
0
-2
-4
Y axis
X axis

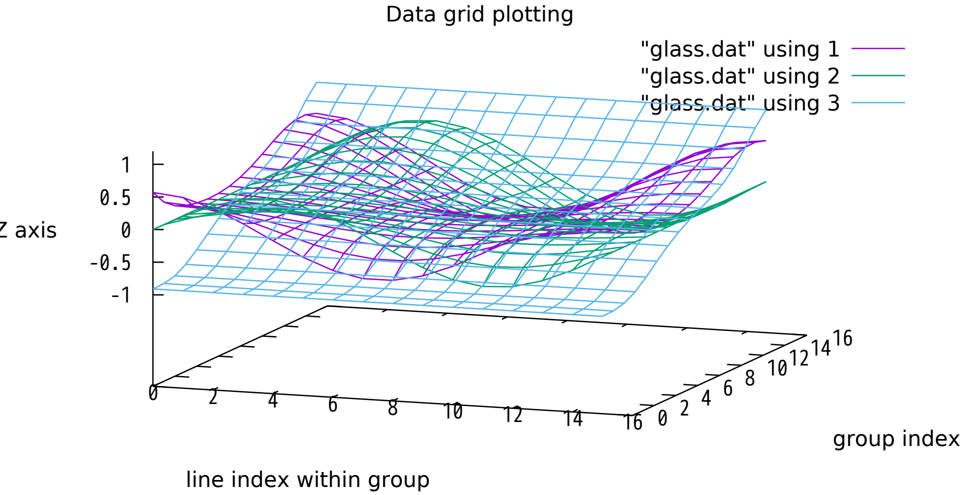

This has logarithmic scale
x**2+y**2
1000
100
10
1
Z axis
1
10
X axis
1
10
Y axis



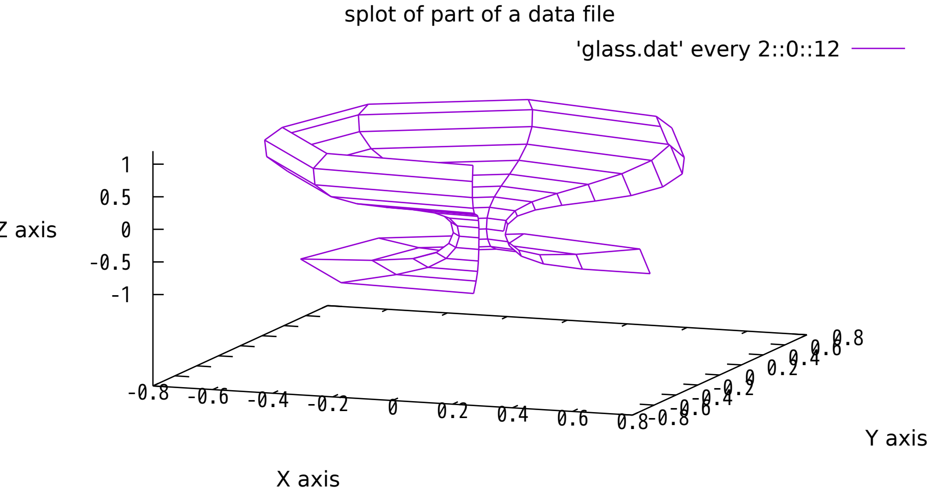
Data grid plotting
"glass.dat"
Z axis
X axis
Y axis
1.5
1
0.5
0
-0.5
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8



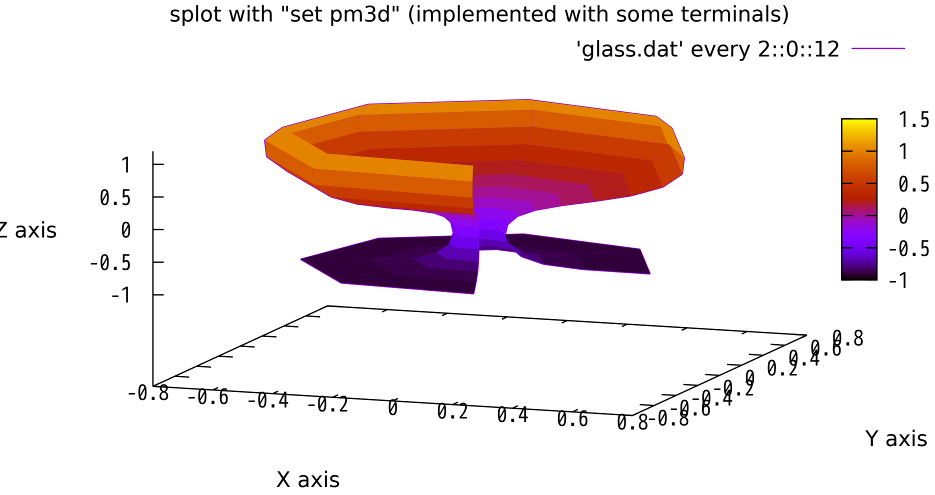
Data grid plotting
"glass.dat" using 3:2:1
Z axis
X axis
Y axis
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-0.5
0
0.5
1
1.5

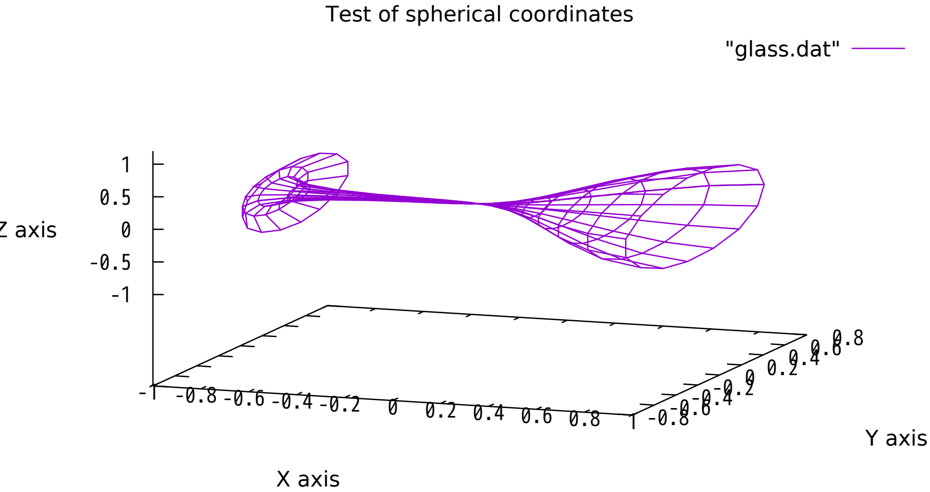


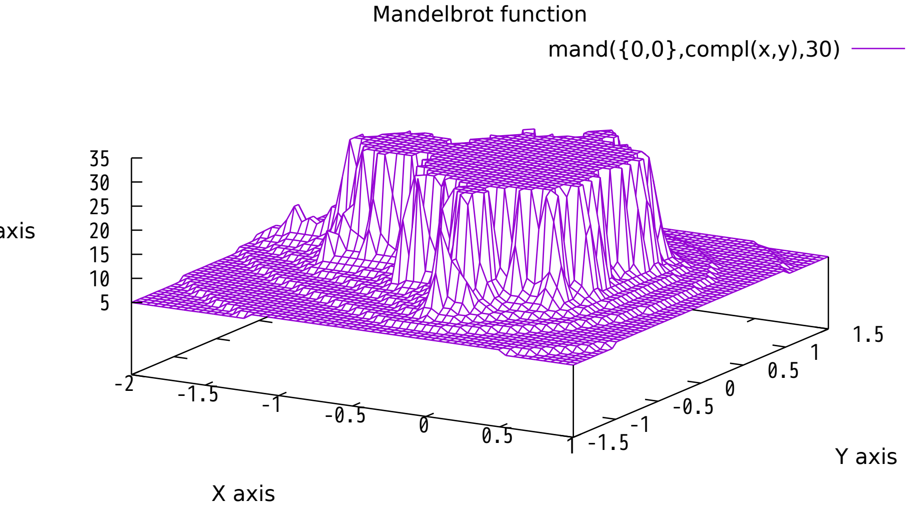
Data grid plotting
"glass.dat" using 1
"glass.dat" using 2
"glass.dat" using 3
Z axis
1
0.5
0
-0.5
-1
0
2
4
6
8
10
12
14
16
line index within group
0
2
4
6
8
10
12
14
16
group index



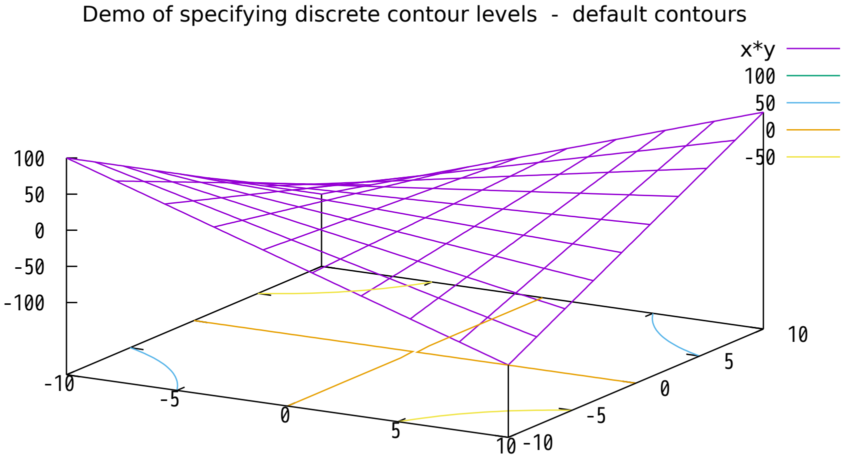
splot of part of a data file
'glass.dat' every 2::0::12
Z axis
1
0.5
0
-0.5
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
X axis
Y axis

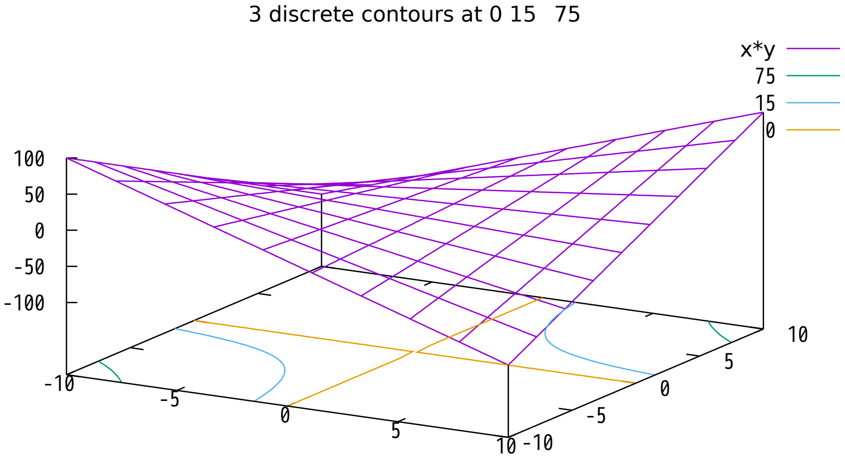

splot with "set pm3d" (implemented with some terminals)
'glass.dat' every 2::0::12
Z axis
1
0.5
0
-0.5
-1
X axis
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
Y axis
1.5
1
0.5
0
-0.5
-1

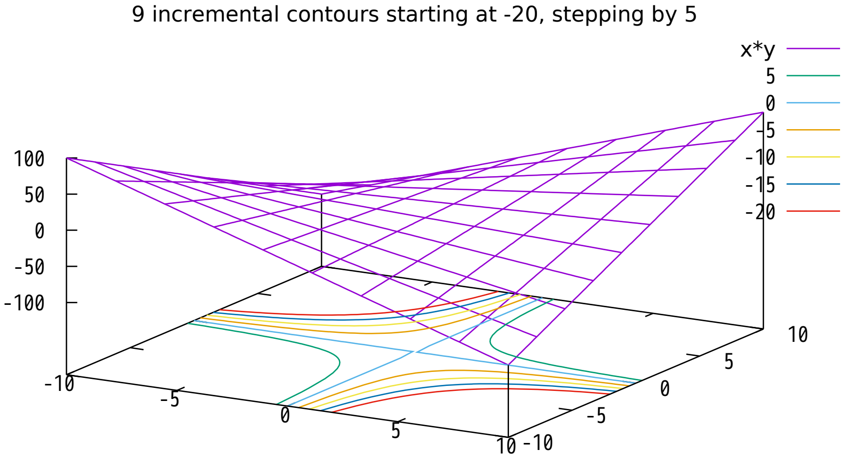

Test of spherical coordinates
"glass.dat"
Z axis
1
0.5
0
-0.5
-1
X axis
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
Y axis



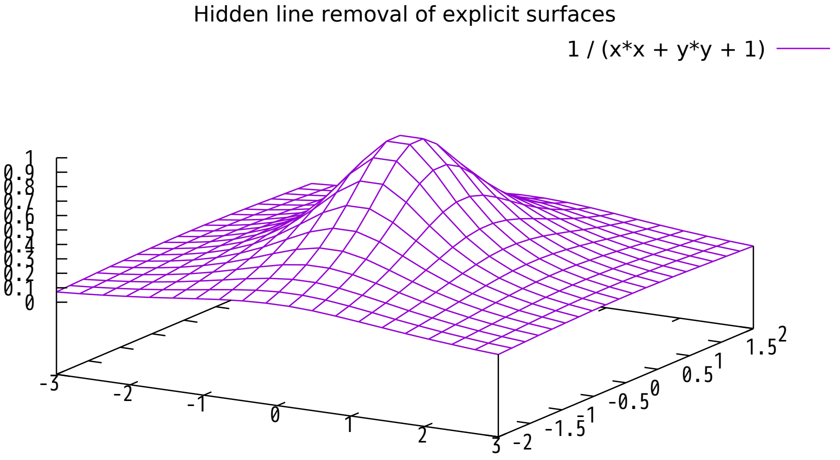
Mandelbrot function
mand({0,0},compl(x,y),30)
35
30
25
20
15
10
5
axis
-2
-1.5
-1
-0.5
0
0.5
1
X axis
-1.5
-1
-0.5
0
0.5
1
1.5
Y axis


Demo of specifying discrete contour levels - default contours
x*y
100
50
0
-50
100
50
0
-50
-100
-10
-5
0
5
10
-10
-5
0
5
10

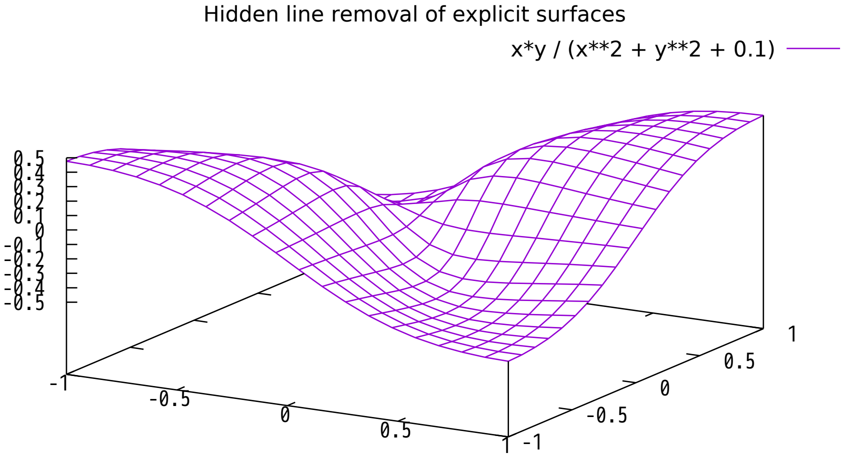

3 discrete contours at 0 15 75
x*y
75
15
0
100
50
0
-50
-100
-10
-5
0
5
10
-10
-5
0
5
10



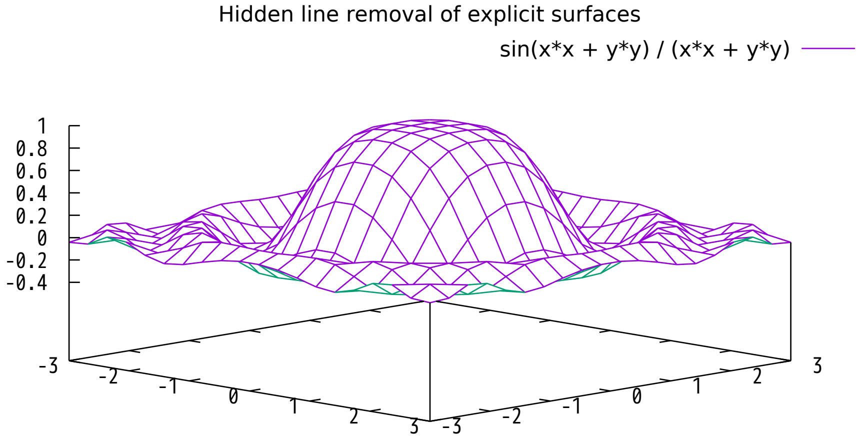
9 incremental contours starting at -20, stepping by 5
x*y
5
0
-5
-10
-15
-20
100
50
0
-50
-100
-10
-5
0
5
10
-10
-5
0
5
10



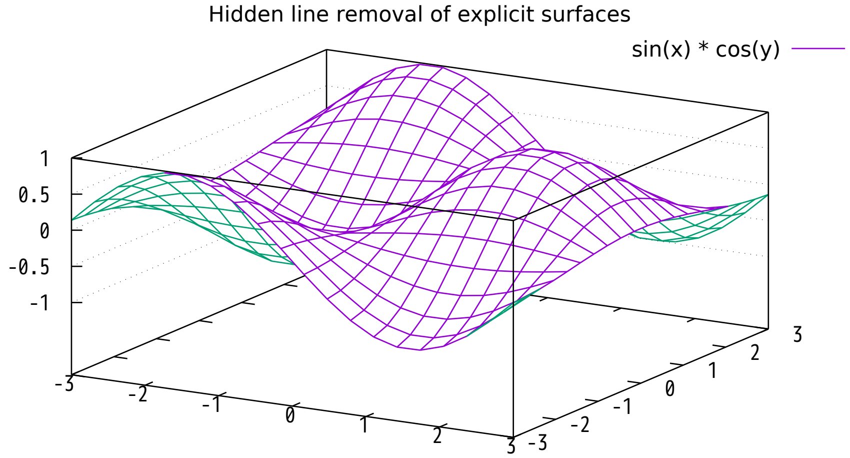
Hidden line removal of explicit surfaces
1 / (x*x + y*y + 1)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-3
-2
-1
0
1
2
3
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2



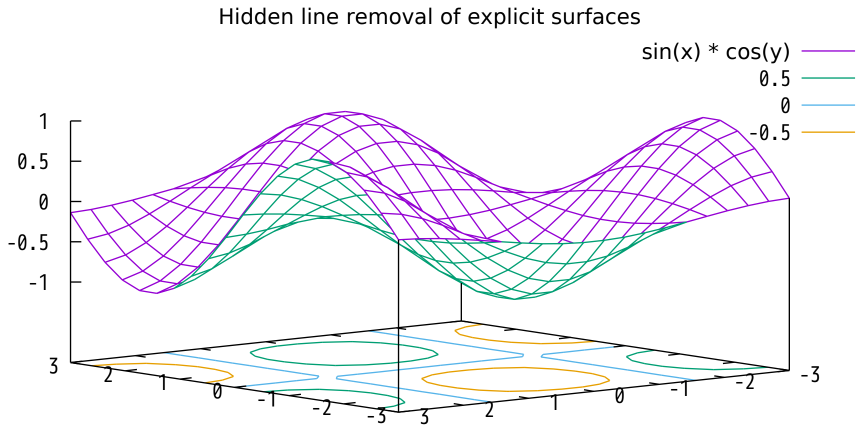
Hidden line removal of explicit surfaces
x*y / (x**2 + y**2 + 0.1)
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-1
-0.5
0
0.5
1
-1
-0.5
0
0.5
1



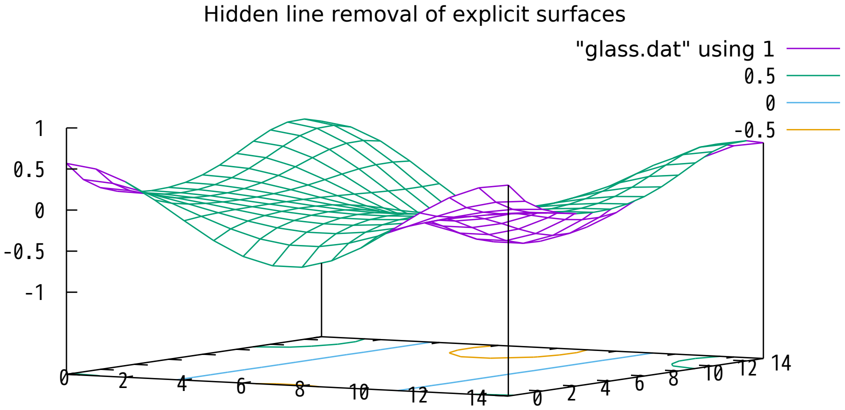
Hidden line removal of explicit surfaces
sin(x*x + y*y) / (x*x + y*y)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3

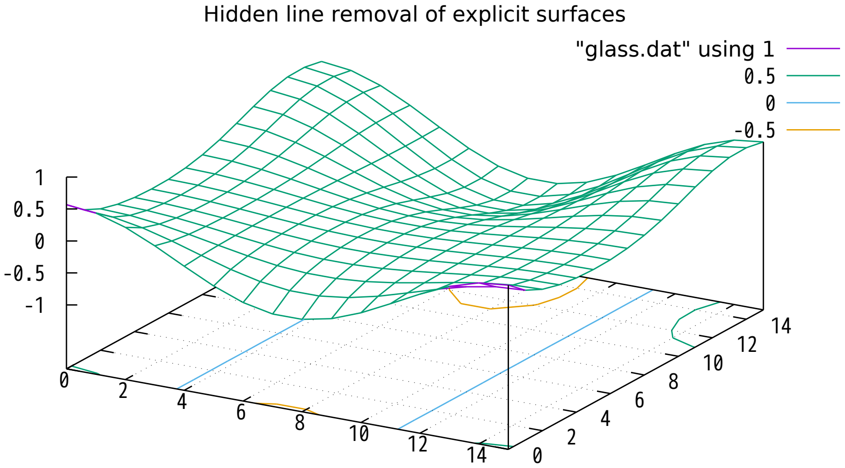


Hidden line removal of explicit surfaces
sin(x) * cos(y)
1
0.5
0
-0.5
-1
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3

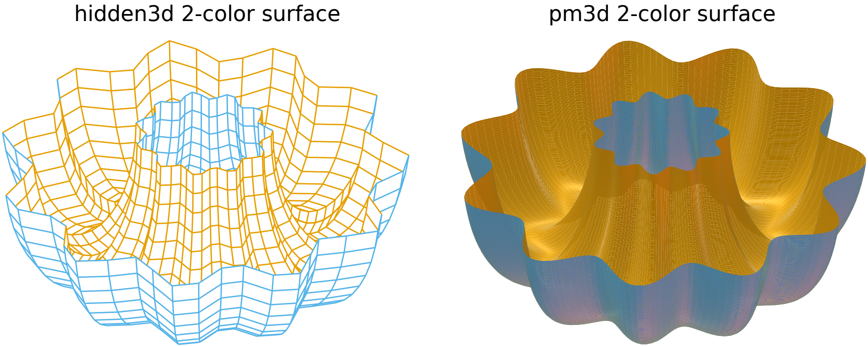


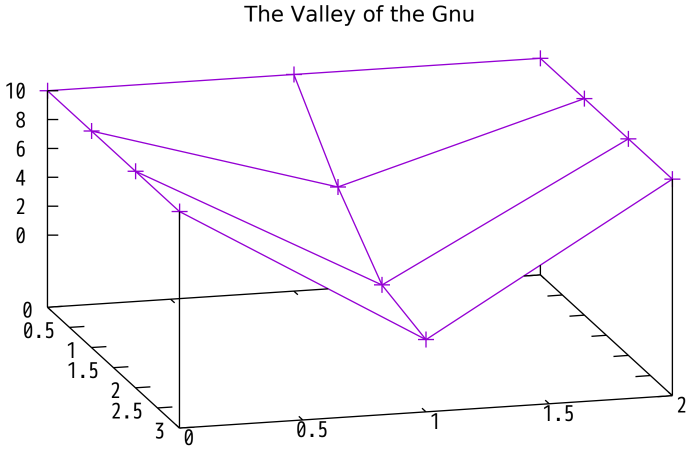
Hidden line removal of explicit surfaces
sin(x) * cos(y)
0.5
0
-0.5
1
0.5
0
-0.5
-1
3
2
1
0
-1
-2
-3
3
2
1
0
-1
-2
-3


Hidden line removal of explicit surfaces
"glass.dat" using 1
0.5
0
-0.5
1
0.5
0
-0.5
-1
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

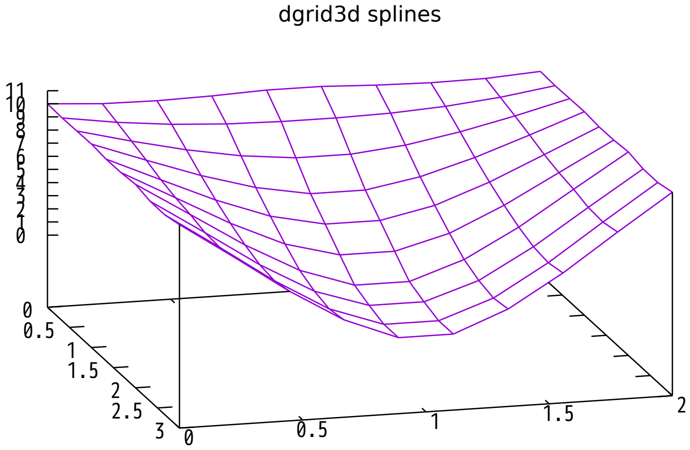


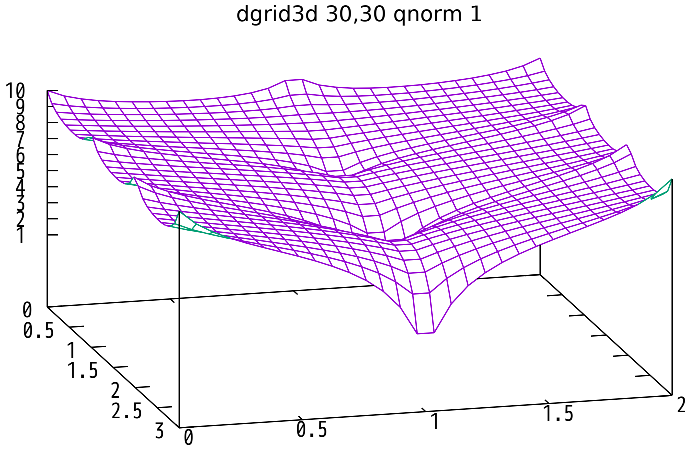
Hidden line removal of explicit surfaces
"glass.dat" using 1
0.5
0
-0.5
1
0.5
0
-0.5
-1
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

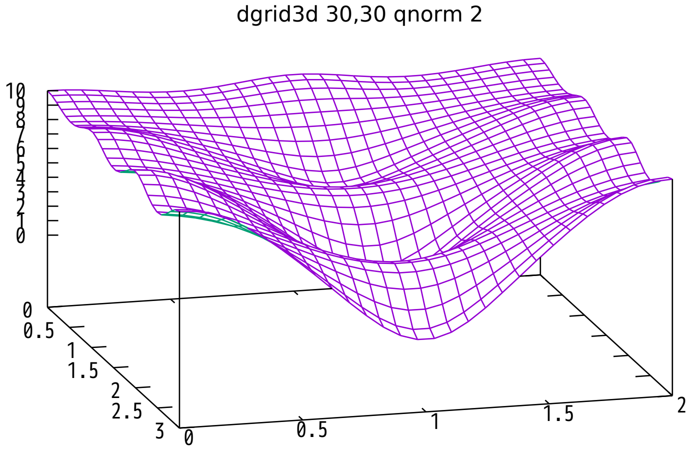

hidden3d 2-color surface
pm3d 2-color surface

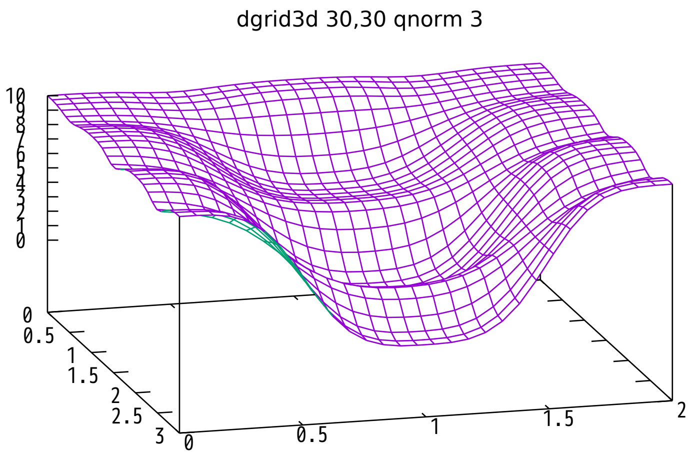


The Valley of the Gnu
10
8
6
4
2
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

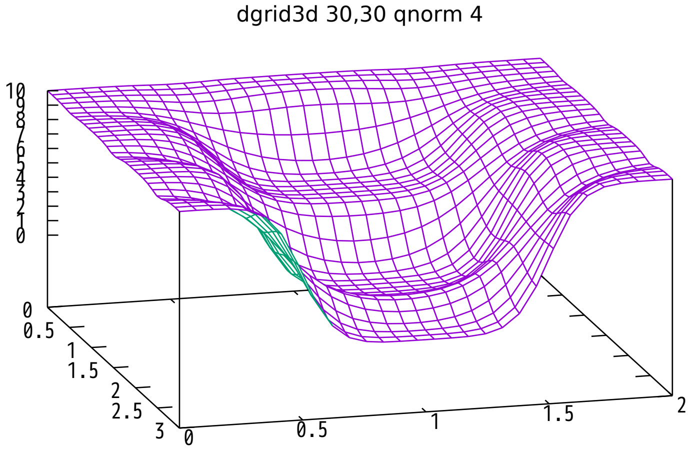

dgrid3d splines
11
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

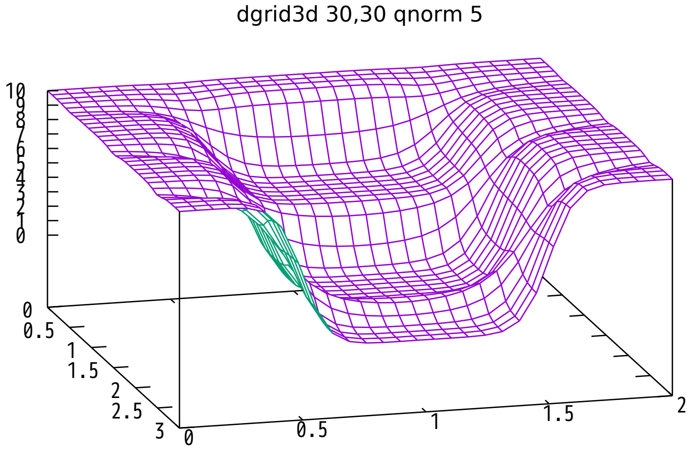

dgrid3d 30,30 qnorm 1
10
9
8
7
6
5
4
3
2
1
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

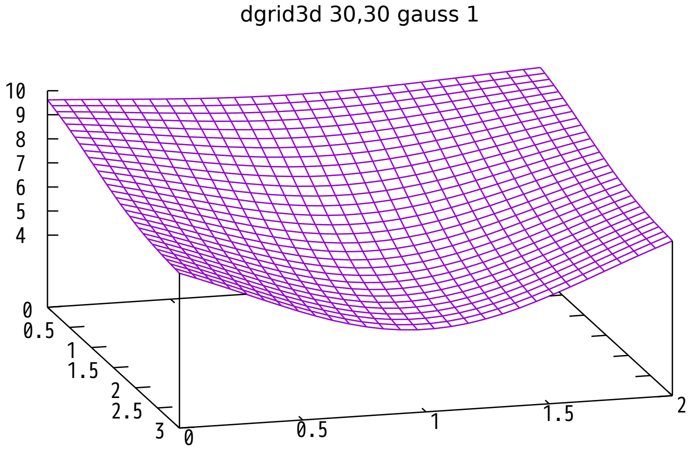

dgrid3d 30,30 qnorm 2
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2



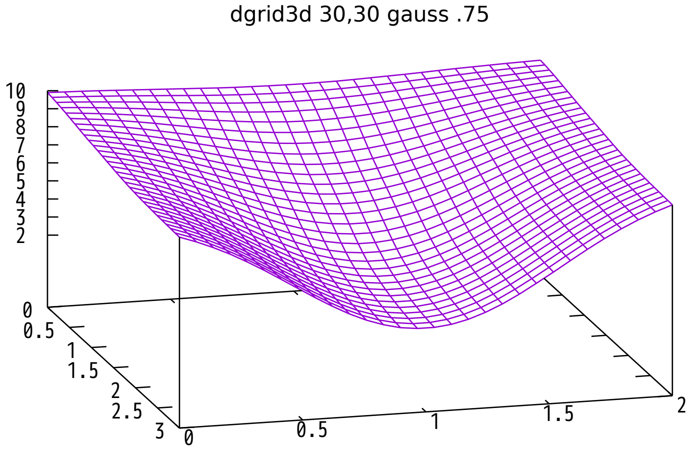
dgrid3d 30,30 qnorm 3
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2


dgrid3d 30,30 qnorm 4
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2


dgrid3d 30,30 qnorm 5
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

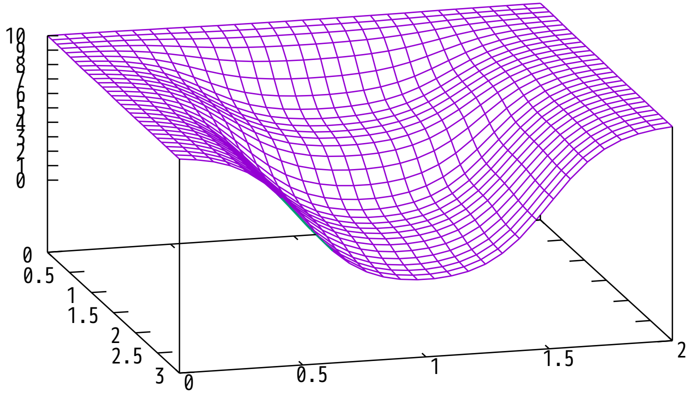


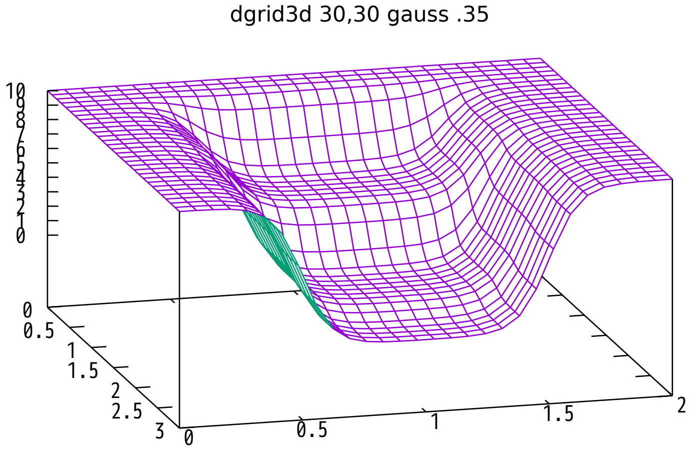
dgrid3d 30,30 gauss 1
10
9
8
7
6
5
4
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

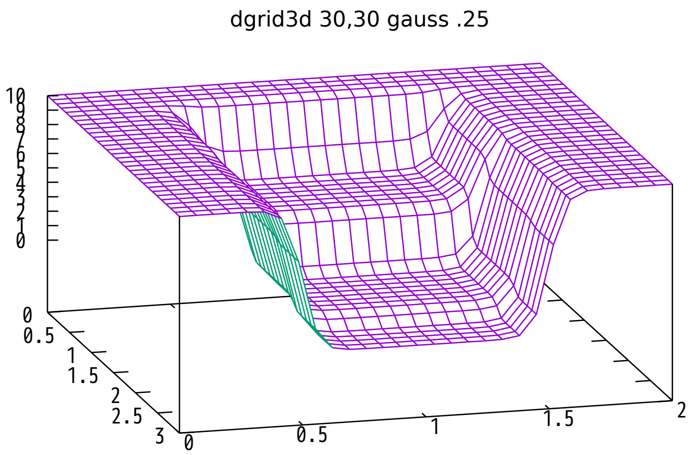


dgrid3d 30,30 gauss .75
10
9
8
7
6
5
4
3
2
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

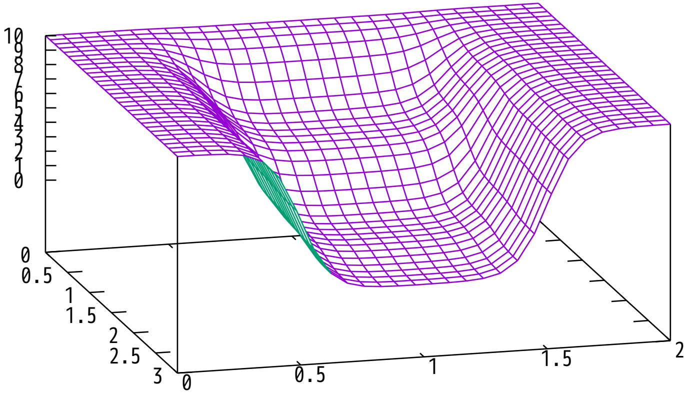
dgrid3d 30,30 gauss .5



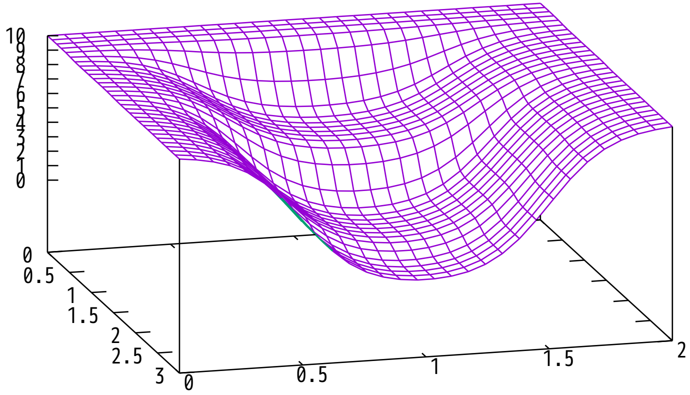

dgrid3d 30,30 gauss .35
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

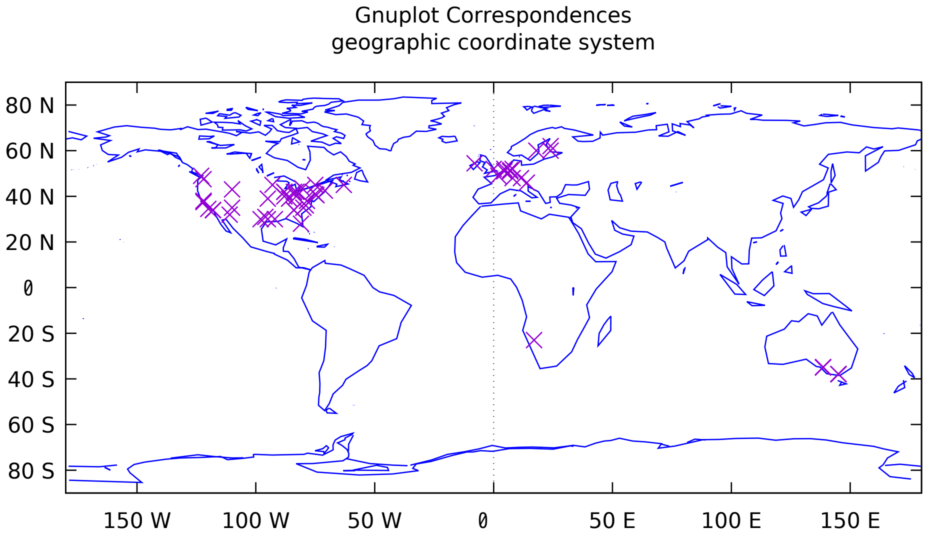

dgrid3d 30,30 gauss .25
10
9
8
7
6
5
4
3
2
1
0
0
0.5
1
1.5
2
2.5
3
0
0.5
1
1.5
2

dgrid3d 30,30 gauss .5,.35

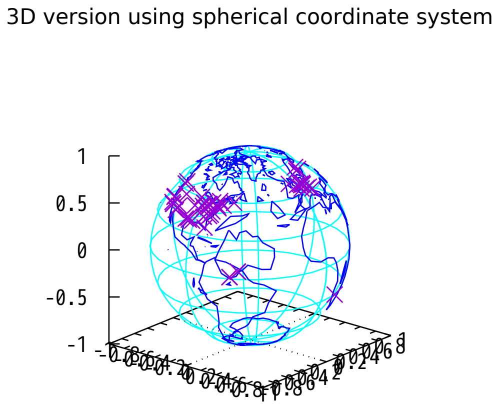


dgrid3d 30,30 gauss .35,.5

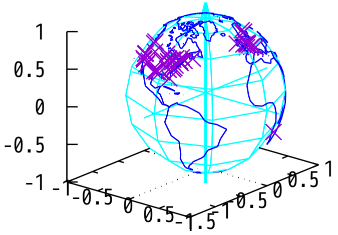




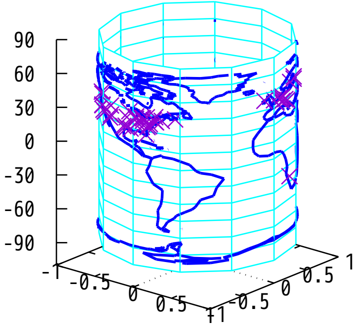
Gnuplot Correspondences
geographic coordinate system
80 N
60 N
40 N
20 N
0
20 S
40 S
60 S
80 S
150 W
100 W
50 W
0
50 E
100 E
150 E

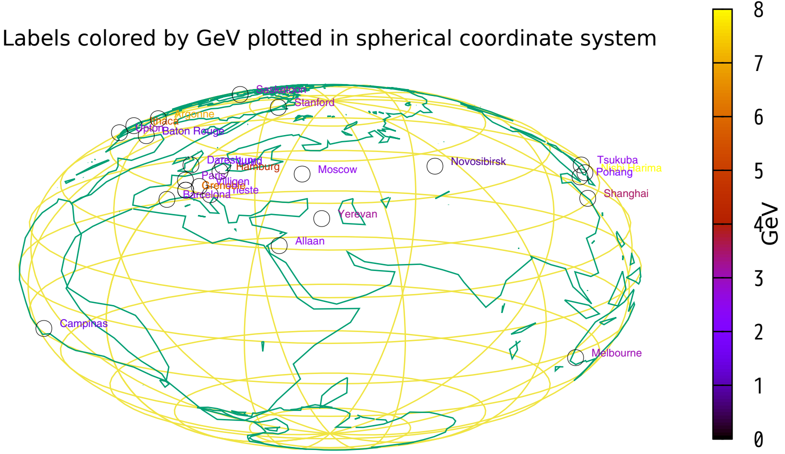

3D version using spherical coordinate system
1
0.5
0
-0.5
-1

3D solid version with hidden line removal

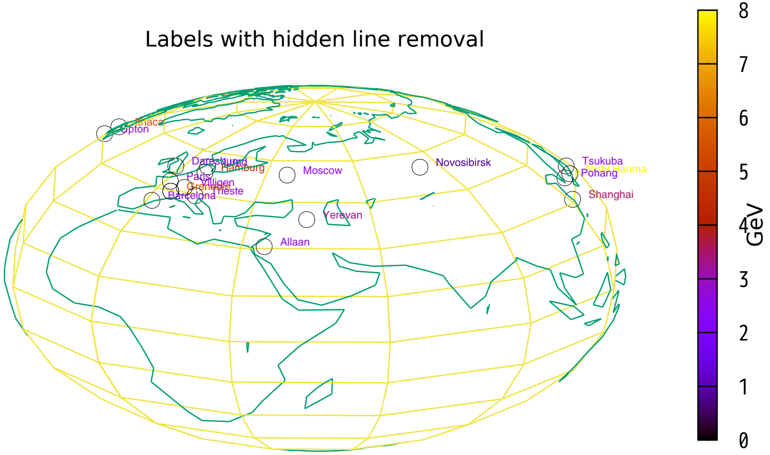


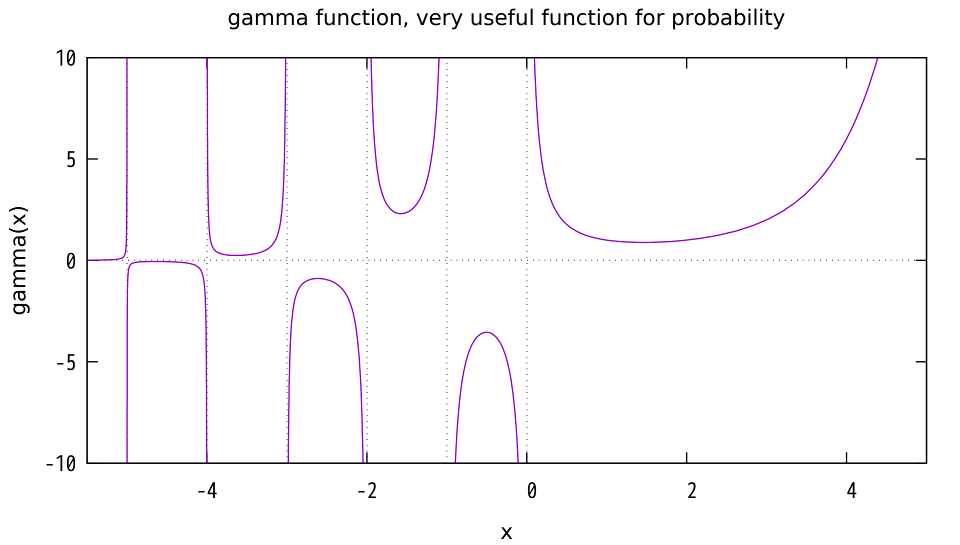
3D version using cylindrical coordinate system



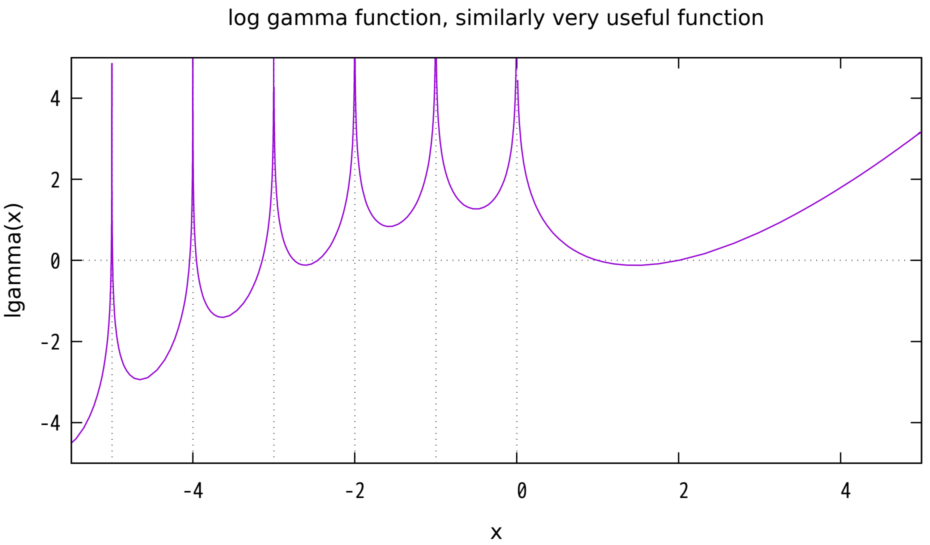


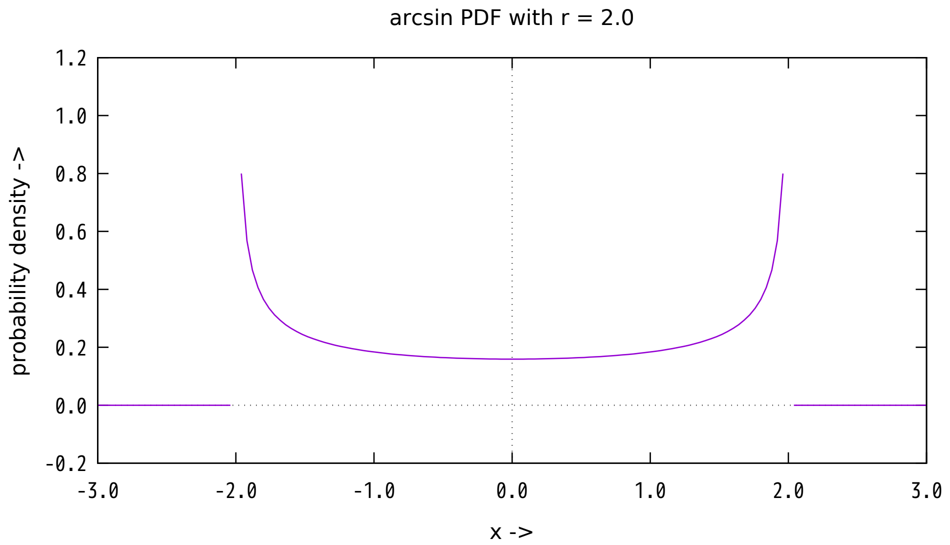
Labels colored by GeV plotted in spherical coordinate system
Saskatoon
Stanford
Argonne
Ithaca
Upton
Baton Rouge
Hamburg
Moscow
Novosibirsk
Paris
Villigen
Grenoble
Trieste
Barcelona
Yerevan
Allaan
Tsukuba
Pohang
Nishi Harima
Shanghai
Campinas
Melbourne
GeV
0
1
2
3
4
5
6
7
8


Labels with hidden line removal
Ithaca
Upton
Hamburg
Paris
Villigen
Grenoble
Trieste
Barcelona
Moscow
Novosibirsk
Yerevan
Allaan
Tsukuba
Pohang
Nishi Harima
Shanghai
GeV
0
1
2
3
4
5
6
7
8

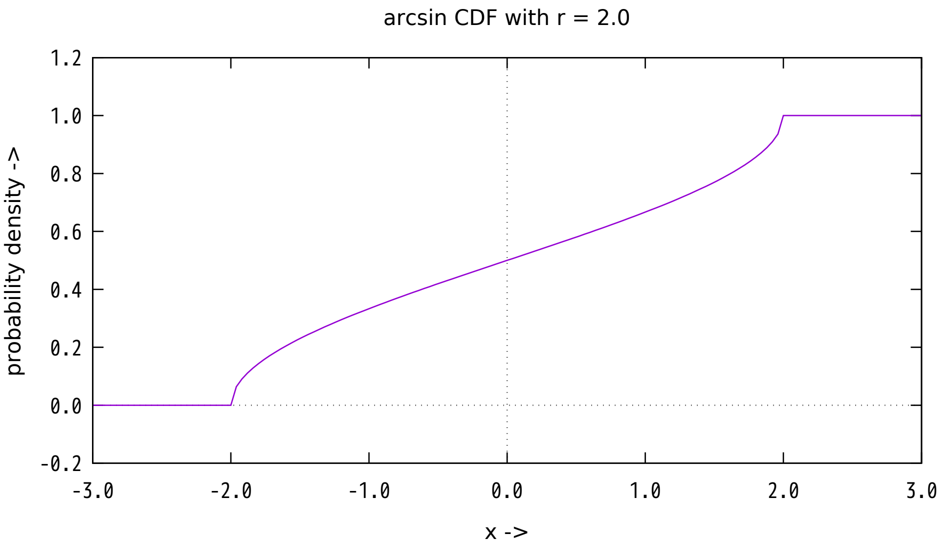


gamma function, very useful function for probability
gamma(x)
10
5
0
-5
-10
-4
-2
0
2
4
x

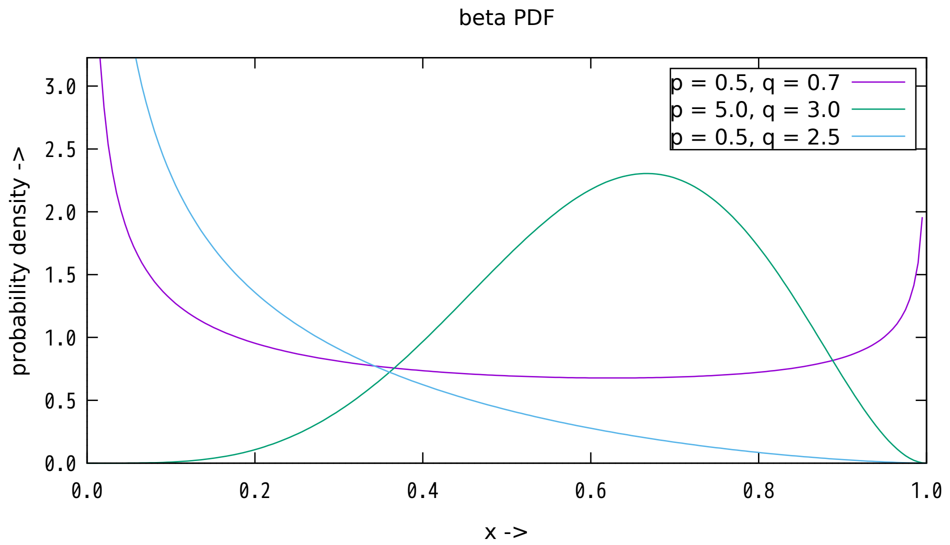

log gamma function, similarly very useful function
lgamma(x)
4
2
0
-2
-4
-4
-2
0
2
4
x



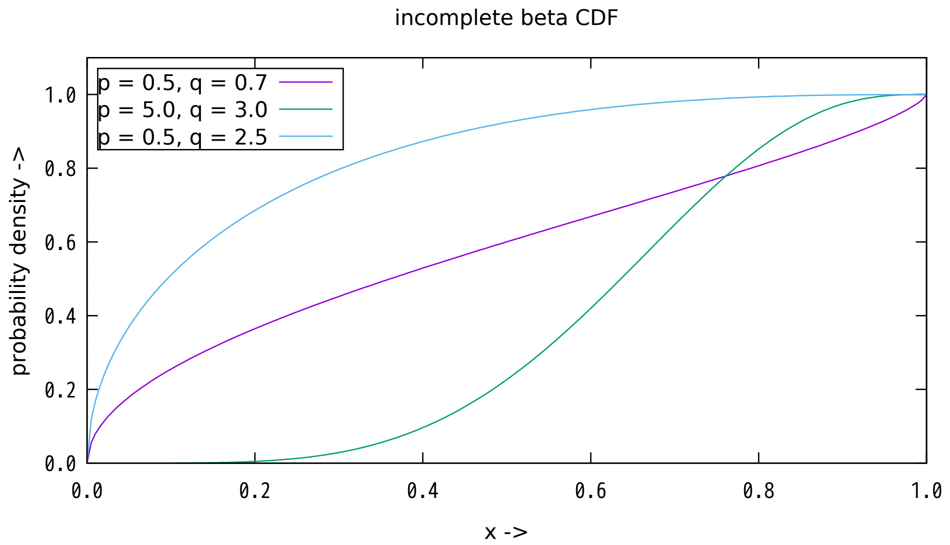
arcsin PDF with r = 2.0
probability density ->
x ->
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0



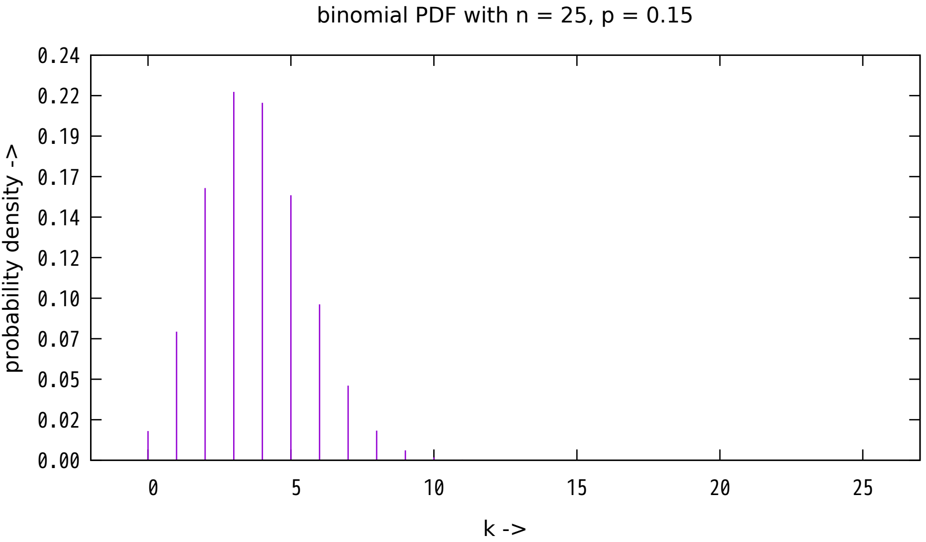
arcsin CDF with r = 2.0
probability density ->
x ->
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0



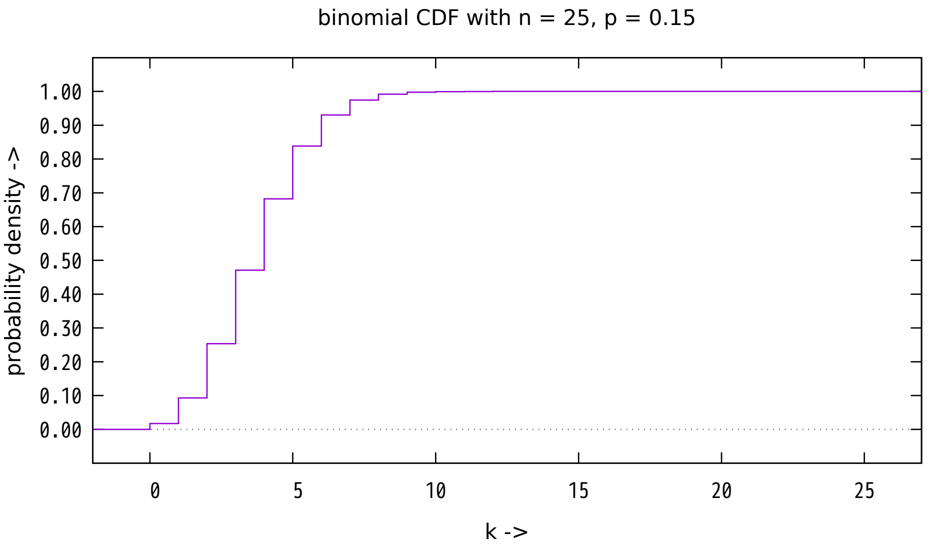
beta PDF
p = 0.5, q = 0.7
p = 5.0, q = 3.0
p = 0.5, q = 2.5
probability density ->
x ->
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0.0
0.2
0.4
0.6
0.8
1.0



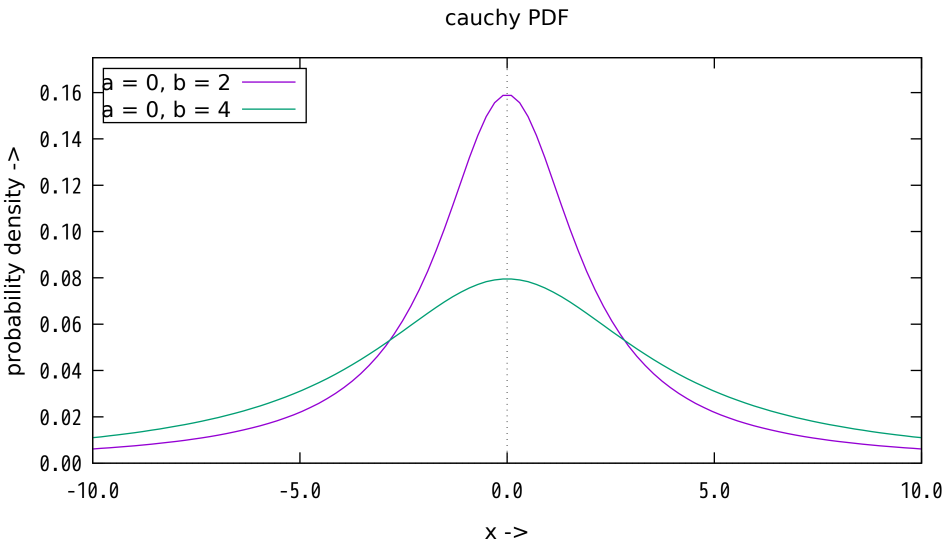
incomplete beta CDF
p = 0.5, q = 0.7
p = 5.0, q = 3.0
p = 0.5, q = 2.5
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.2
0.4
0.6
0.8
1.0



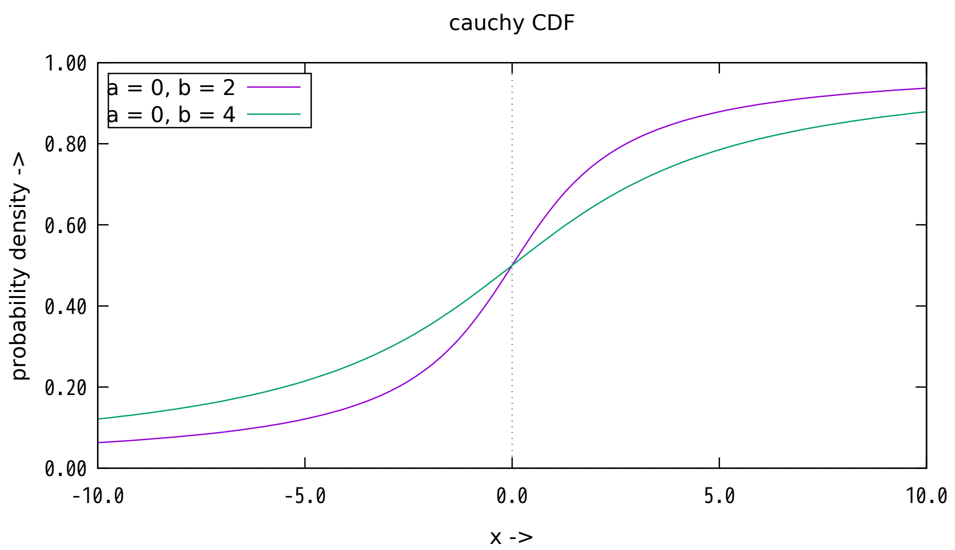
binomial PDF with n = 25, p = 0.15
probability density ->
k ->
0.24
0.22
0.19
0.17
0.14
0.12
0.10
0.07
0.05
0.02
0.00
0
5
10
15
20
25



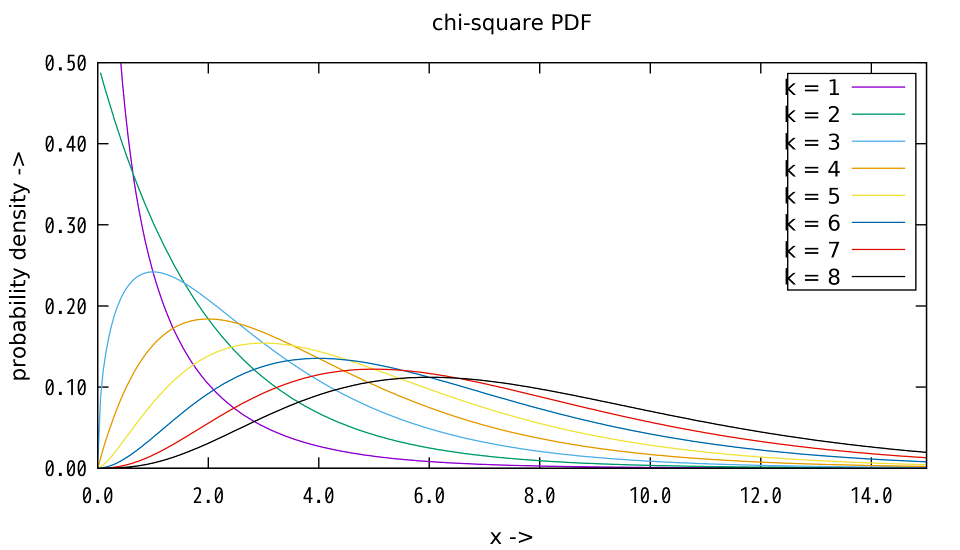
binomial CDF with n = 25, p = 0.15
probability density ->
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
5
10
15
20
25
k ->



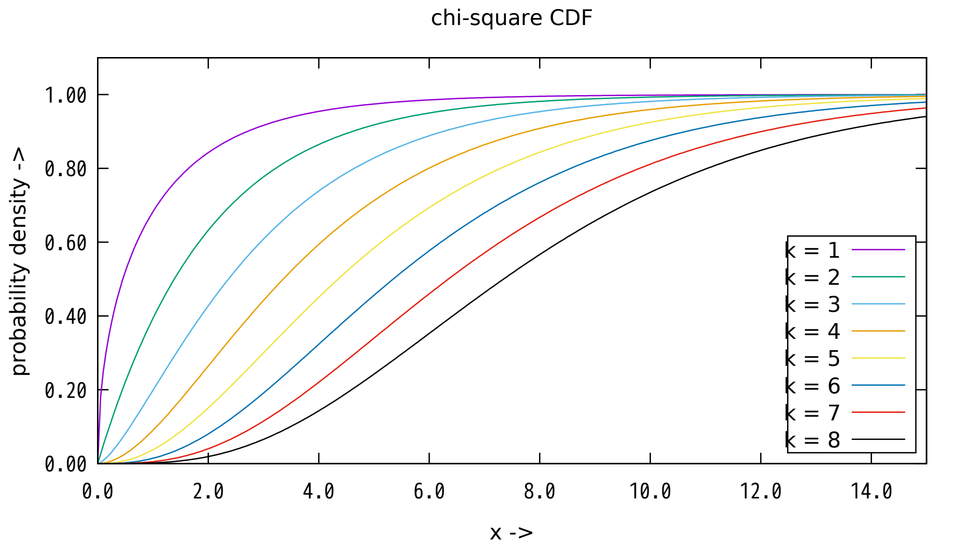
cauchy PDF
a = 0, b = 2
a = 0, b = 4
probability density ->
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
-10.0
-5.0
0.0
5.0
10.0
x ->



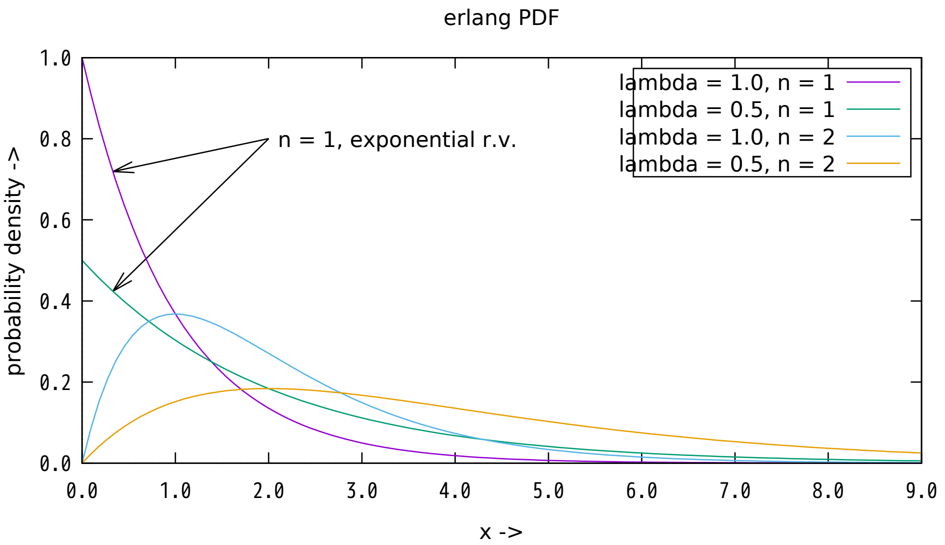
cauchy CDF
a = 0, b = 2
a = 0, b = 4
probability density ->
1.00
0.80
0.60
0.40
0.20
0.00
-10.0
-5.0
0.0
5.0
10.0
x ->



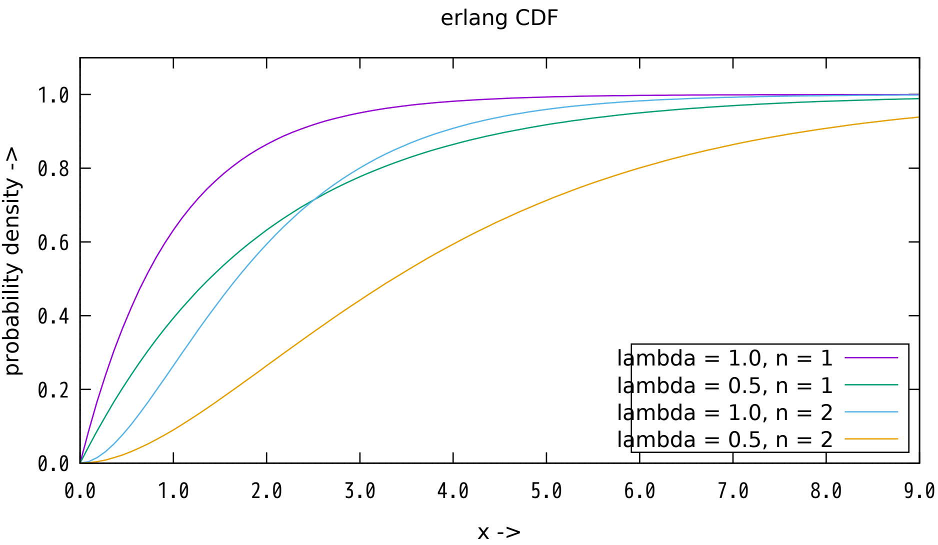
chi-square PDF
probability density ->
x ->
0.50
0.40
0.30
0.20
0.10
0.00
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
k = 1
k = 2
k = 3
k = 4
k = 5
k = 6
k = 7
k = 8



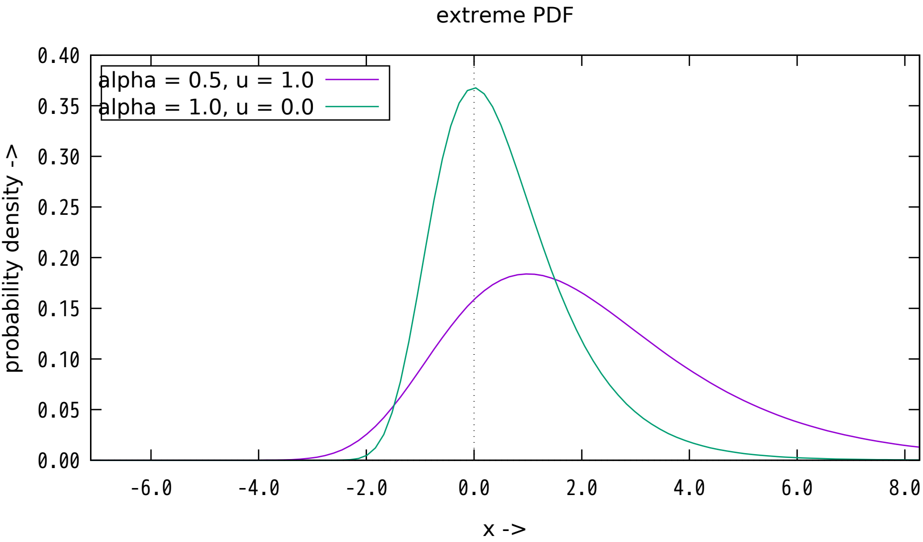
chi-square CDF
probability density ->
x ->
1.00
0.80
0.60
0.40
0.20
0.00
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
k = 1
k = 2
k = 3
k = 4
k = 5
k = 6
k = 7
k = 8



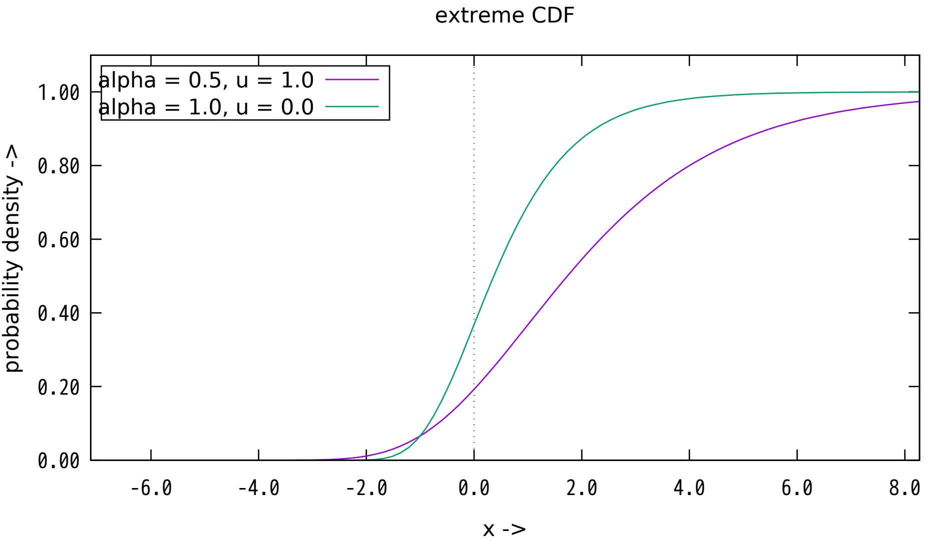
erlang PDF
lambda = 1.0, n = 1
lambda = 0.5, n = 1
lambda = 1.0, n = 2
lambda = 0.5, n = 2
n = 1, exponential r.v.
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0

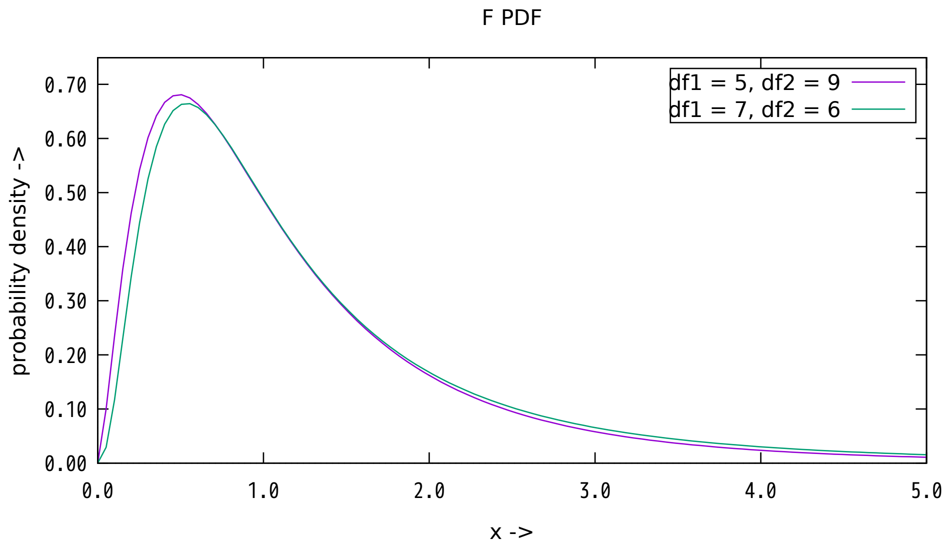


erlang CDF
probability density ->
x ->
1.0
0.8
0.6
0.4
0.2
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
lambda = 1.0, n = 1
lambda = 0.5, n = 1
lambda = 1.0, n = 2
lambda = 0.5, n = 2

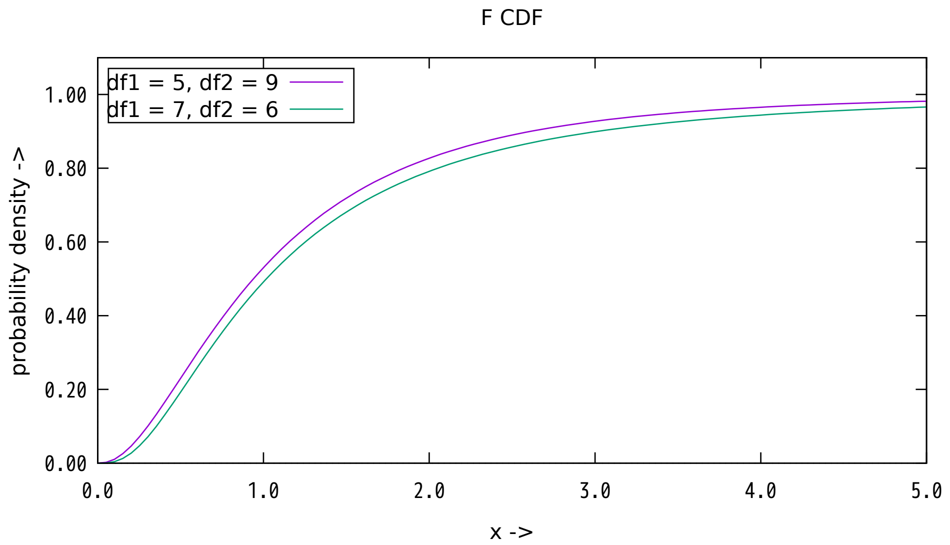


extreme PDF
alpha = 0.5, u = 1.0
alpha = 1.0, u = 0.0
probability density ->
x ->
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
-6.0
-4.0
-2.0
0.0
2.0
4.0
6.0
8.0

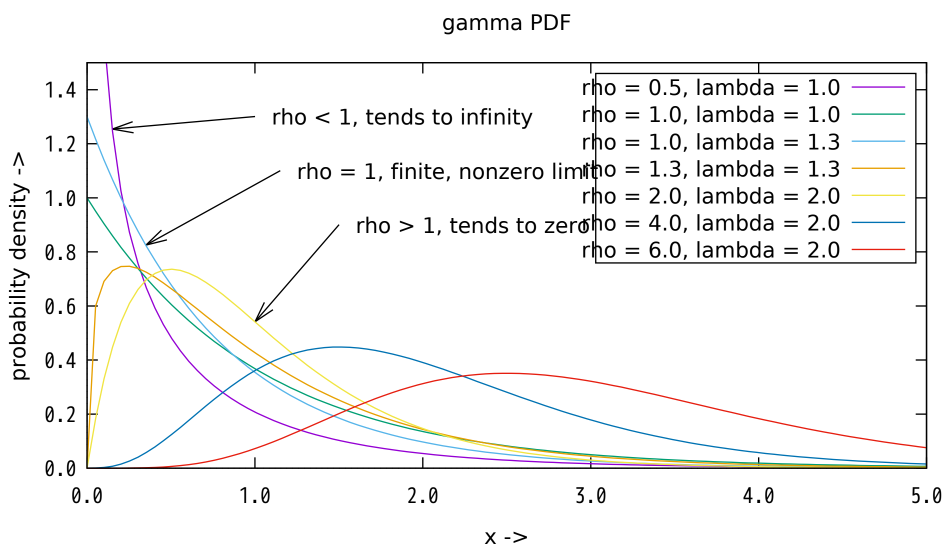

extreme CDF
alpha = 0.5, u = 1.0
alpha = 1.0, u = 0.0
probability density ->
x ->
0.00
0.20
0.40
0.60
0.80
1.00
-6.0
-4.0
-2.0
0.0
2.0
4.0
6.0
8.0



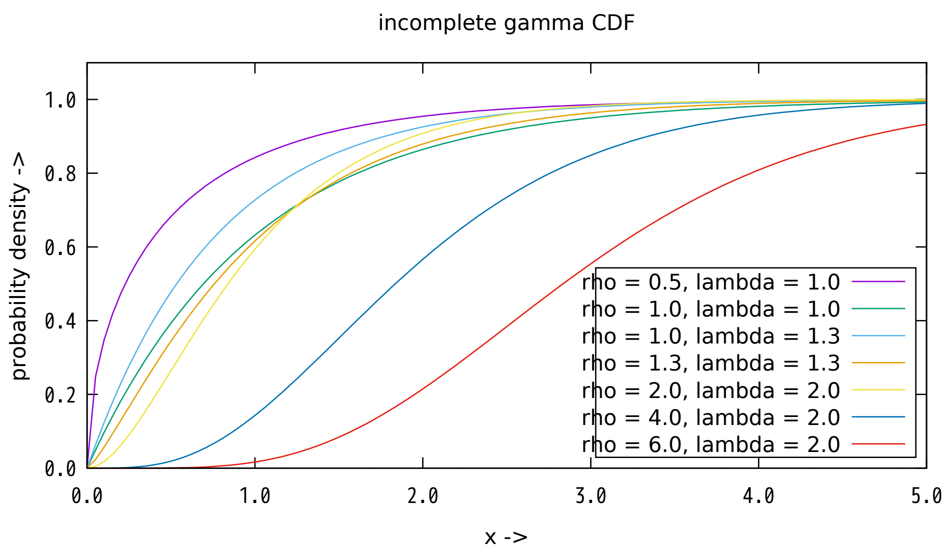
F PDF
df1 = 5, df2 = 9
df1 = 7, df2 = 6
probability density ->
x ->
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.0
1.0
2.0
3.0
4.0
5.0

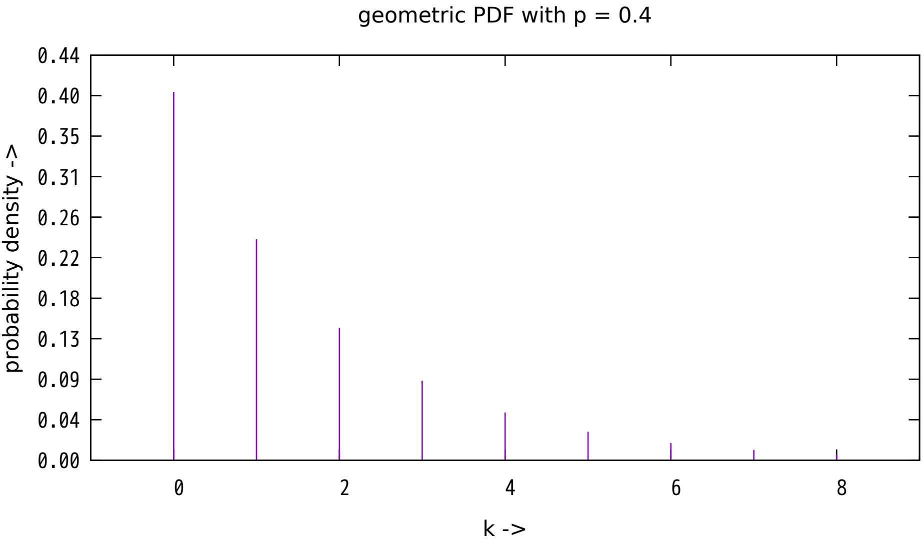


F CDF
df1 = 5, df2 = 9
df1 = 7, df2 = 6
probability density ->
1.00
0.80
0.60
0.40
0.20
0.00
0.0
1.0
2.0
3.0
4.0
5.0
x ->

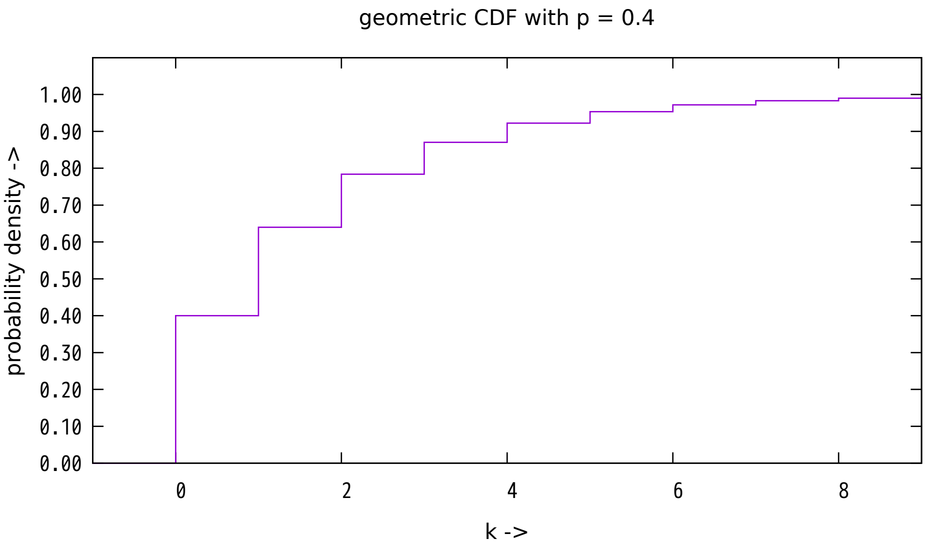


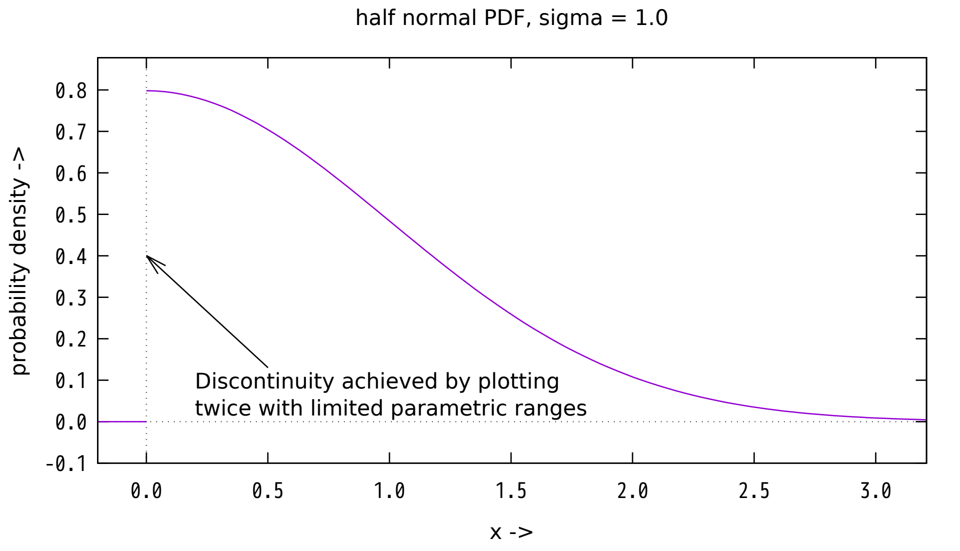
gamma PDF
rho < 1, tends to infinity
rho = 1, finite, nonzero limit
rho > 1, tends to zero
rho = 0.5, lambda = 1.0
rho = 1.0, lambda = 1.0
rho = 1.0, lambda = 1.3
rho = 1.3, lambda = 1.3
rho = 2.0, lambda = 2.0
rho = 4.0, lambda = 2.0
rho = 6.0, lambda = 2.0
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0.0
1.0
2.0
3.0
4.0
5.0


incomplete gamma CDF
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
0.0
1.0
2.0
3.0
4.0
5.0
rho = 0.5, lambda = 1.0
rho = 1.0, lambda = 1.0
rho = 1.0, lambda = 1.3
rho = 1.3, lambda = 1.3
rho = 2.0, lambda = 2.0
rho = 4.0, lambda = 2.0
rho = 6.0, lambda = 2.0

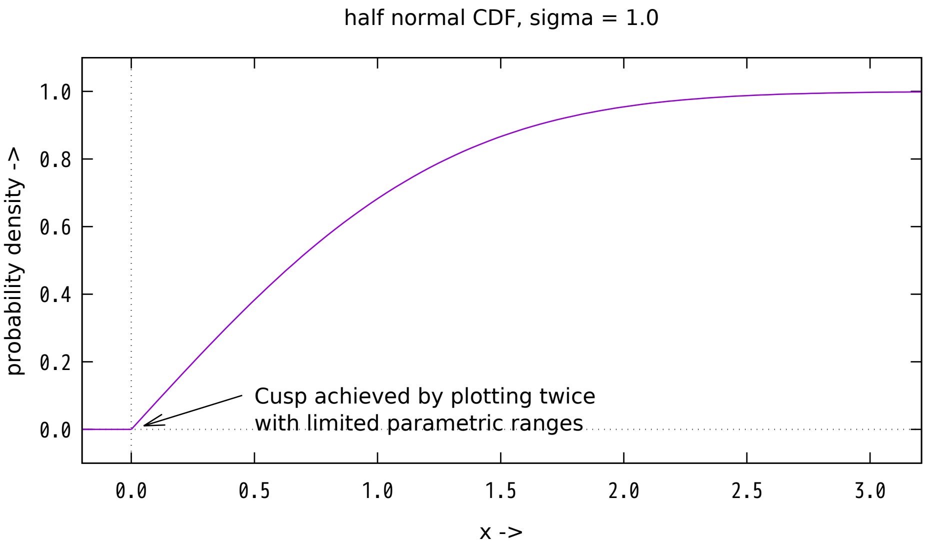


geometric PDF with p = 0.4
probability density ->
0.44
0.40
0.35
0.31
0.26
0.22
0.18
0.13
0.09
0.04
0.00
0
2
4
6
8
k ->

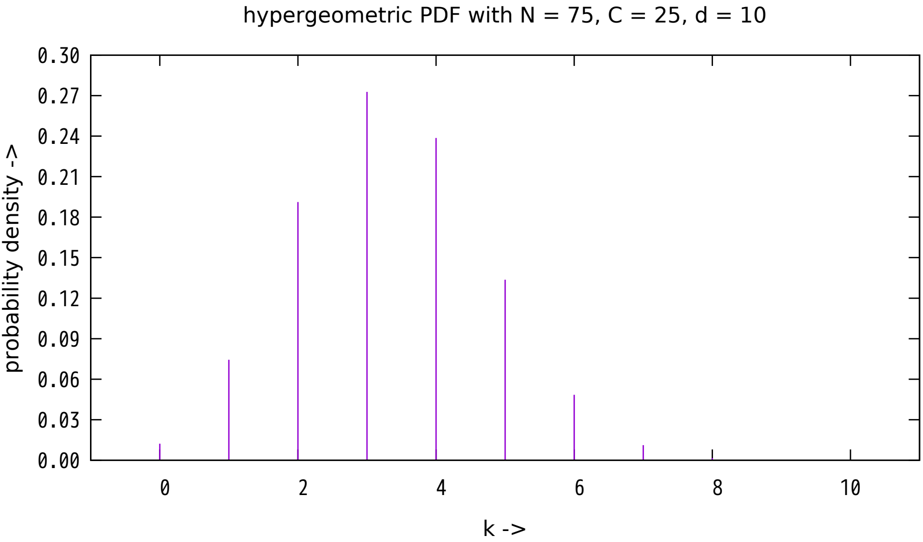

geometric CDF with p = 0.4
probability density ->
k ->
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
2
4
6
8

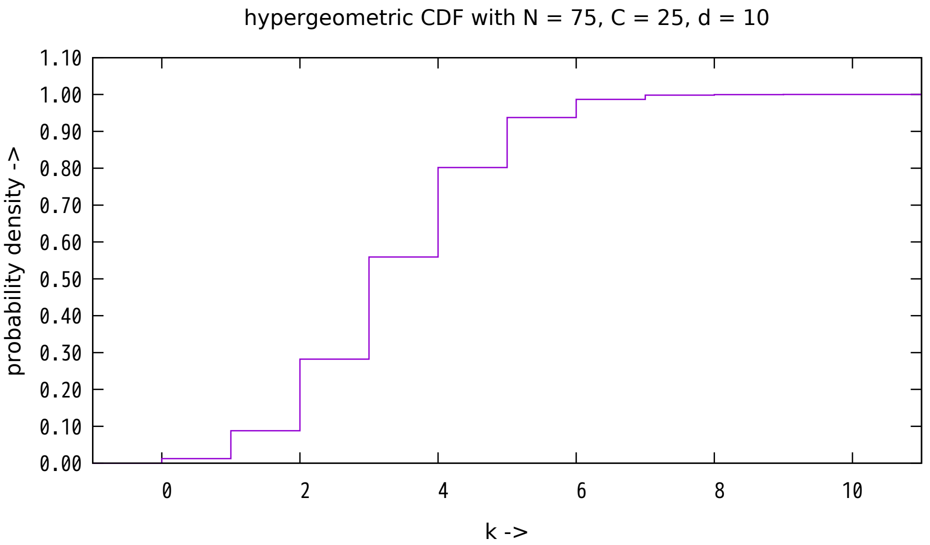


half normal PDF, sigma = 1.0
probability density ->
x ->
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Discontinuity achieved by plotting
twice with limited parametric ranges

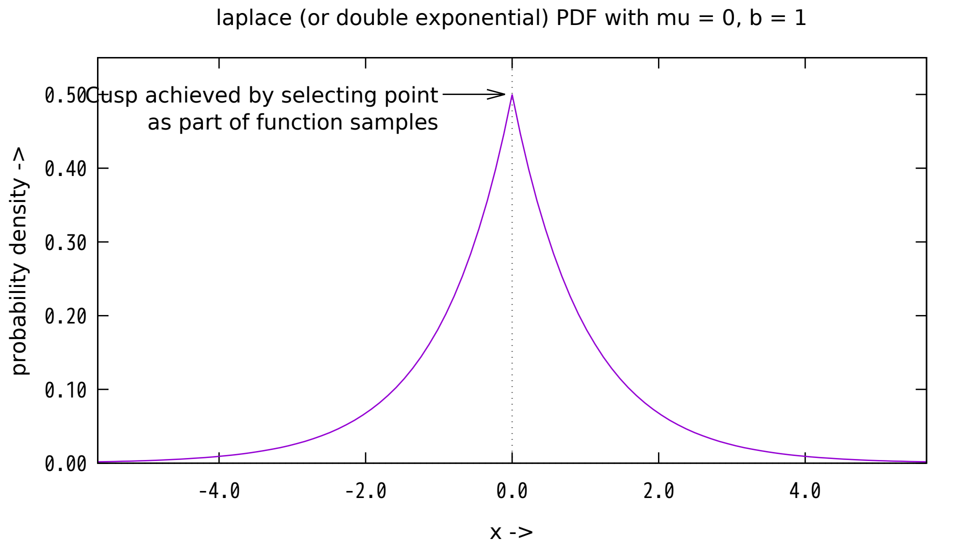


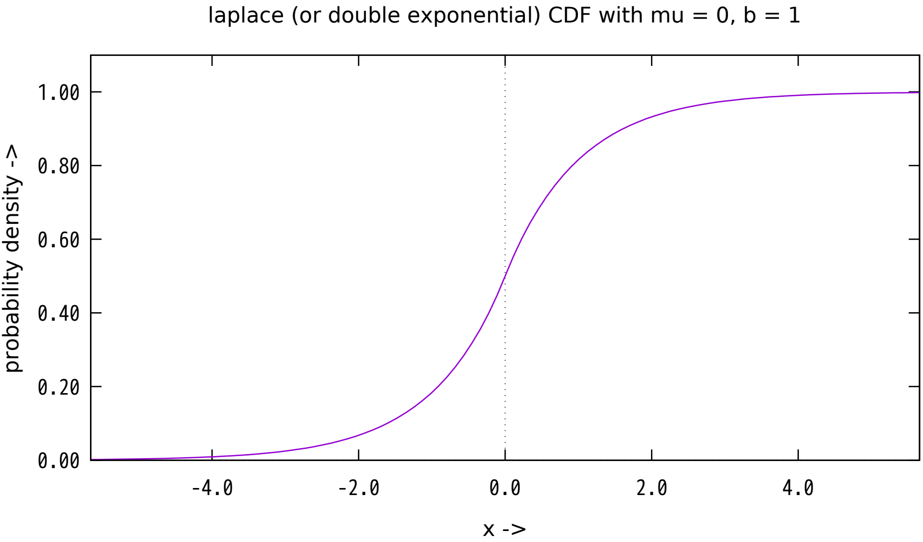
half normal CDF, sigma = 1.0
probability density ->
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
x ->
Cusp achieved by plotting twice
with limited parametric ranges

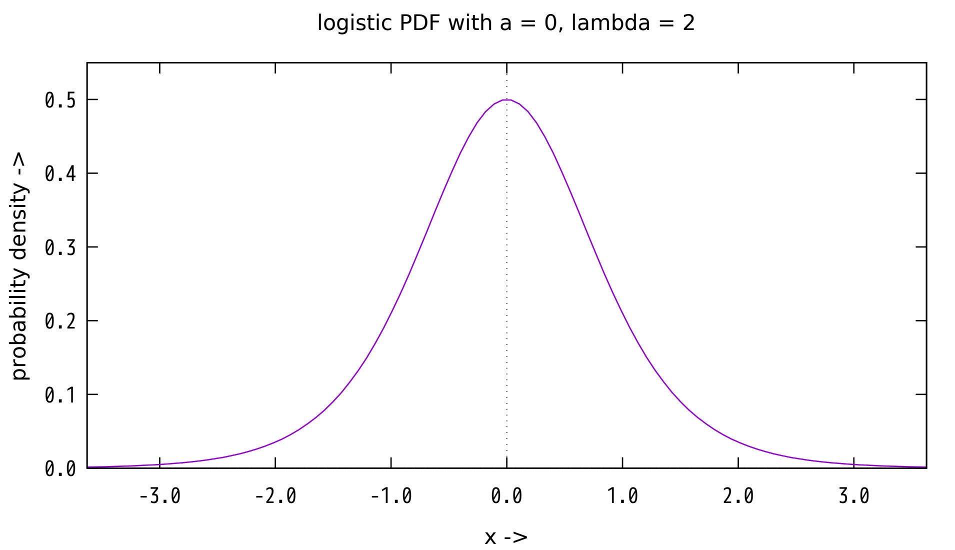

hypergeometric PDF with N = 75, C = 25, d = 10
probability density ->
k ->
0.30
0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
0.03
0.00
0
2
4
6
8
10

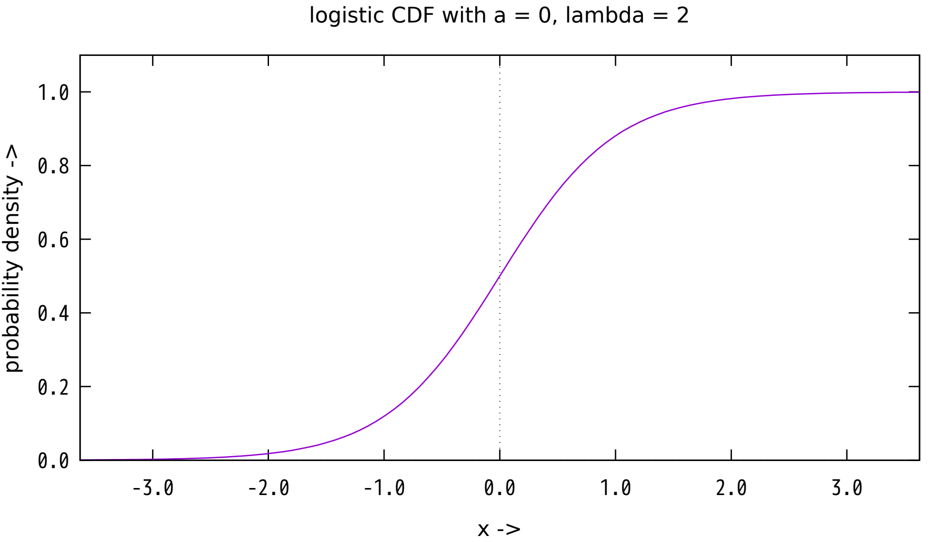


hypergeometric CDF with N = 75, C = 25, d = 10
probability density ->
k ->
1.10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
2
4
6
8
10

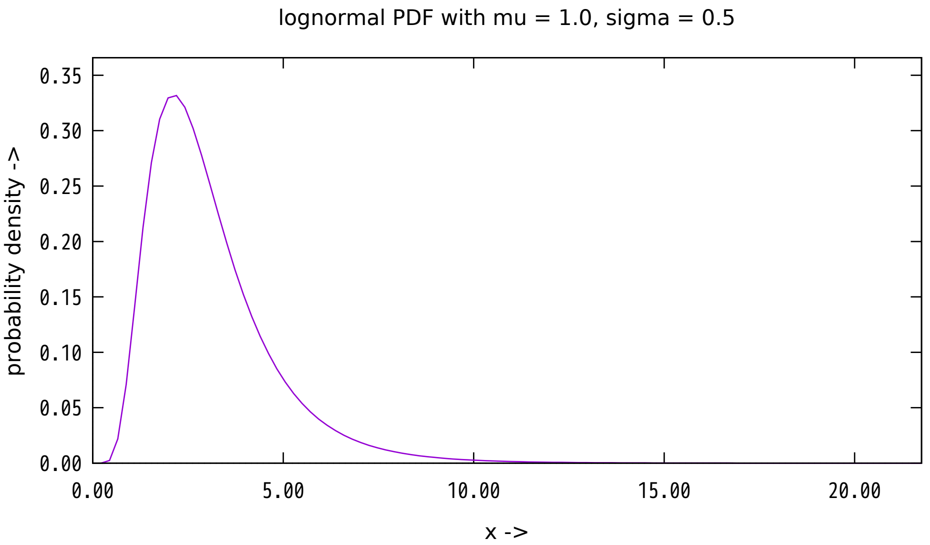

laplace (or double exponential) PDF with mu = 0, b = 1
Cusp achieved by selecting point
as part of function samples
probability density ->
x ->
0.00
0.10
0.20
0.30
0.40
0.50
-4.0
-2.0
0.0
2.0
4.0


laplace (or double exponential) CDF with mu = 0, b = 1
probability density ->
x ->
1.00
0.80
0.60
0.40
0.20
0.00
-4.0
-2.0
0.0
2.0
4.0

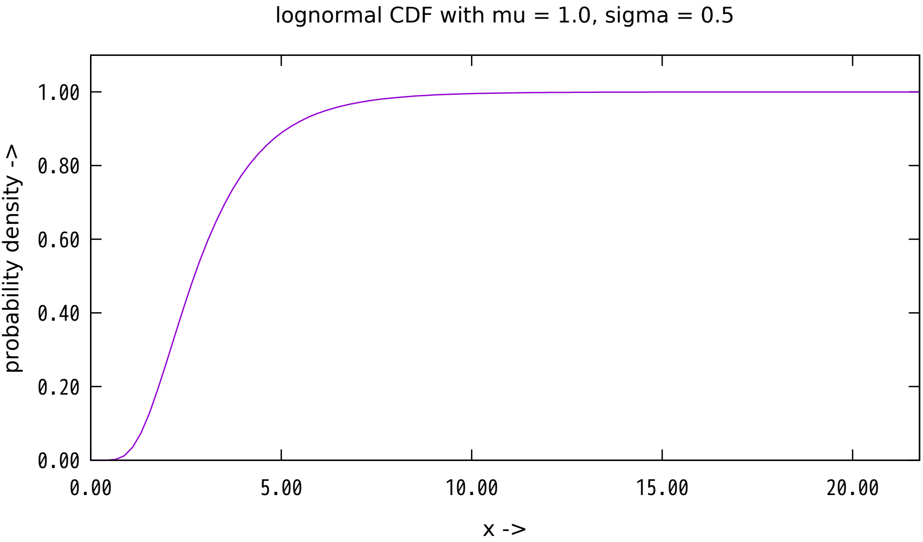

logistic PDF with a = 0, lambda = 2
probability density ->
x ->
0.0
0.1
0.2
0.3
0.4
0.5
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0

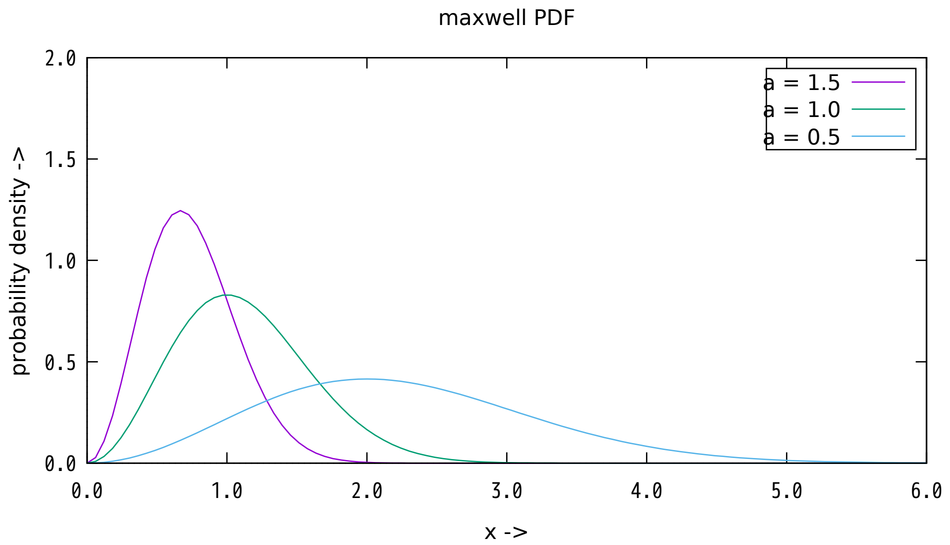


logistic CDF with a = 0, lambda = 2
probability density ->
x ->
1.0
0.8
0.6
0.4
0.2
0.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0

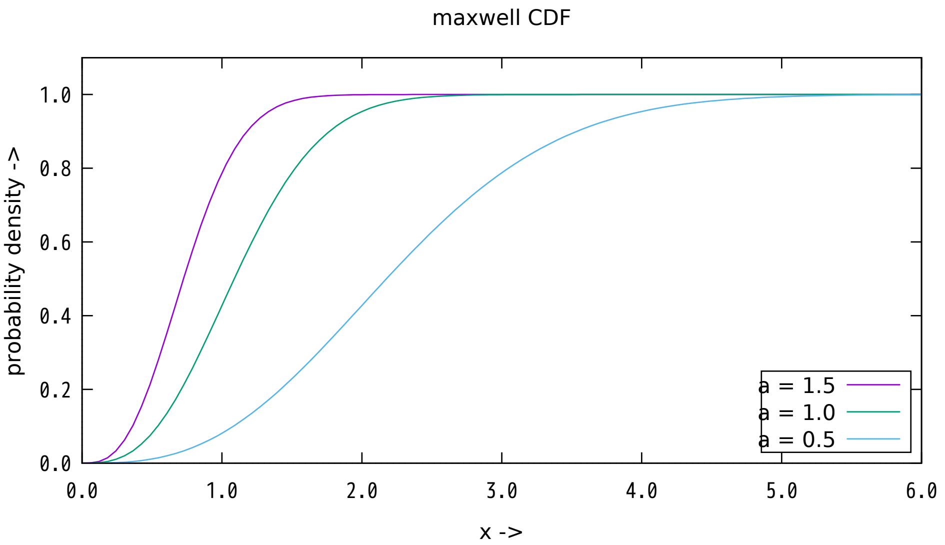


lognormal PDF with mu = 1.0, sigma = 0.5
probability density ->
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.00
5.00
10.00
15.00
20.00
x ->

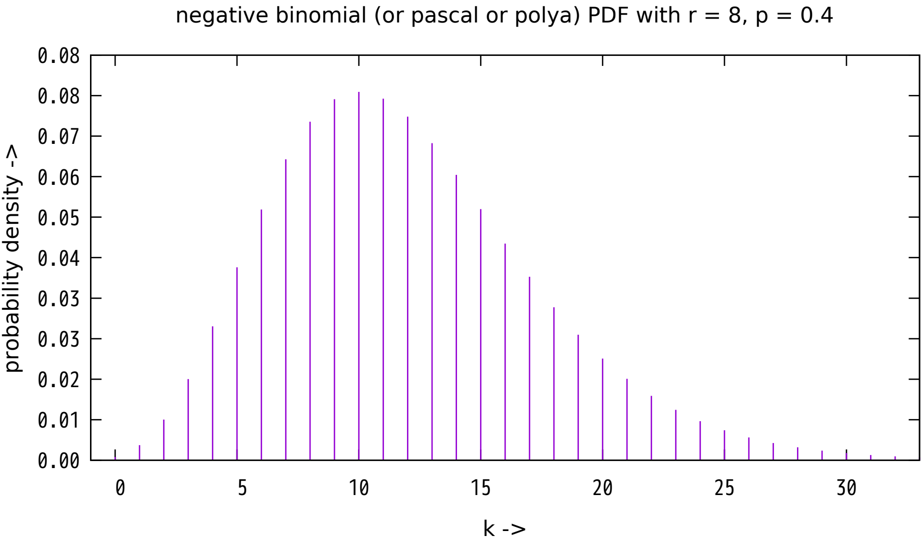

lognormal CDF with mu = 1.0, sigma = 0.5
probability density ->
x ->
1.00
0.80
0.60
0.40
0.20
0.00
0.00
5.00
10.00
15.00
20.00



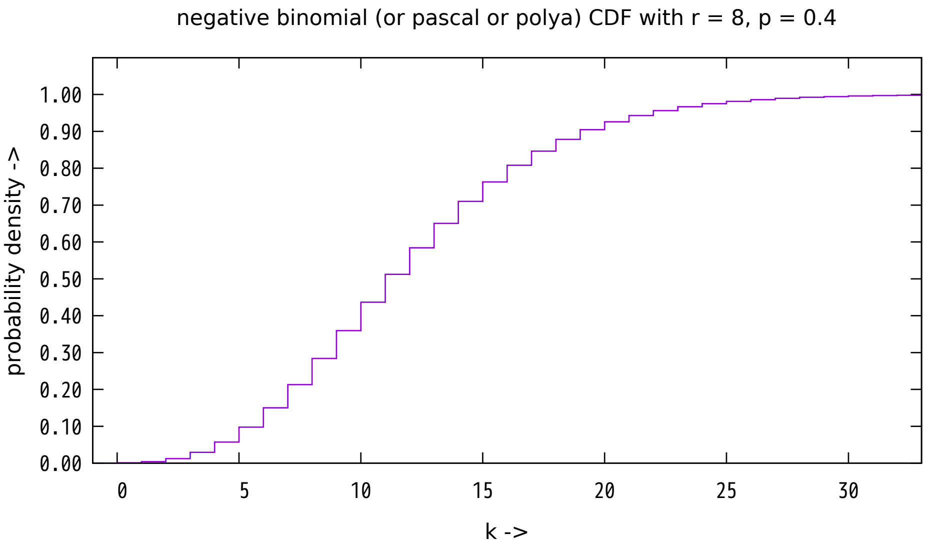
maxwell PDF
a = 1.5
a = 1.0
a = 0.5
probability density ->
x ->
2.0
1.5
1.0
0.5
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0



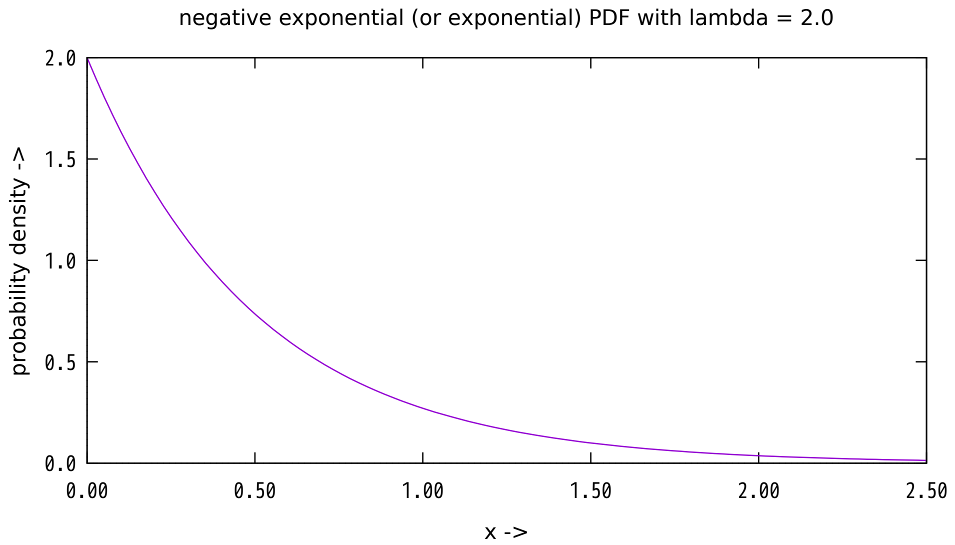
maxwell CDF
probability density ->
x ->
1.0
0.8
0.6
0.4
0.2
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
a = 1.5
a = 1.0
a = 0.5



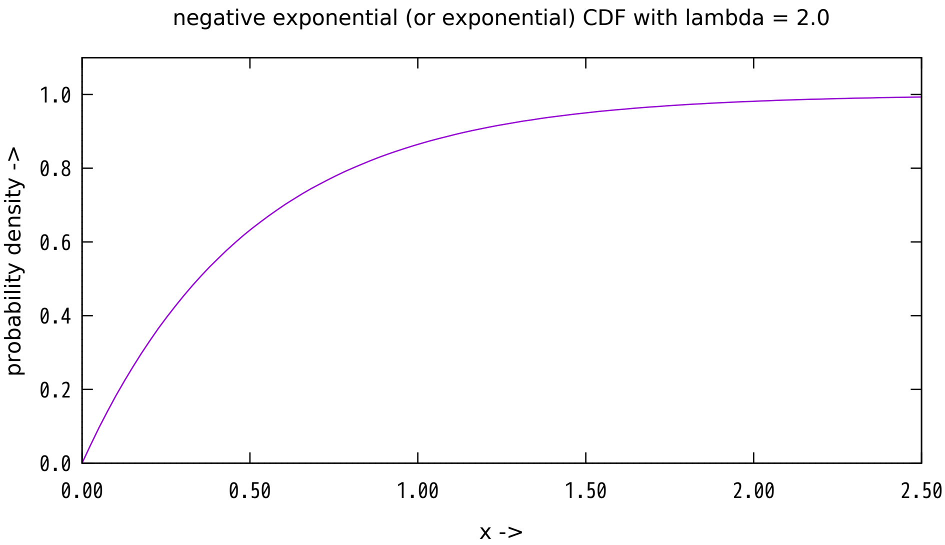
negative binomial (or pascal or polya) PDF with r = 8, p = 0.4
probability density ->
k ->
0.08
0.08
0.07
0.06
0.05
0.04
0.03
0.03
0.02
0.01
0.00
0
5
10
15
20
25
30

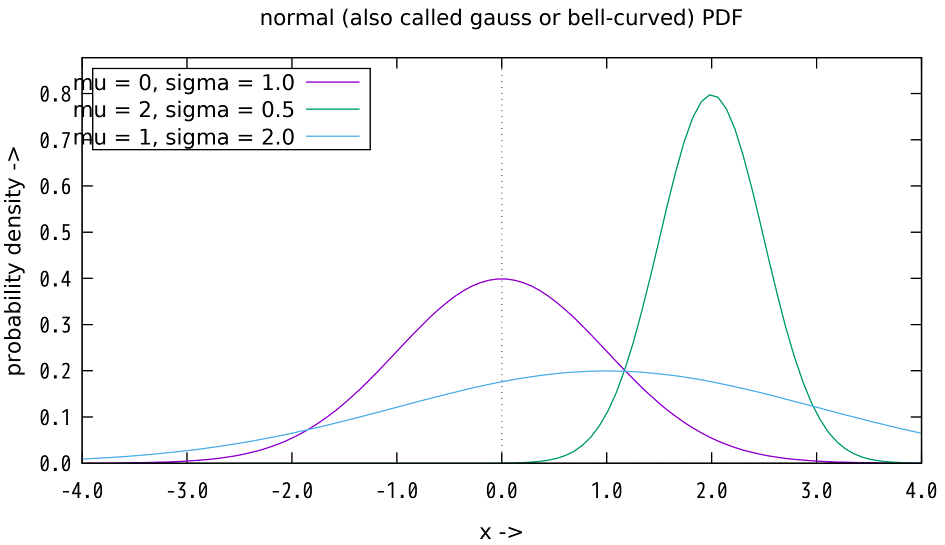


negative binomial (or pascal or polya) CDF with r = 8, p = 0.4
probability density ->
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
5
10
15
20
25
30
k ->

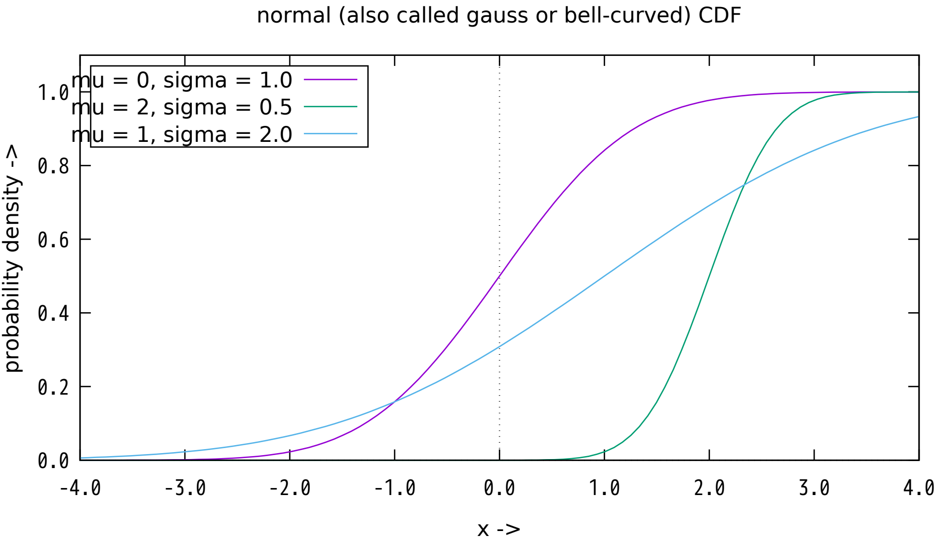


negative exponential (or exponential) PDF with lambda = 2.0
probability density ->
2.0
1.5
1.0
0.5
0.0
0.00
0.50
1.00
1.50
2.00
2.50
x ->

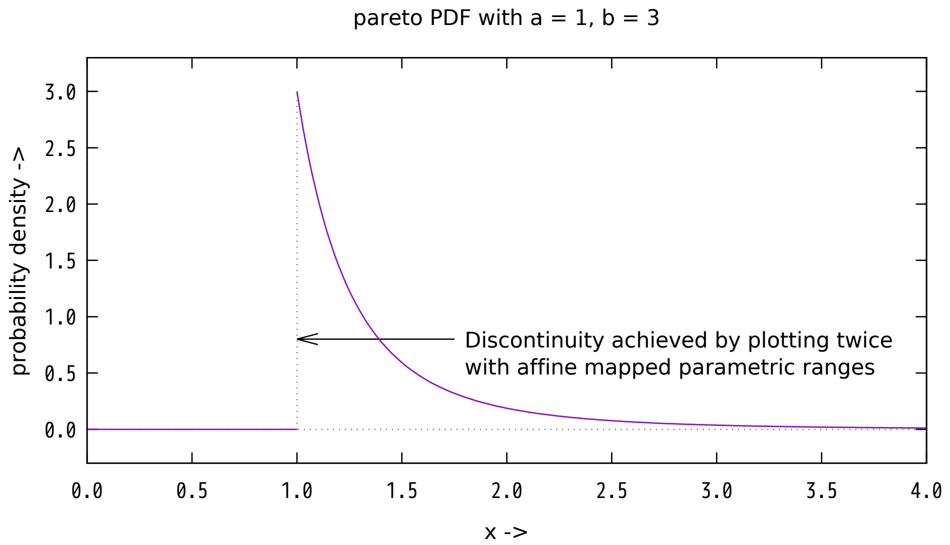

negative exponential (or exponential) CDF with lambda = 2.0
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
0.00
0.50
1.00
1.50
2.00
2.50

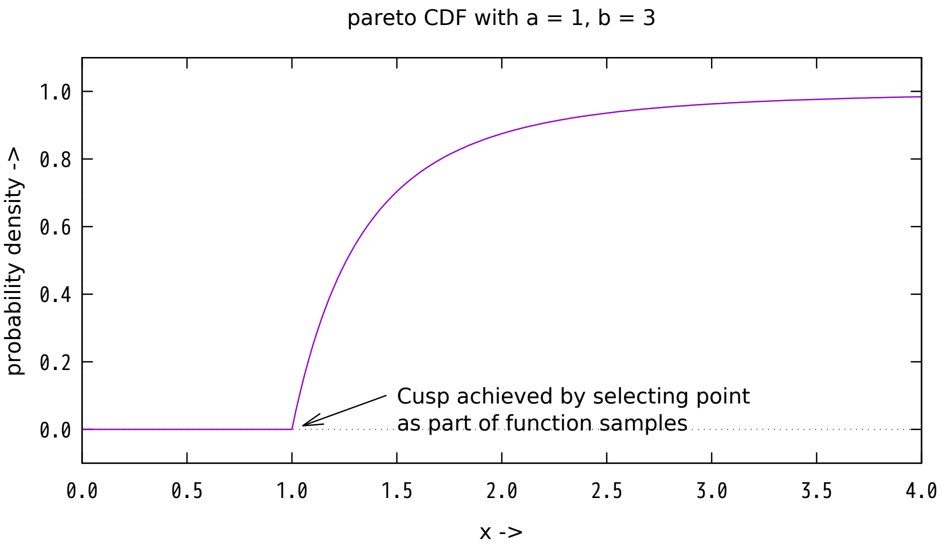


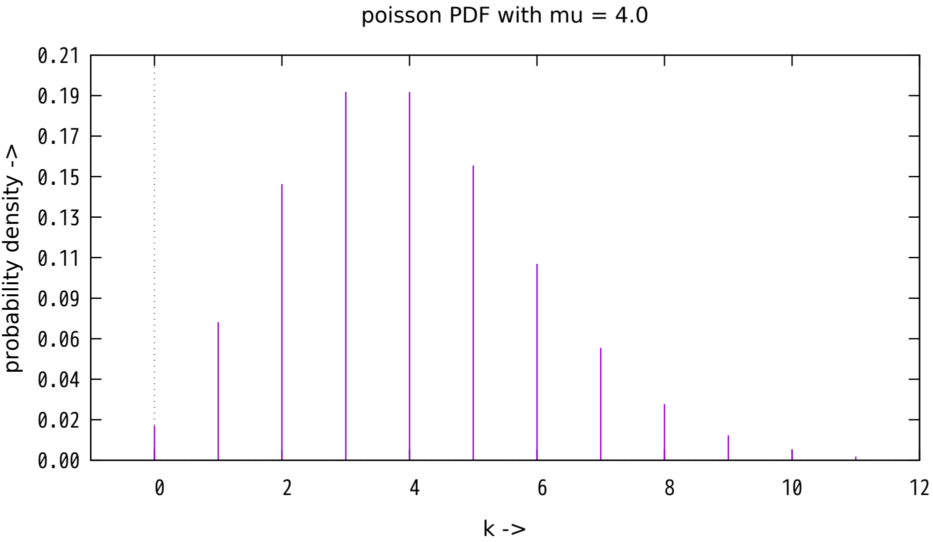
normal (also called gauss or bell-curved) PDF
mu = 0, sigma = 1.0
mu = 2, sigma = 0.5
mu = 1, sigma = 2.0
probability density ->
x ->
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0



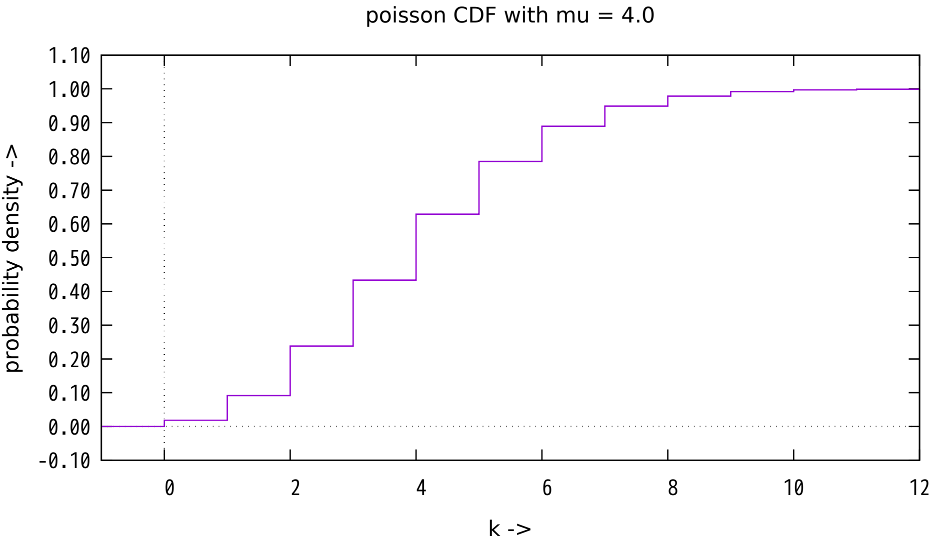
normal (also called gauss or bell-curved) CDF
mu = 0, sigma = 1.0
mu = 2, sigma = 0.5
mu = 1, sigma = 2.0
probability density ->
0.0
0.2
0.4
0.6
0.8
1.0
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
x ->


pareto PDF with a = 1, b = 3
probability density ->
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
x ->
Discontinuity achieved by plotting twice
with affine mapped parametric ranges

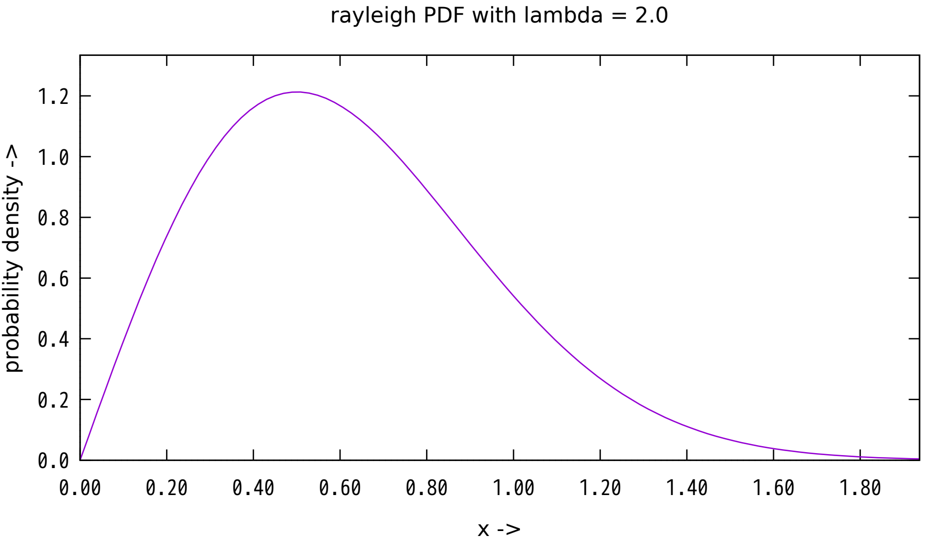

pareto CDF with a = 1, b = 3
probability density ->
x ->
Cusp achieved by selecting point
as part of function samples
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0



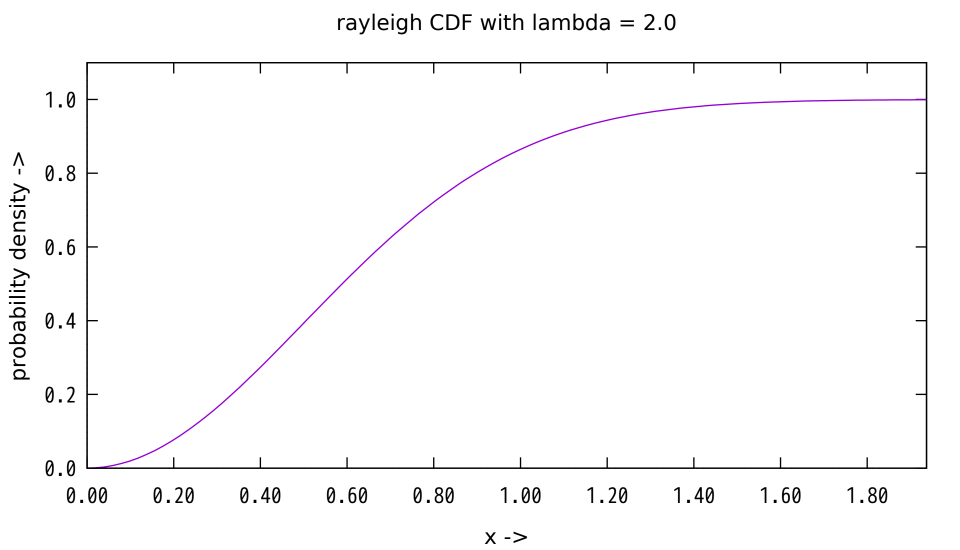
poisson PDF with mu = 4.0
probability density ->
k ->
0.21
0.19
0.17
0.15
0.13
0.11
0.09
0.06
0.04
0.02
0.00
0
2
4
6
8
10
12



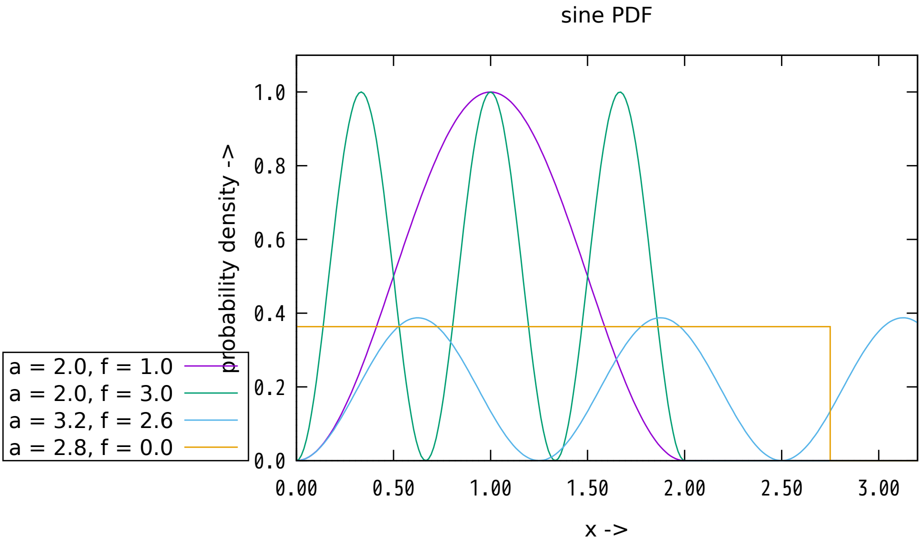
poisson CDF with mu = 4.0
probability density ->
k ->
1.10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
-0.10
0
2
4
6
8
10
12



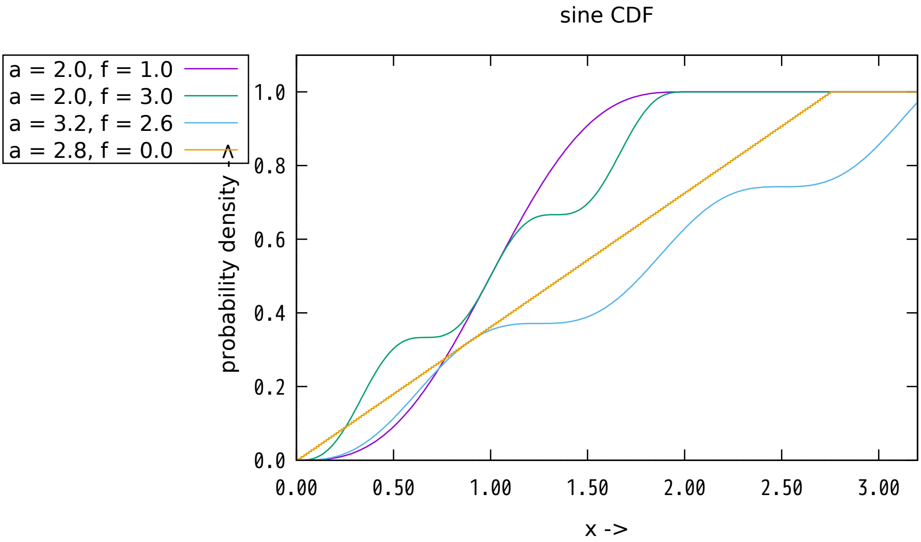
rayleigh PDF with lambda = 2.0
probability density ->
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
x ->



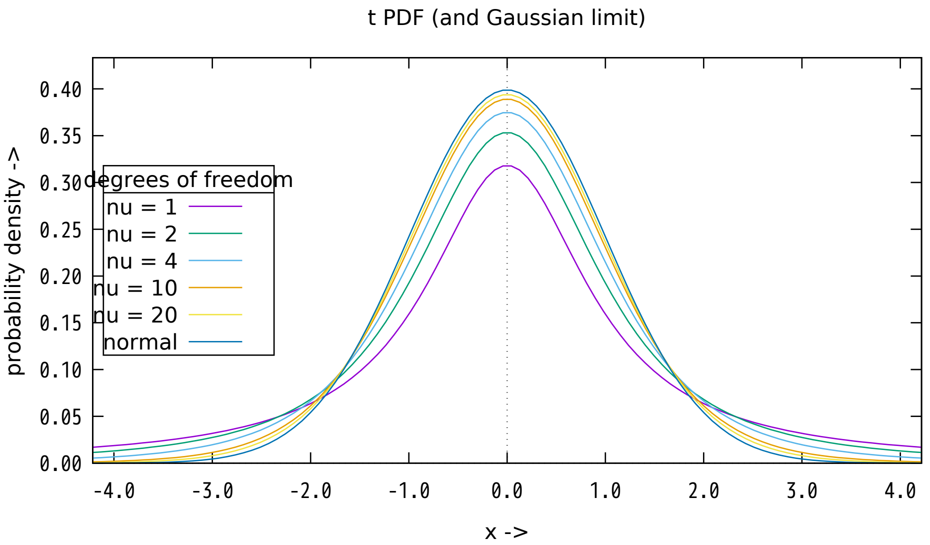
rayleigh CDF with lambda = 2.0
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80



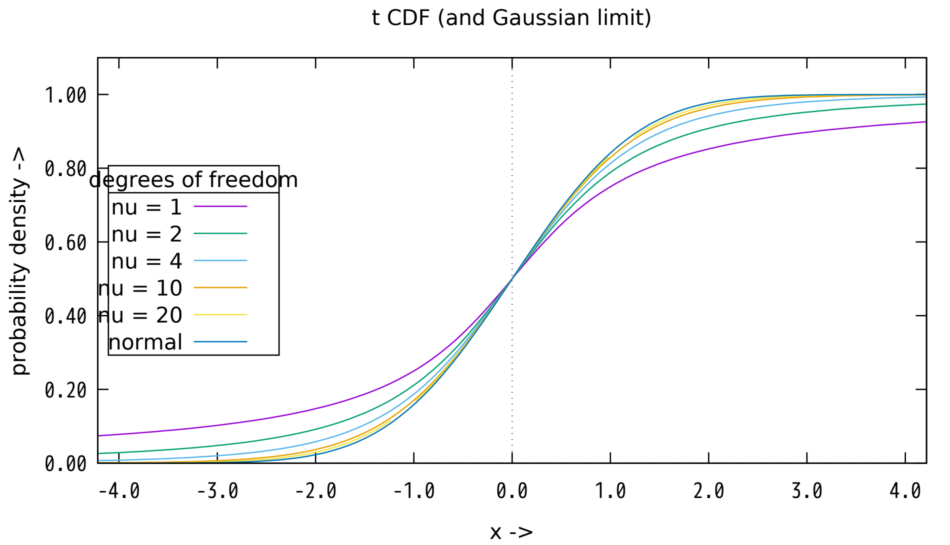
sine PDF
probability density ->
x ->
1.0
0.8
0.6
0.4
0.2
0.0
0.00
0.50
1.00
1.50
2.00
2.50
3.00
a = 2.0, f = 1.0
a = 2.0, f = 3.0
a = 3.2, f = 2.6
a = 2.8, f = 0.0



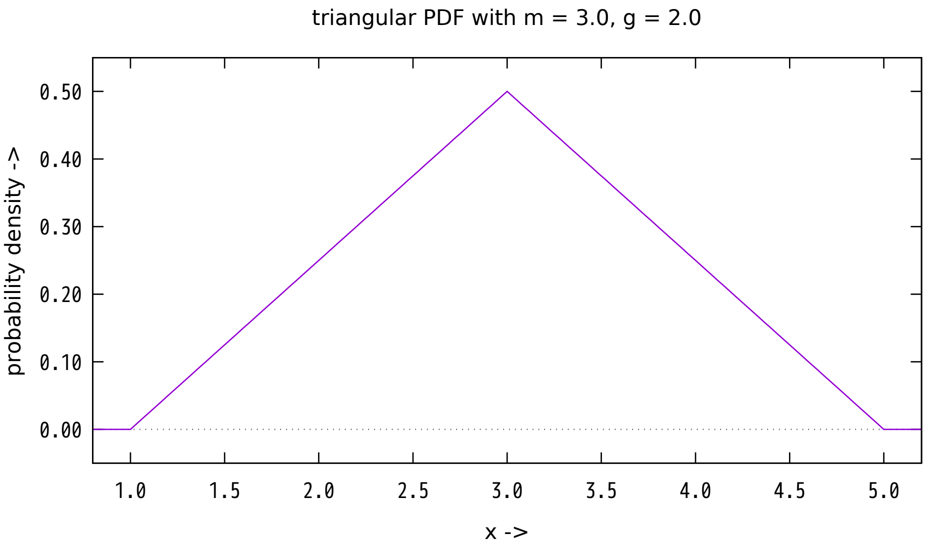
sine CDF
a = 2.0, f = 1.0
a = 2.0, f = 3.0
a = 3.2, f = 2.6
a = 2.8, f = 0.0
probability density ->
x ->
0.0
0.2
0.4
0.6
0.8
1.0
0.00
0.50
1.00
1.50
2.00
2.50
3.00



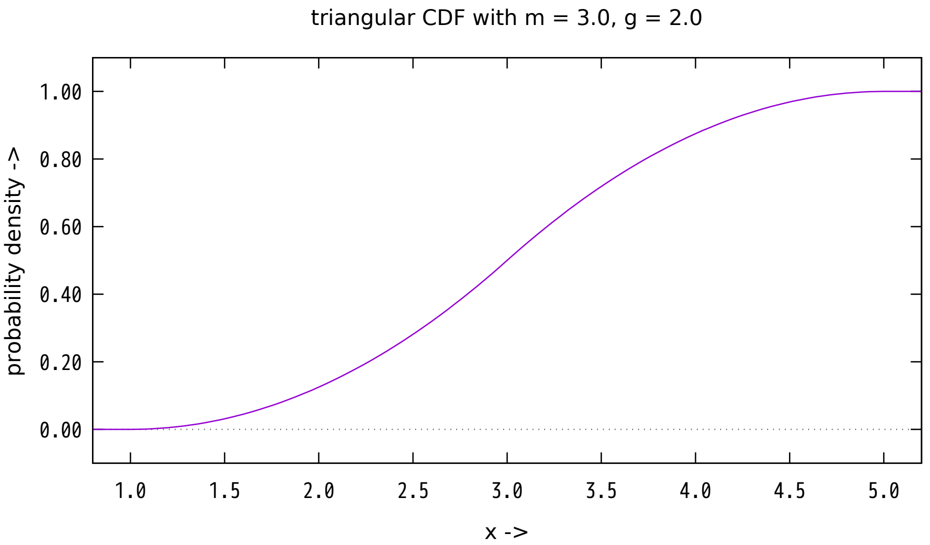
t PDF (and Gaussian limit)
probability density ->
x ->
degrees of freedom
nu = 1
nu = 2
nu = 4
nu = 10
nu = 20
normal
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0



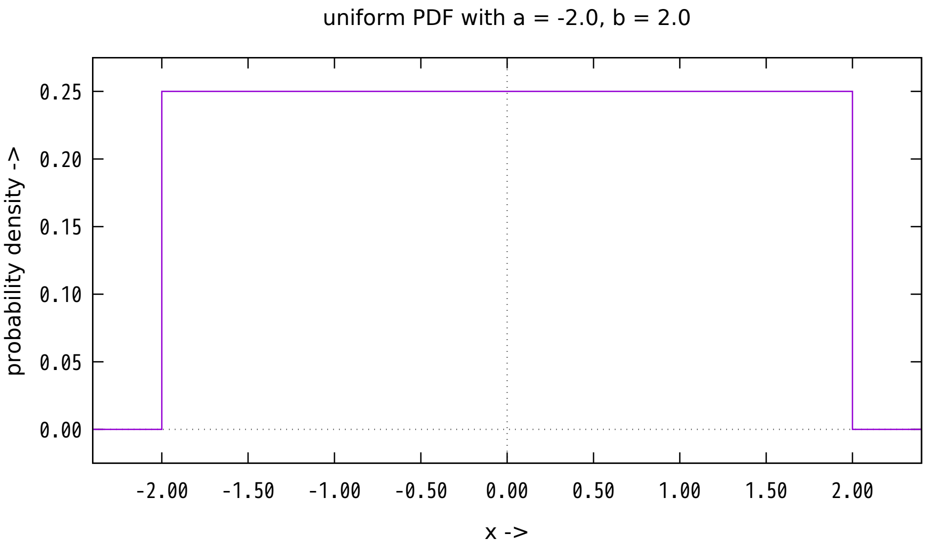
t CDF (and Gaussian limit)
probability density ->
x ->
degrees of freedom
nu = 1
nu = 2
nu = 4
nu = 10
nu = 20
normal
1.00
0.80
0.60
0.40
0.20
0.00
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0



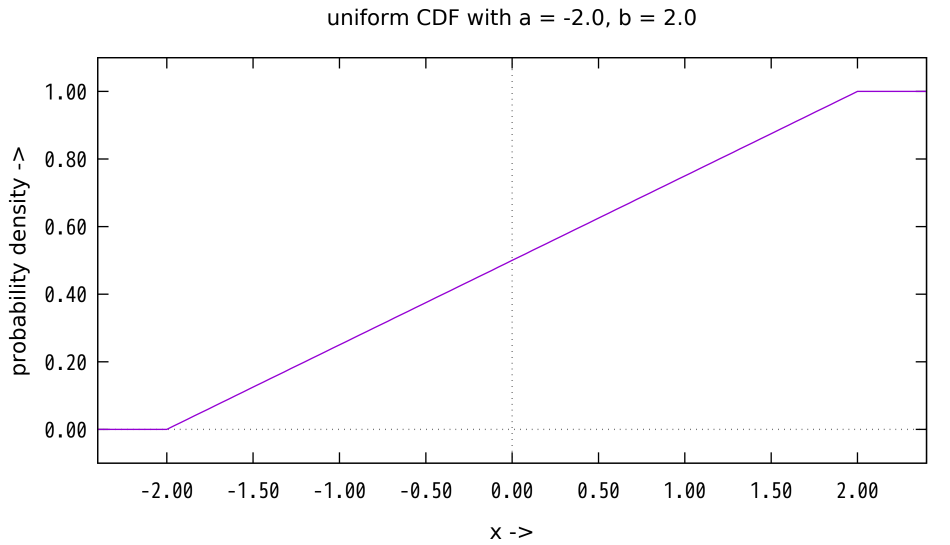
triangular PDF with m = 3.0, g = 2.0
probability density ->
0.50
0.40
0.30
0.20
0.10
0.00
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
x ->

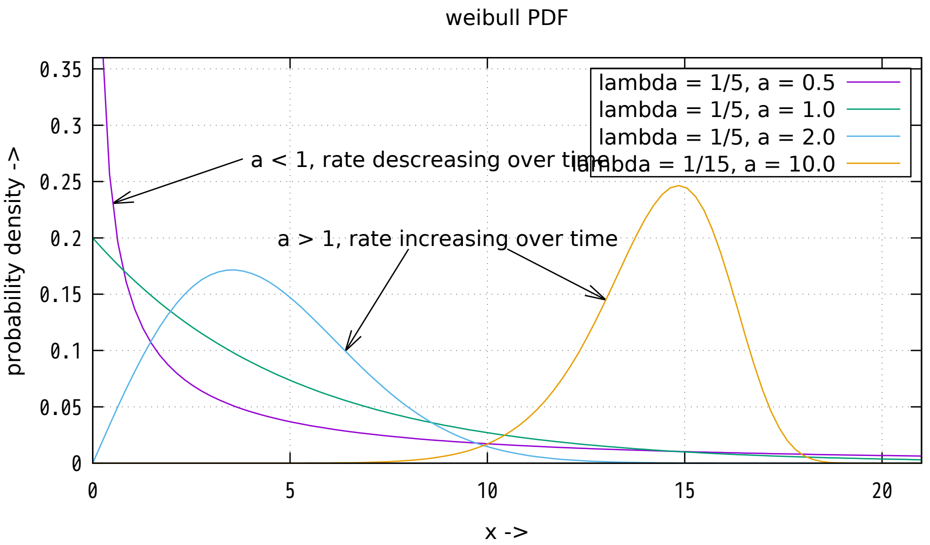


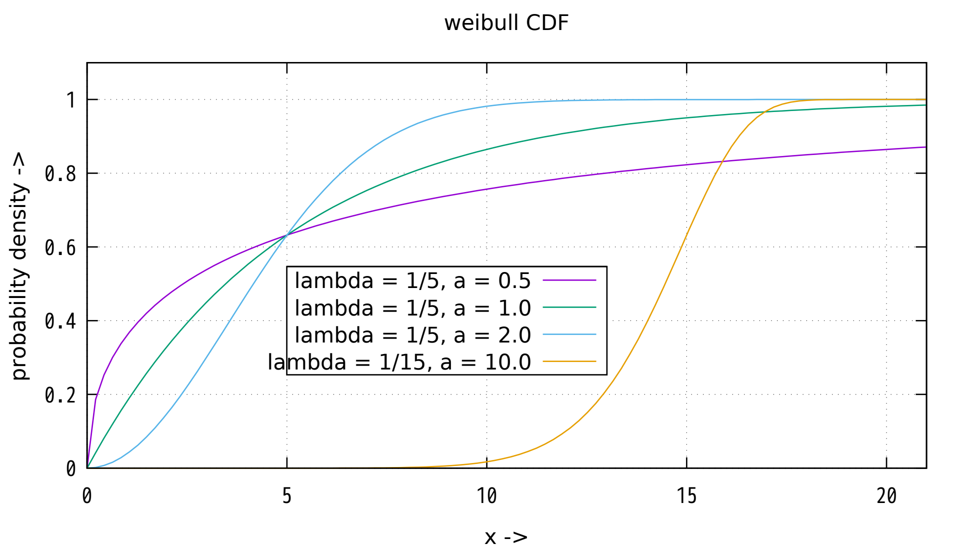
triangular CDF with m = 3.0, g = 2.0
probability density ->
x ->
1.00
0.80
0.60
0.40
0.20
0.00
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0



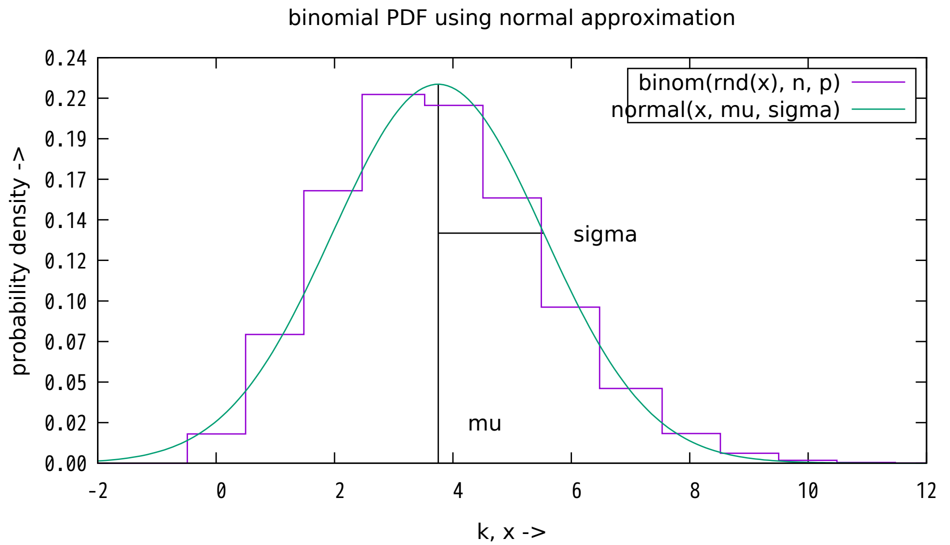
uniform PDF with a = -2.0, b = 2.0
0.25
0.20
0.15
0.10
0.05
0.00
probability density ->
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
1.50
2.00
x ->


uniform CDF with a = -2.0, b = 2.0
probability density ->
x ->
1.00
0.80
0.60
0.40
0.20
0.00
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
1.50
2.00

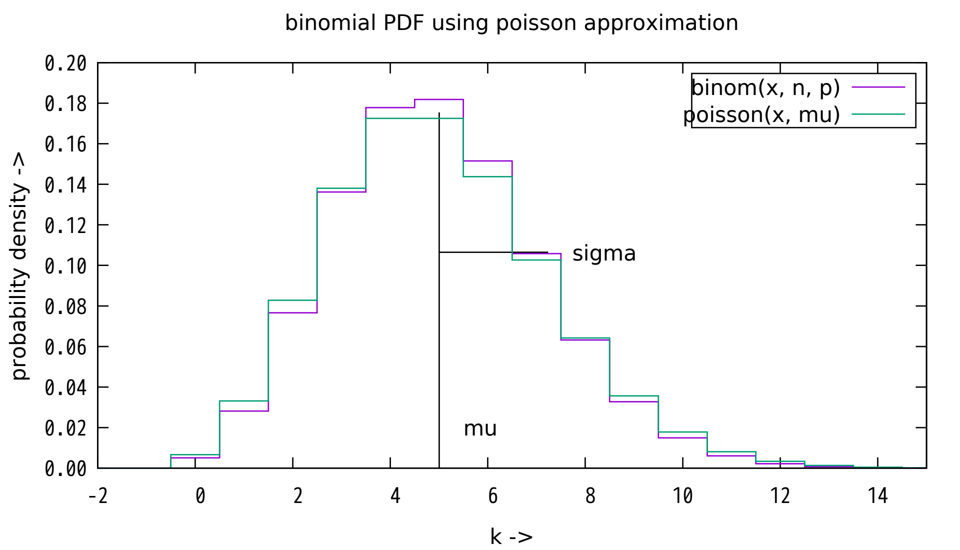

weibull PDF
lambda = 1/5, a = 0.5
lambda = 1/5, a = 1.0
lambda = 1/5, a = 2.0
lambda = 1/15, a = 10.0
a < 1, rate descreasing over time
a > 1, rate increasing over time
probability density ->
x ->
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0
5
10
15
20



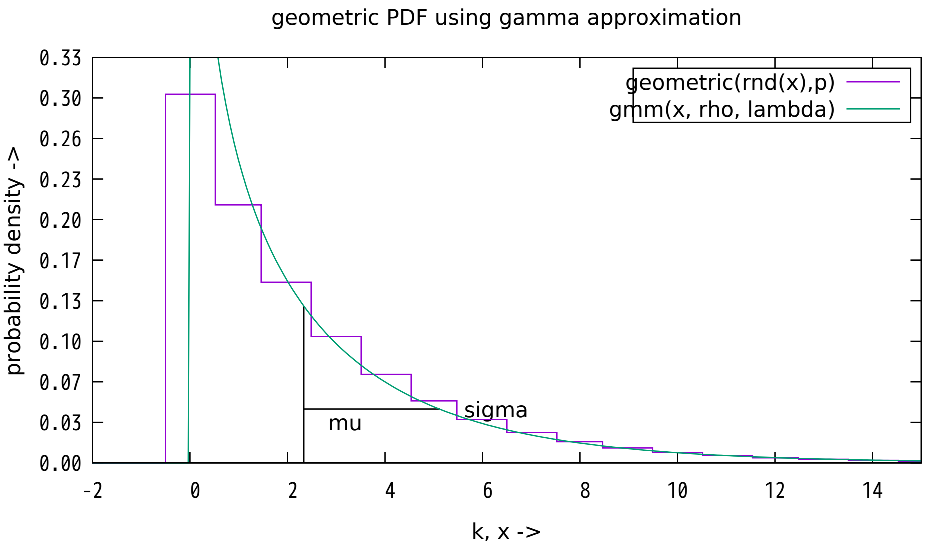
weibull CDF
probability density ->
x ->
0
0.2
0.4
0.6
0.8
1
0
5
10
15
20
lambda = 1/5, a = 0.5
lambda = 1/5, a = 1.0
lambda = 1/5, a = 2.0
lambda = 1/15, a = 10.0

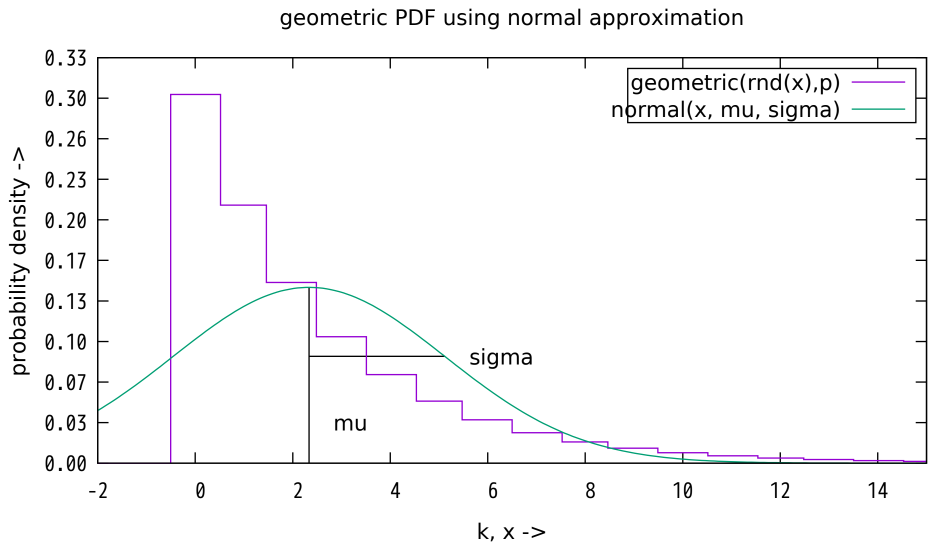


binomial PDF using normal approximation
binom(rnd(x), n, p)
normal(x, mu, sigma)
sigma
mu
probability density ->
k, x ->
0.24
0.22
0.19
0.17
0.14
0.12
0.10
0.07
0.05
0.02
0.00
-2
0
2
4
6
8
10
12

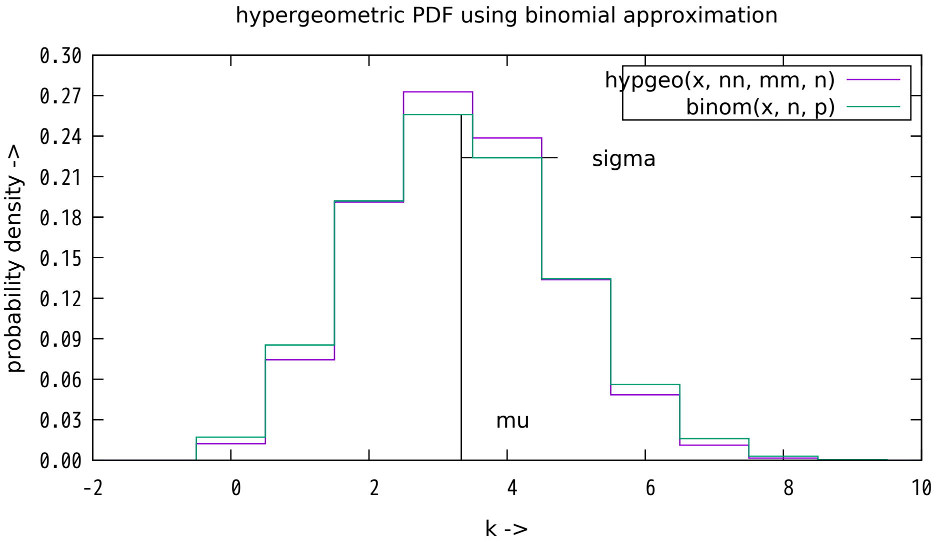


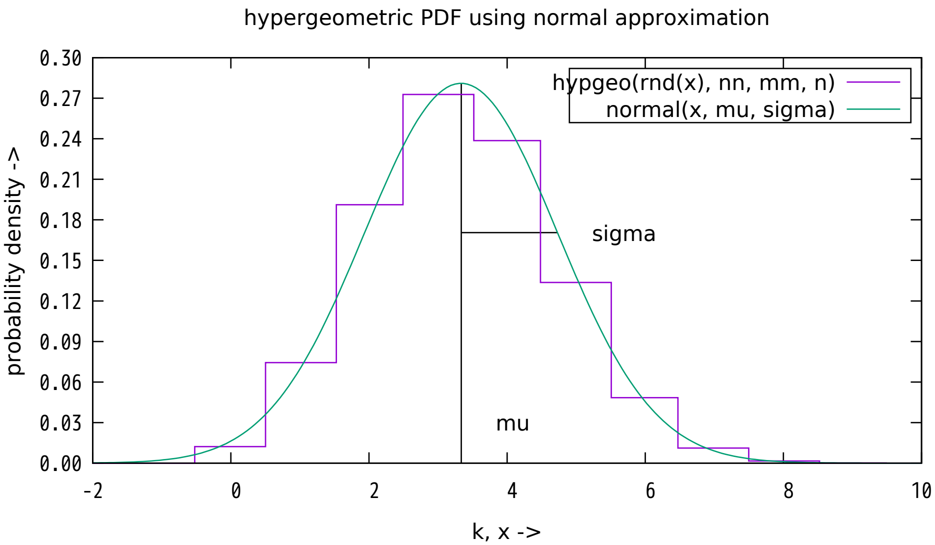
binomial PDF using poisson approximation
binom(x, n, p)
poisson(x, mu)
sigma
mu
probability density ->
k ->
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-2
0
2
4
6
8
10
12
14

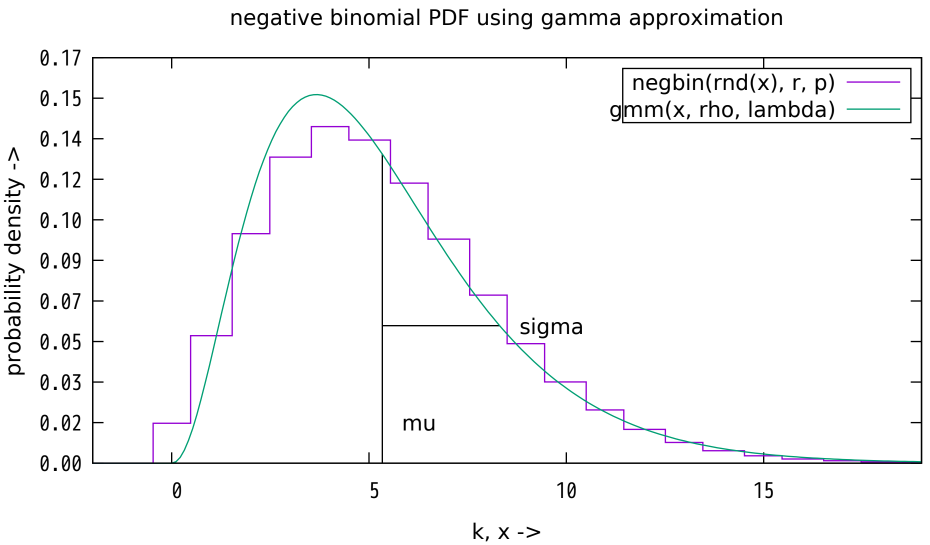

geometric PDF using gamma approximation
geometric(rnd(x),p)
gmm(x, rho, lambda)
probability density ->
k, x ->
0.33
0.30
0.26
0.23
0.20
0.17
0.13
0.10
0.07
0.03
0.00
-2
0
2
4
6
8
10
12
14
sigma
mu

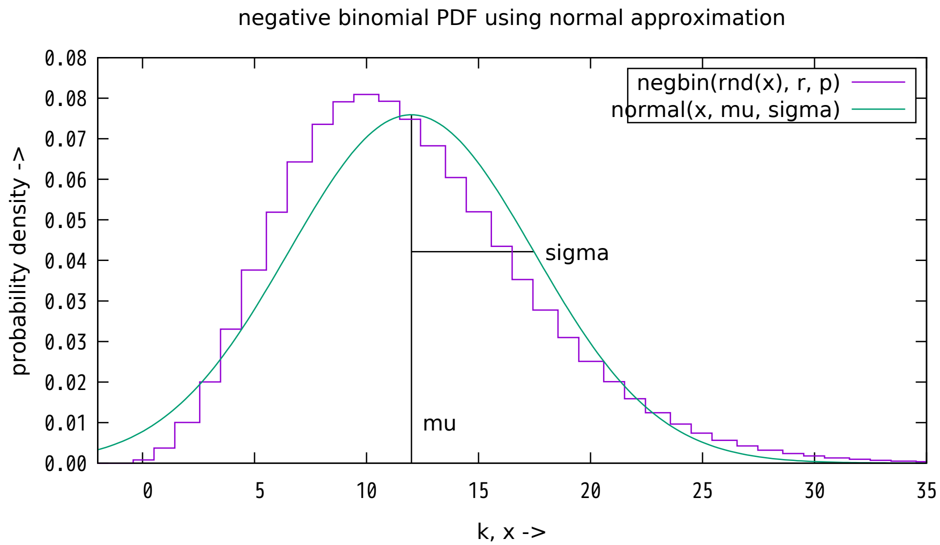


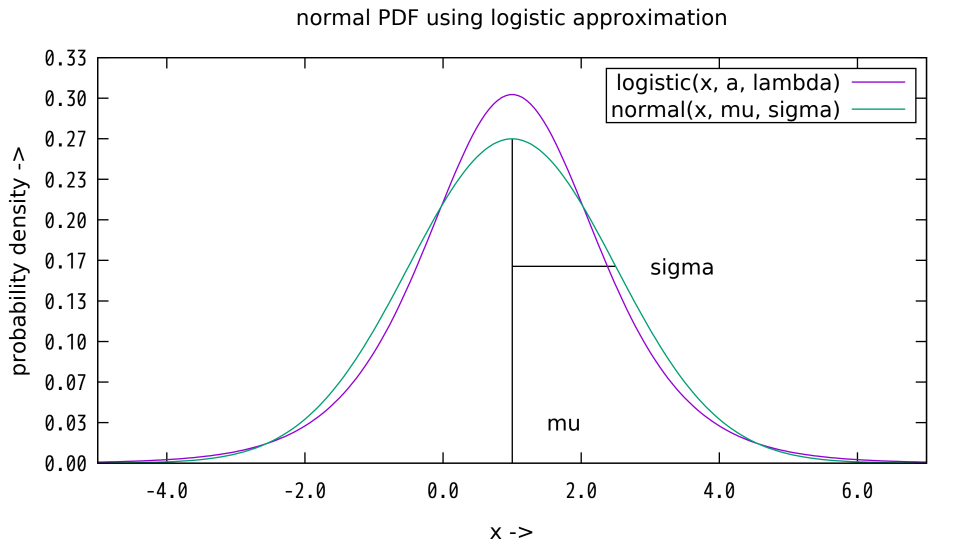
geometric PDF using normal approximation
geometric(rnd(x),p)
normal(x, mu, sigma)
probability density ->
k, x ->
sigma
mu
0.33
0.30
0.26
0.23
0.20
0.17
0.13
0.10
0.07
0.03
0.00
-2
0
2
4
6
8
10
12
14


hypergeometric PDF using binomial approximation
hypgeo(x, nn, mm, n)
binom(x, n, p)
sigma
mu
probability density ->
k ->
0.00
0.03
0.06
0.09
0.12
0.15
0.18
0.21
0.24
0.27
0.30
-2
0
2
4
6
8
10

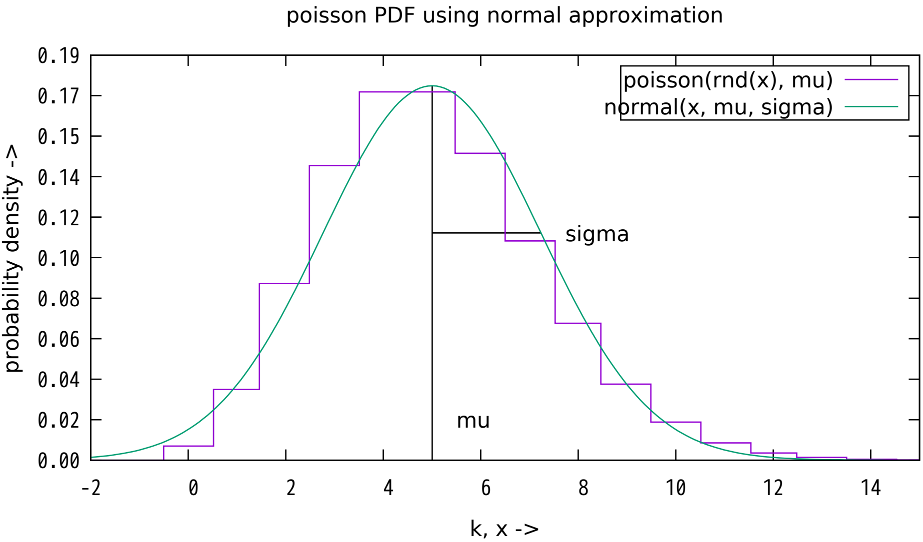

hypergeometric PDF using normal approximation
hypgeo(rnd(x), nn, mm, n)
normal(x, mu, sigma)
sigma
mu
probability density ->
k, x ->
0.30
0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
0.03
0.00
-2
0
2
4
6
8
10


negative binomial PDF using gamma approximation
negbin(rnd(x), r, p)
gmm(x, rho, lambda)
sigma
mu
probability density ->
k, x ->
0.17
0.15
0.14
0.12
0.10
0.09
0.07
0.05
0.03
0.02
0.00
0
5
10
15

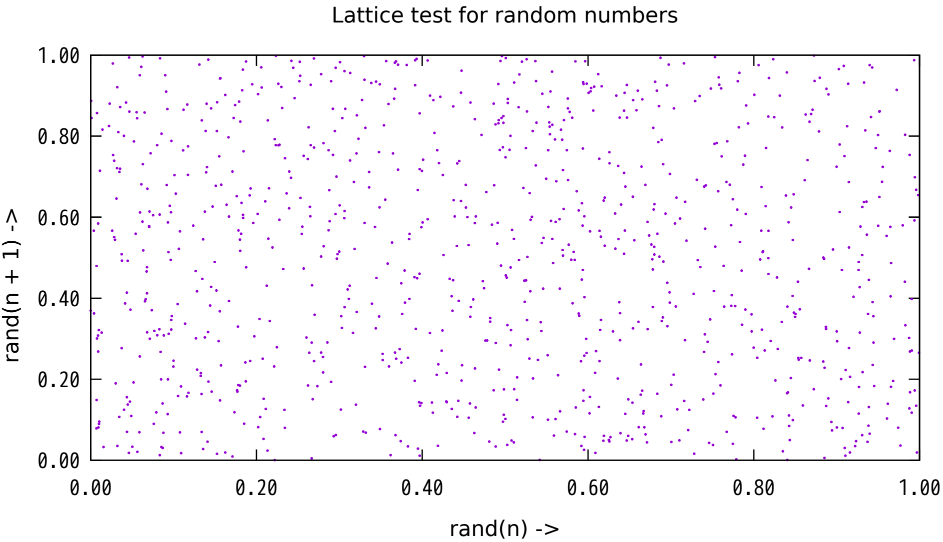

negative binomial PDF using normal approximation
negbin(rnd(x), r, p)
normal(x, mu, sigma)
sigma
mu
probability density ->
k, x ->
0.08
0.08
0.07
0.06
0.05
0.04
0.03
0.03
0.02
0.01
0.00
0
5
10
15
20
25
30
35



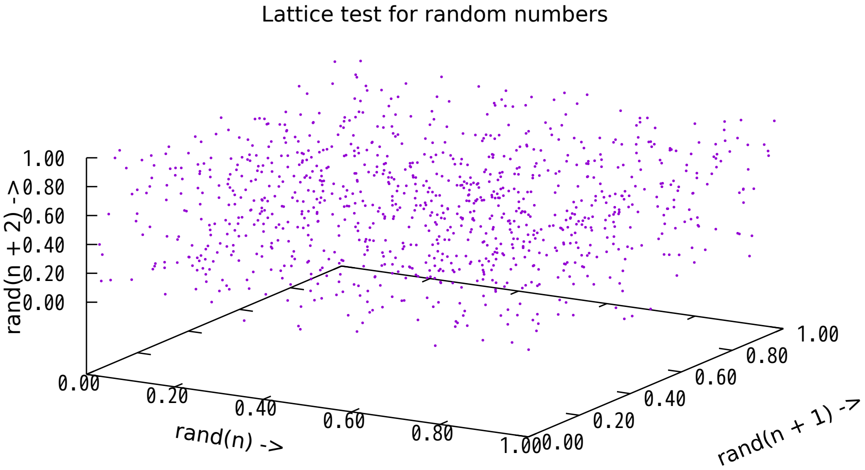
normal PDF using logistic approximation
logistic(x, a, lambda)
normal(x, mu, sigma)
sigma
mu
probability density ->
x ->
0.33
0.30
0.27
0.23
0.20
0.17
0.13
0.10
0.07
0.03
0.00
-4.0
-2.0
0.0
2.0
4.0
6.0



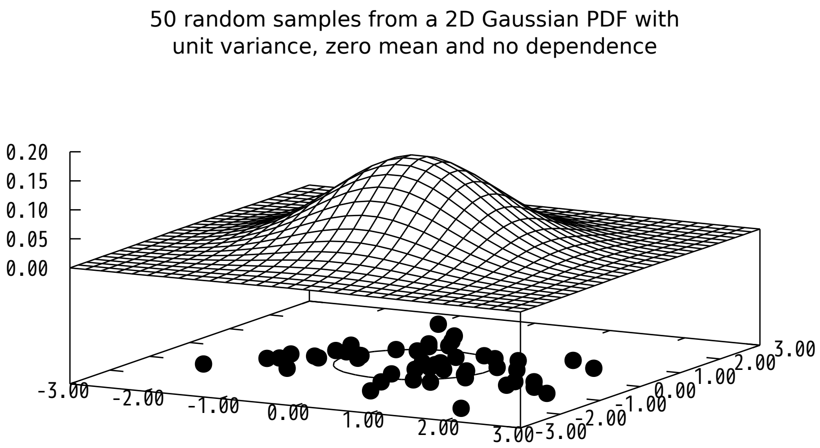
poisson PDF using normal approximation
poisson(rnd(x), mu)
normal(x, mu, sigma)
sigma
mu
probability density ->
k, x ->
0.19
0.17
0.15
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-2
0
2
4
6
8
10
12
14



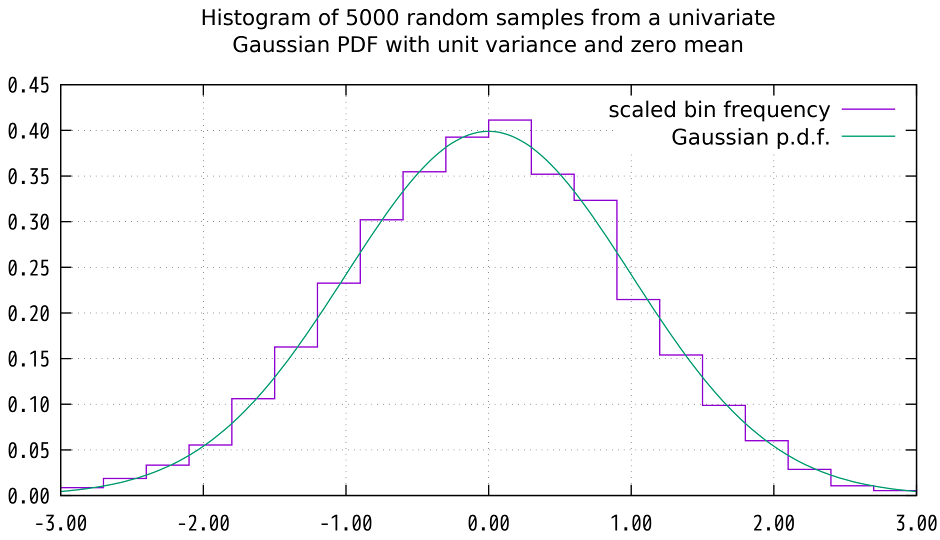
Lattice test for random numbers
1.00
0.80
0.60
0.40
0.20
0.00
rand(n + 1) ->
0.00
0.20
0.40
0.60
0.80
1.00
rand(n) ->



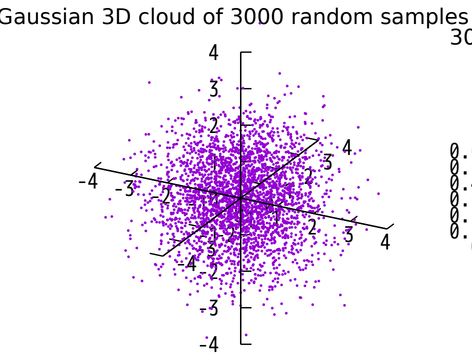
Lattice test for random numbers
rand(n + 2) ->
1.00
0.80
0.60
0.40
0.20
0.00
rand(n) ->
0.00
0.20
0.40
0.60
0.80
1.00
rand(n + 1) ->
0.00
0.20
0.40
0.60
0.80
1.00

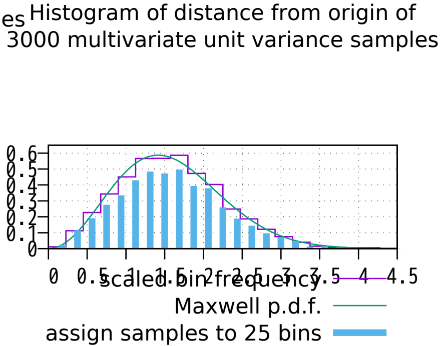


50 random samples from a 2D Gaussian PDF with
unit variance, zero mean and no dependence
0.20
0.15
0.10
0.05
0.00
-3.00
-2.00
-1.00
0.00
1.00
2.00
3.00
-3.00
-2.00
-1.00
0.00
1.00
2.00
3.00

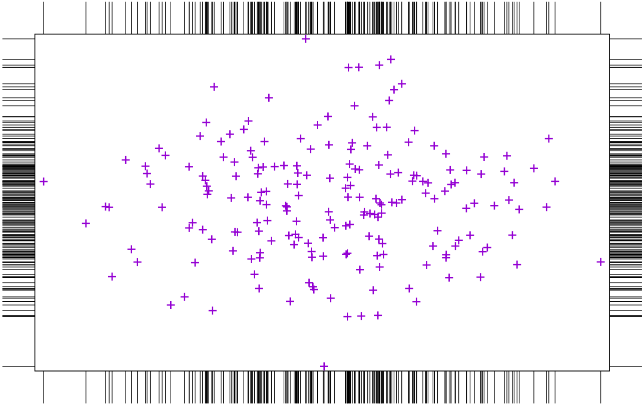


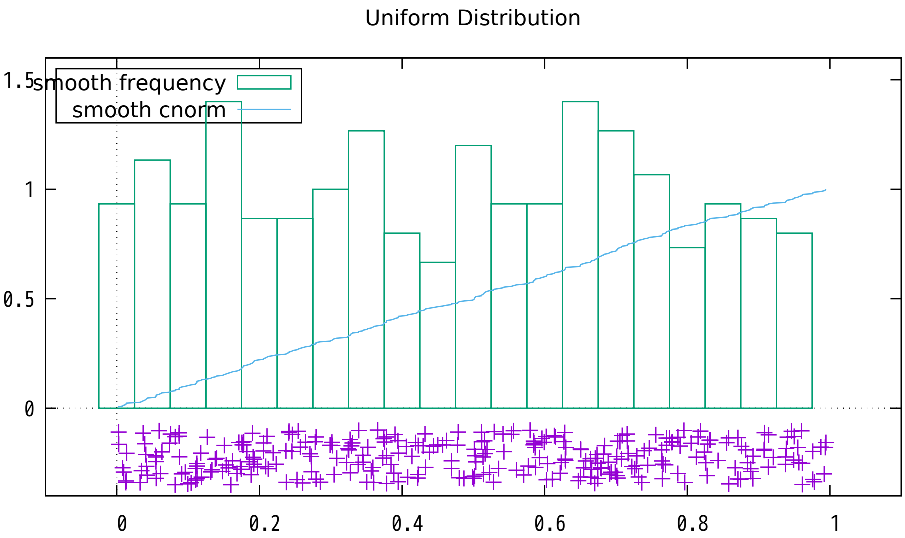
Histogram of 5000 random samples from a univariate
Gaussian PDF with unit variance and zero mean
scaled bin frequency
Gaussian p.d.f.
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-3.00
-2.00
-1.00
0.00
1.00
2.00
3.00


Gaussian 3D cloud of 3000 random samples

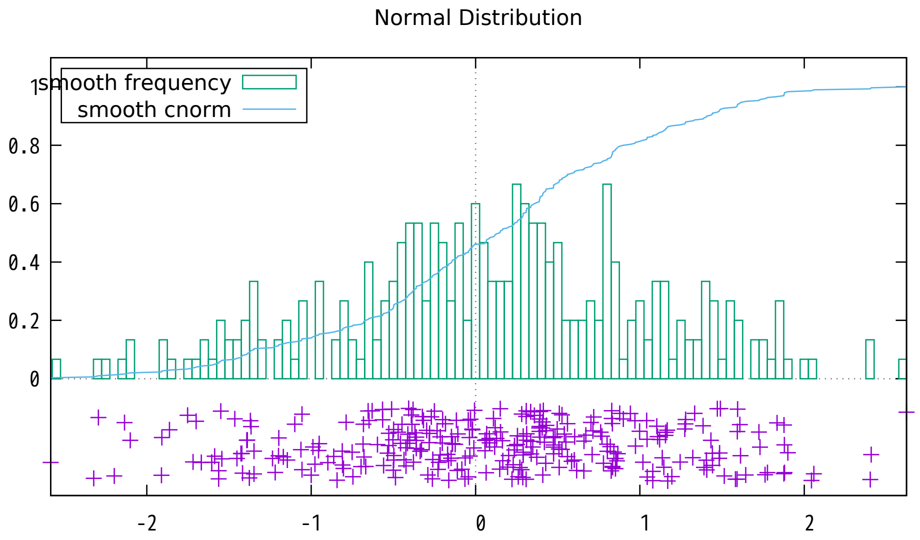

Histogram of distance from origin of
3000 multivariate unit variance samples
scaled bin frequency
Maxwell p.d.f.
assign samples to 25 bins

Rug Plot

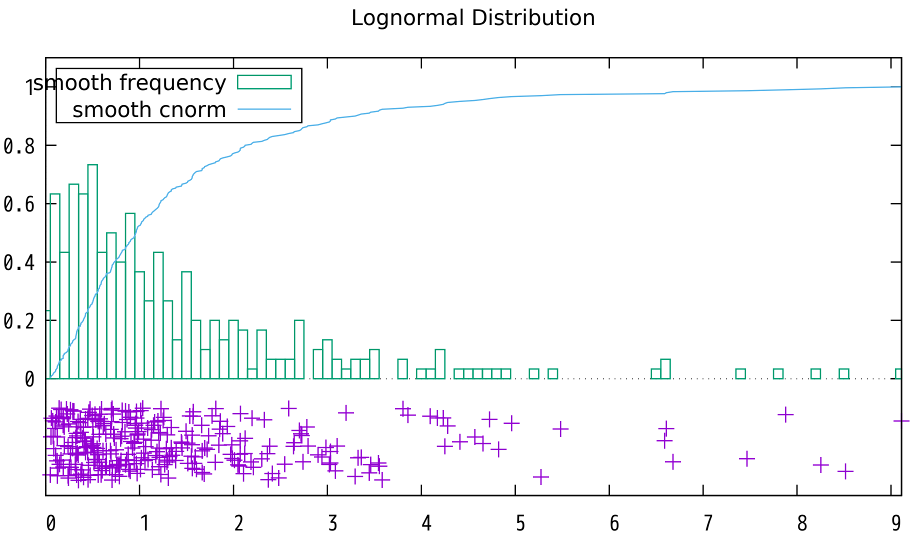




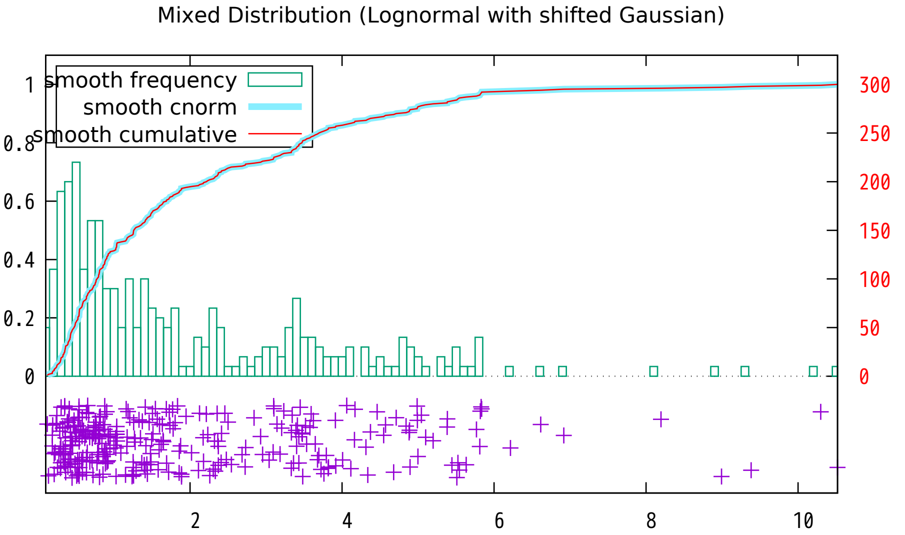
Uniform Distribution
smooth frequency
smooth cnorm
1.5
1
0.5
0
0
0.2
0.4
0.6
0.8
1



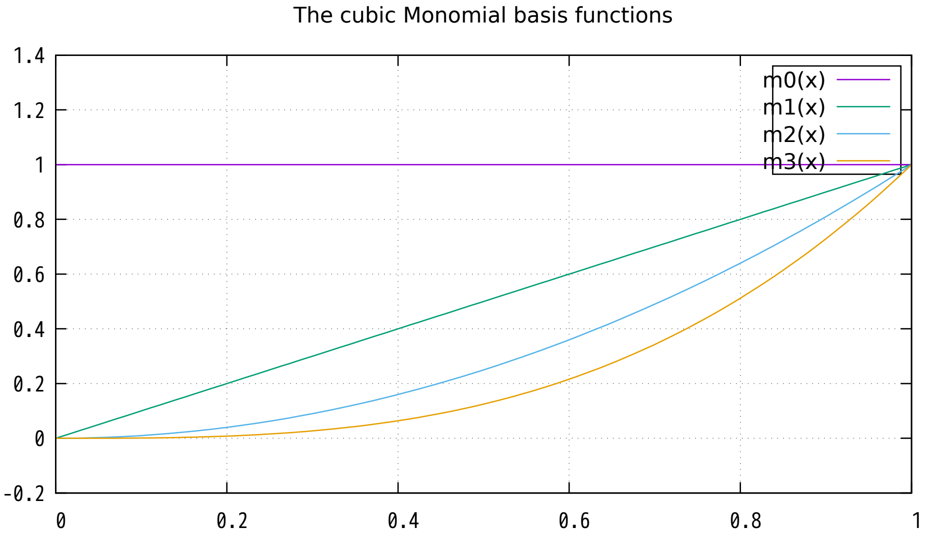
Normal Distribution
smooth frequency
smooth cnorm
1
0.8
0.6
0.4
0.2
0
-2
-1
0
1
2

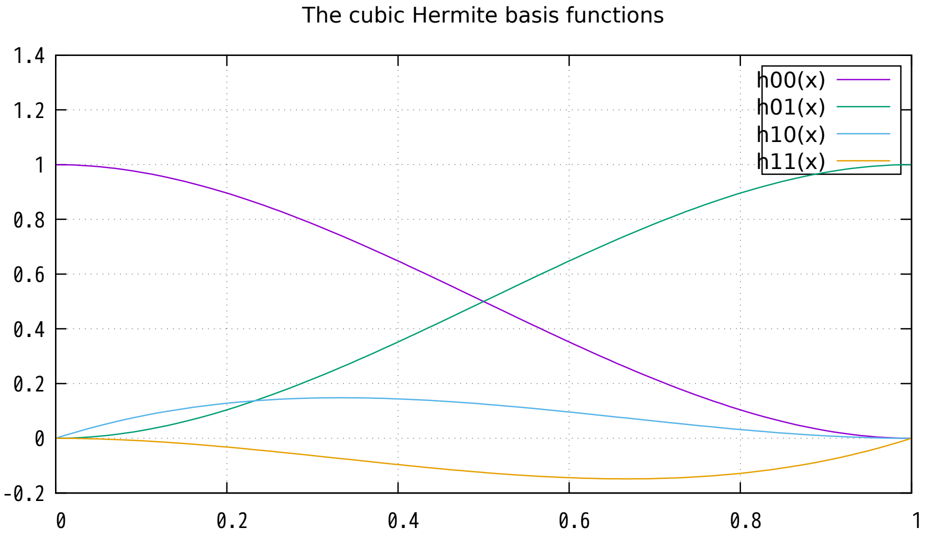


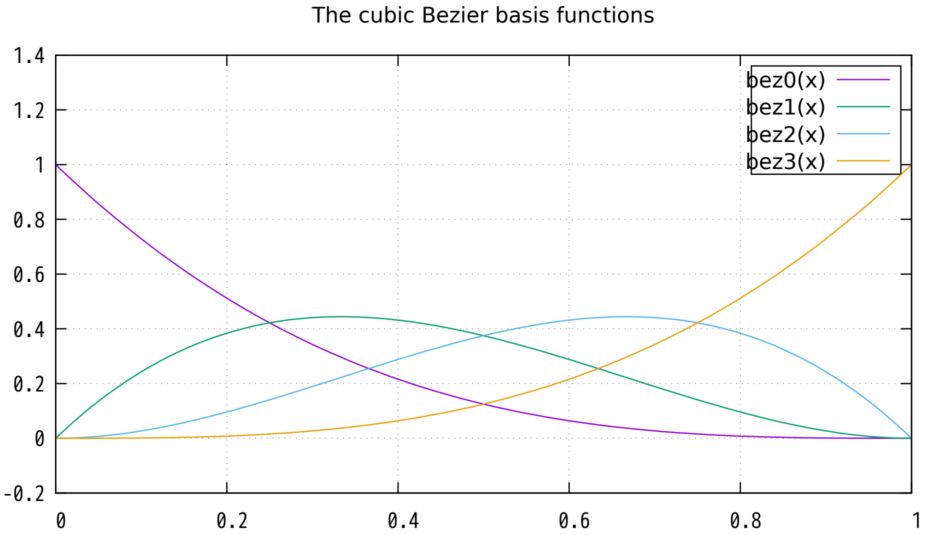
Lognormal Distribution
smooth frequency
smooth cnorm
1
0.8
0.6
0.4
0.2
0
0
1
2
3
4
5
6
7
8
9



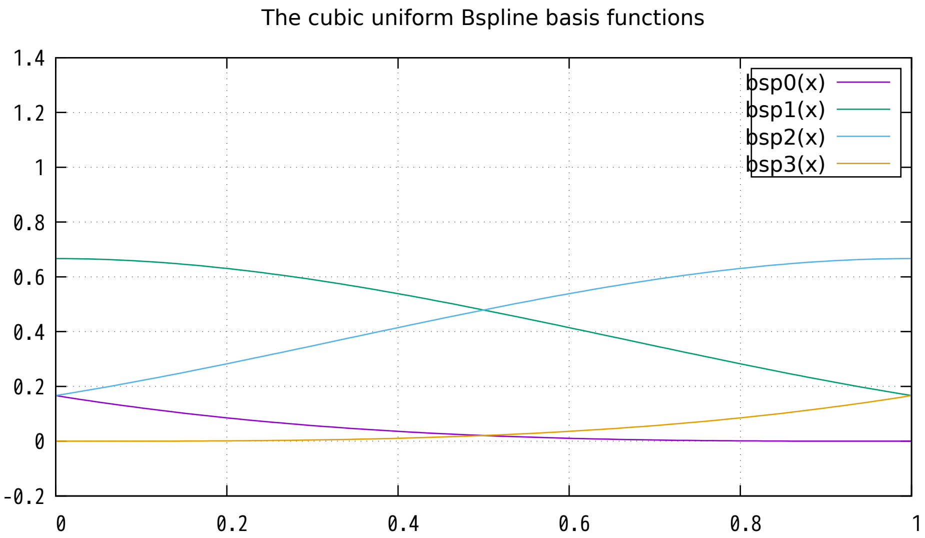
Mixed Distribution (Lognormal with shifted Gaussian)
smooth frequency
smooth cnorm
smooth cumulative
1
0.8
0.6
0.4
0.2
0
300
250
200
150
100
50
0
2
4
6
8
10

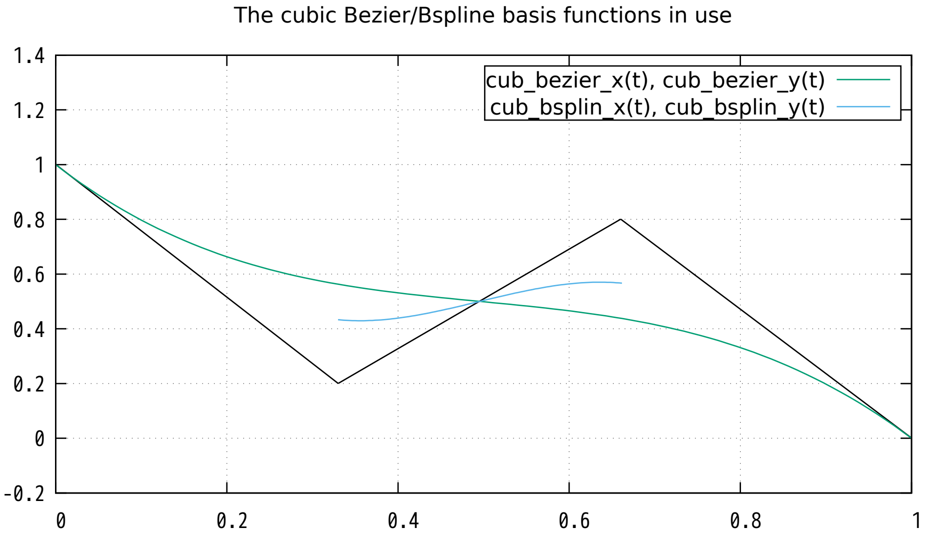

The cubic Monomial basis functions
m0(x)
m1(x)
m2(x)
m3(x)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
0.2
0.4
0.6
0.8
1

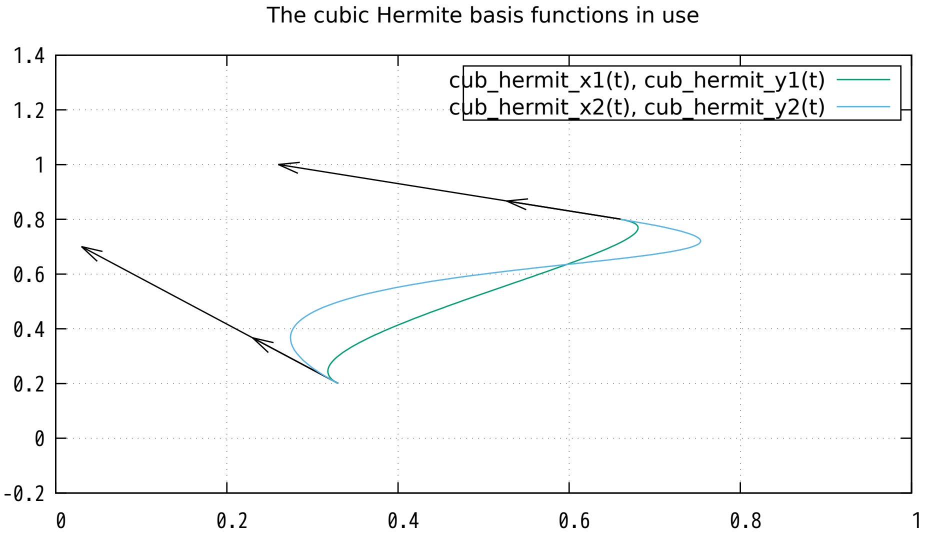

The cubic Hermite basis functions
h00(x)
h01(x)
h10(x)
h11(x)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
0.2
0.4
0.6
0.8
1

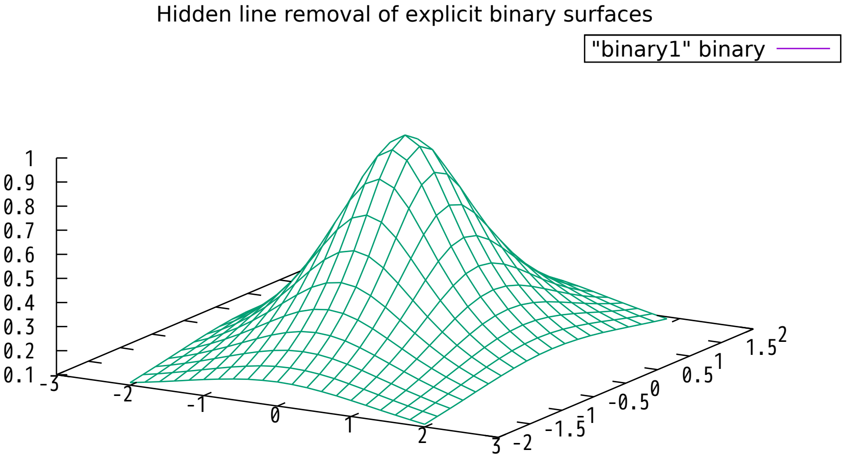


The cubic Bezier basis functions
bez0(x)
bez1(x)
bez2(x)
bez3(x)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
0.2
0.4
0.6
0.8
1

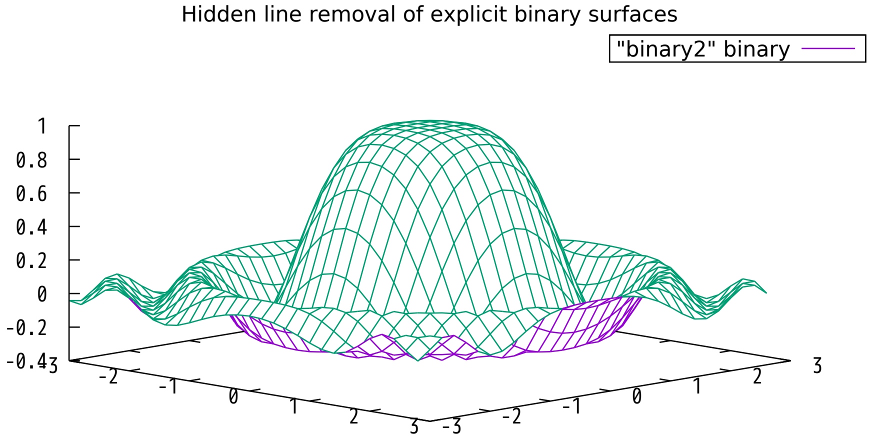

The cubic uniform Bspline basis functions
bsp0(x)
bsp1(x)
bsp2(x)
bsp3(x)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
0.2
0.4
0.6
0.8
1


The cubic Bezier/Bspline basis functions in use
cub_bezier_x(t), cub_bezier_y(t)
cub_bsplin_x(t), cub_bsplin_y(t)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
0.2
0.4
0.6
0.8
1

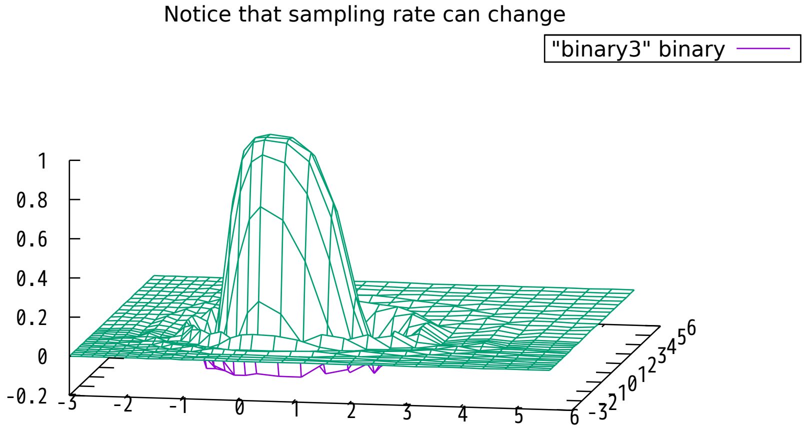

The cubic Hermite basis functions in use
cub_hermit_x1(t), cub_hermit_y1(t)
cub_hermit_x2(t), cub_hermit_y2(t)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
0.2
0.4
0.6
0.8
1



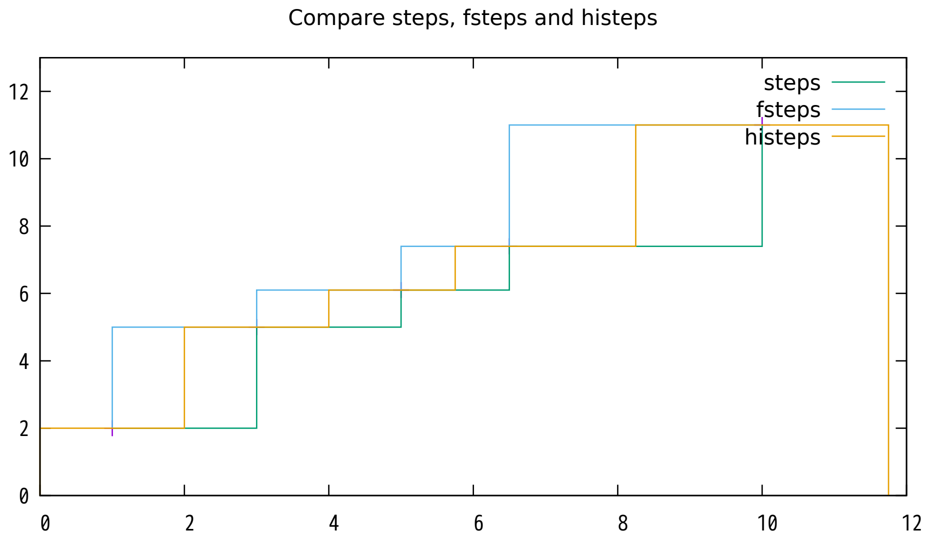
Hidden line removal of explicit binary surfaces
"binary1" binary
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
0
1
2
3
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2



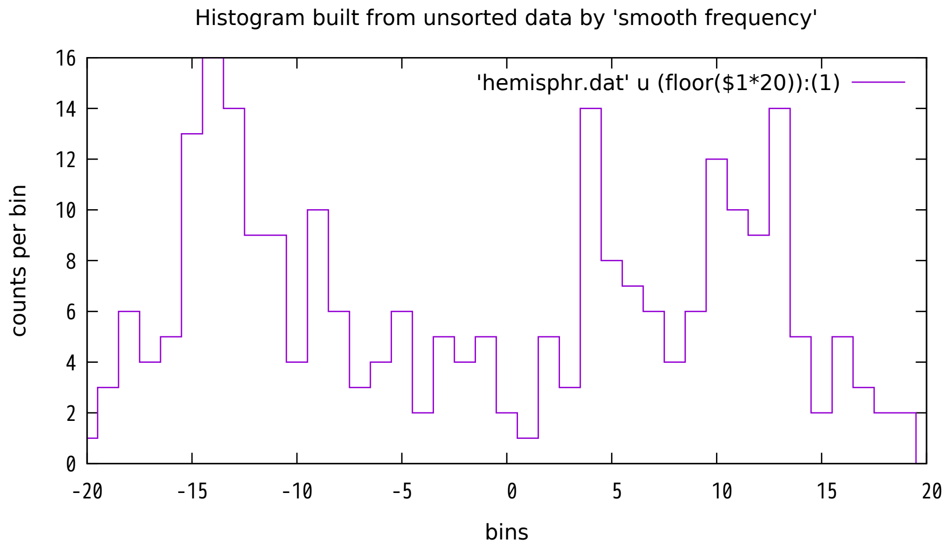
Hidden line removal of explicit binary surfaces
"binary2" binary
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3



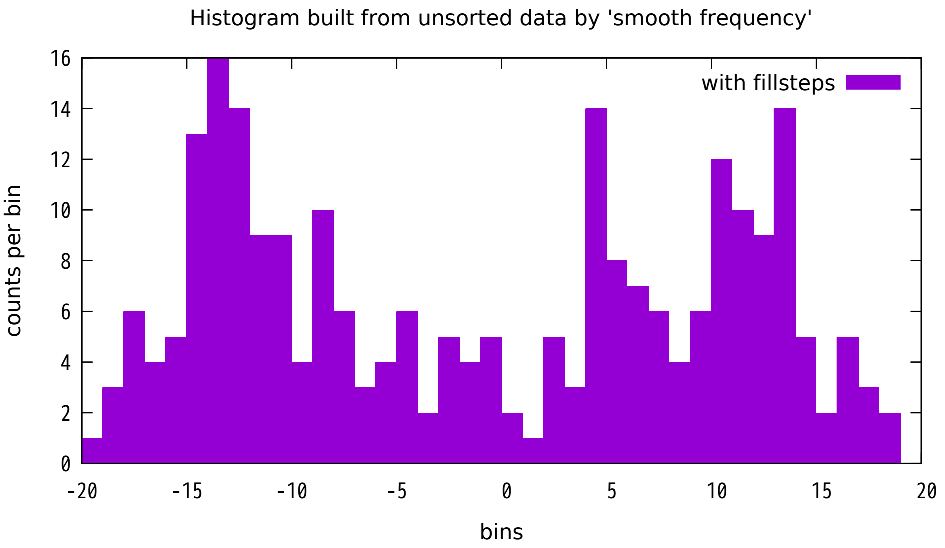
Notice that sampling rate can change
"binary3" binary
1
0.8
0.6
0.4
0.2
0
-0.2
-3
-2
-1
0
1
2
3
4
5
6
-3
-2
-1
0
1
2
3
4
5
6



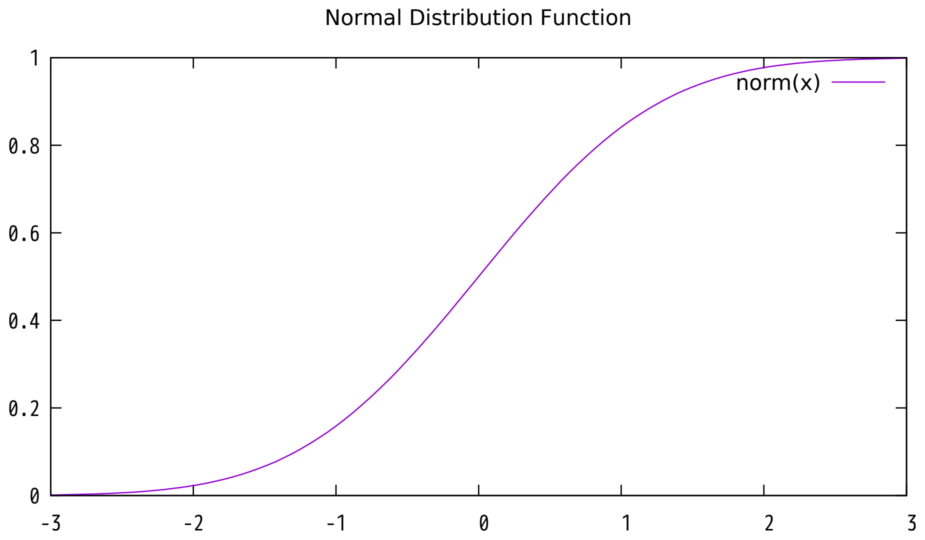
Compare steps, fsteps and histeps
steps
fsteps
histeps
0
2
4
6
8
10
12



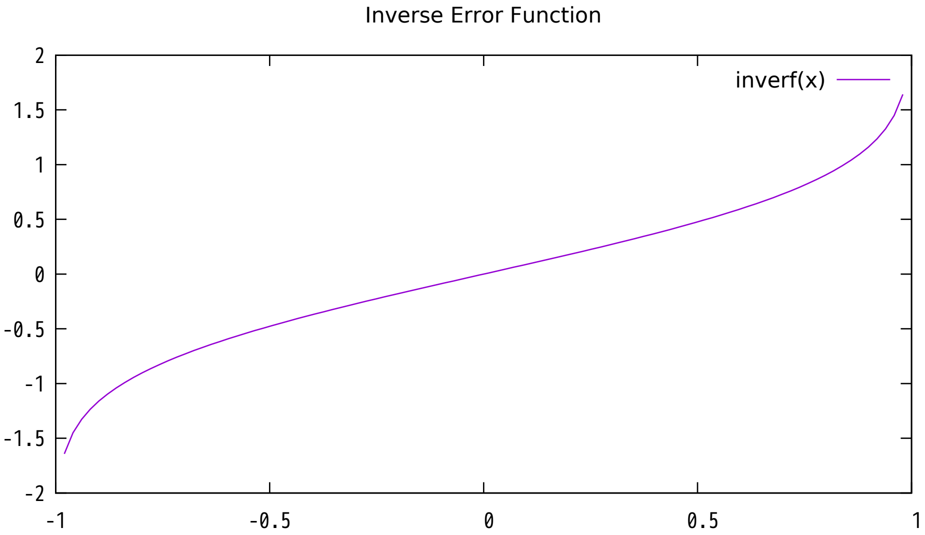
Histogram built from unsorted data by 'smooth frequency'
'hemisphr.dat' u (floor($1*20)):(1)
counts per bin
bins
0
2
4
6
8
10
12
14
16
-20
-15
-10
-5
0
5
10
15
20



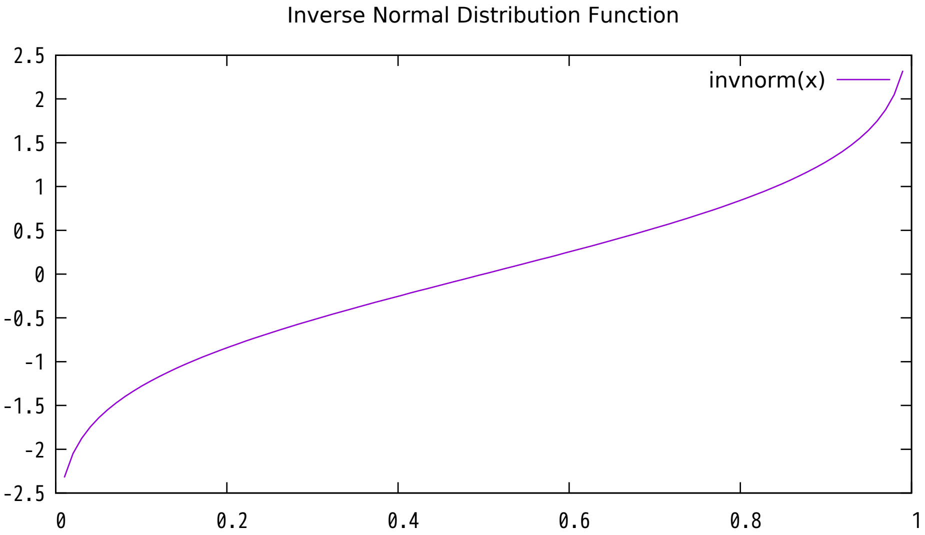
Histogram built from unsorted data by 'smooth frequency'
with fillsteps
counts per bin
bins
0
2
4
6
8
10
12
14
16
-20
-15
-10
-5
0
5
10
15
20



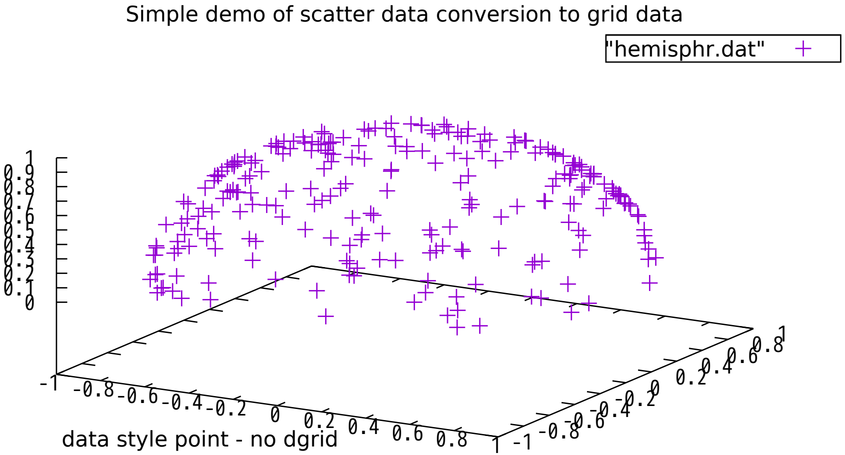
Normal Distribution Function
norm(x)
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3



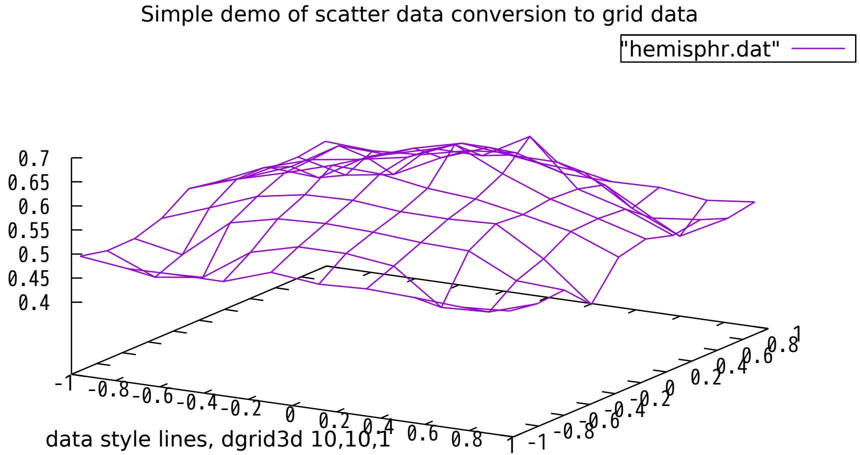
Inverse Error Function
inverf(x)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-1
-0.5
0
0.5
1

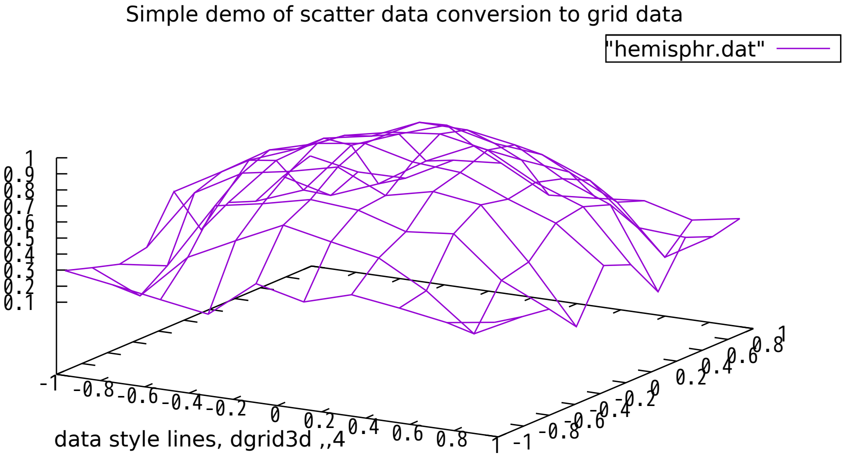


Inverse Normal Distribution Function
invnorm(x)
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
0.2
0.4
0.6
0.8
1

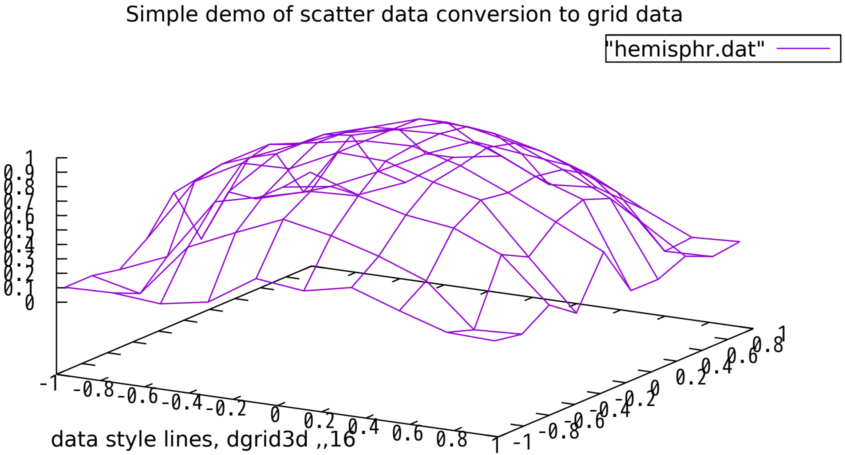


Simple demo of scatter data conversion to grid data
"hemisphr.dat"
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
data style point - no dgrid

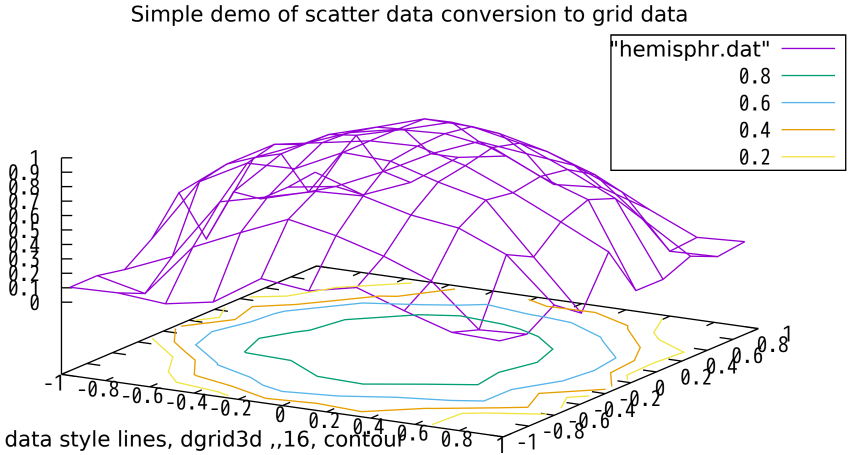

Simple demo of scatter data conversion to grid data
"hemisphr.dat"
0.7
0.65
0.6
0.55
0.5
0.45
0.4
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
data style lines, dgrid3d 10,10,1

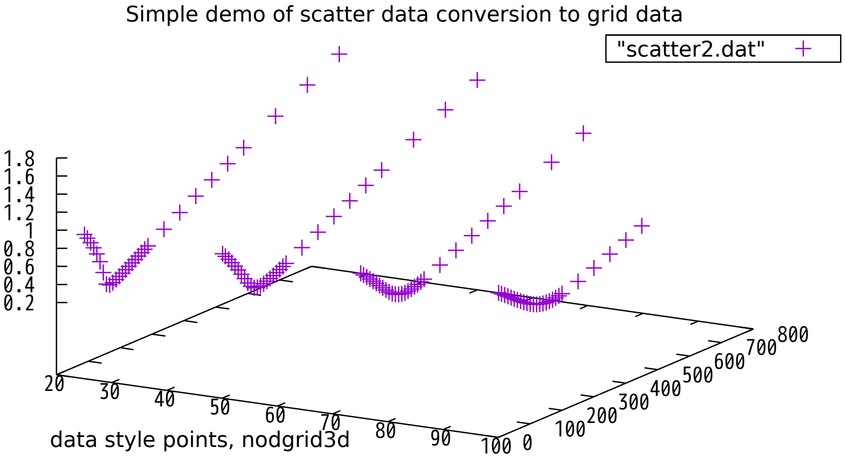


Simple demo of scatter data conversion to grid data
"hemisphr.dat"
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
data style lines, dgrid3d ,,4

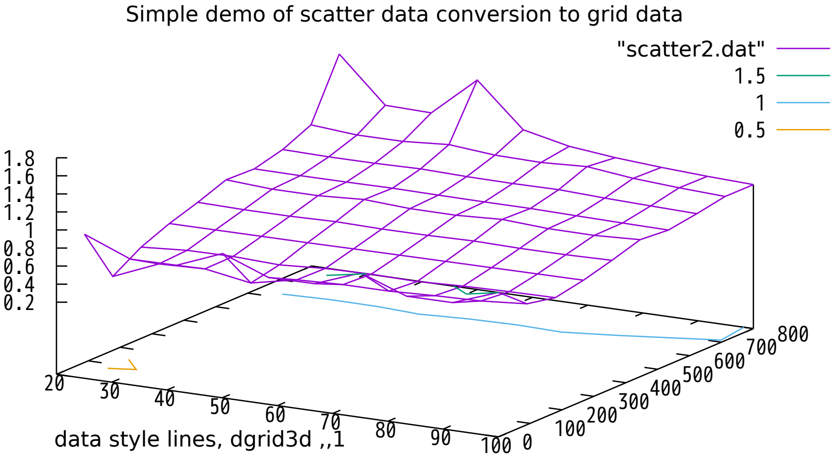


Simple demo of scatter data conversion to grid data
"hemisphr.dat"
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1
-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1
data style lines, dgrid3d ,,16

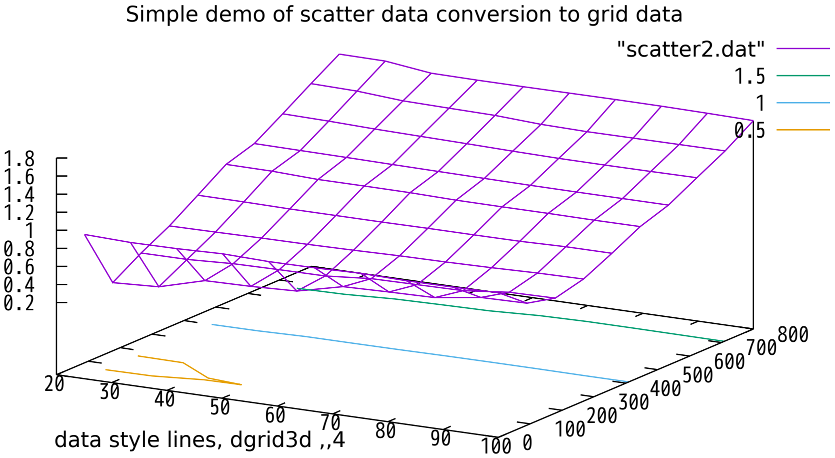

Simple demo of scatter data conversion to grid data
"hemisphr.dat"
0.8
0.6
0.4
0.2
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
data style lines, dgrid3d ,,16, contour



Simple demo of scatter data conversion to grid data
"scatter2.dat"
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
data style points, nodgrid3d

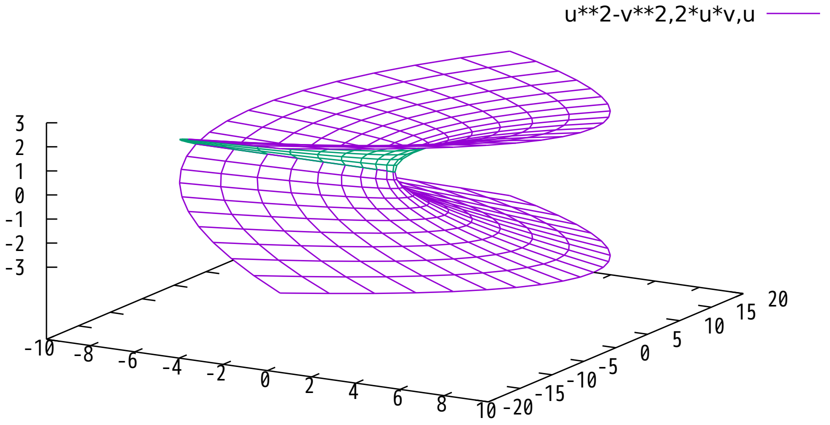


Simple demo of scatter data conversion to grid data
"scatter2.dat"
1.5
1
0.5
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
data style lines, dgrid3d ,,1

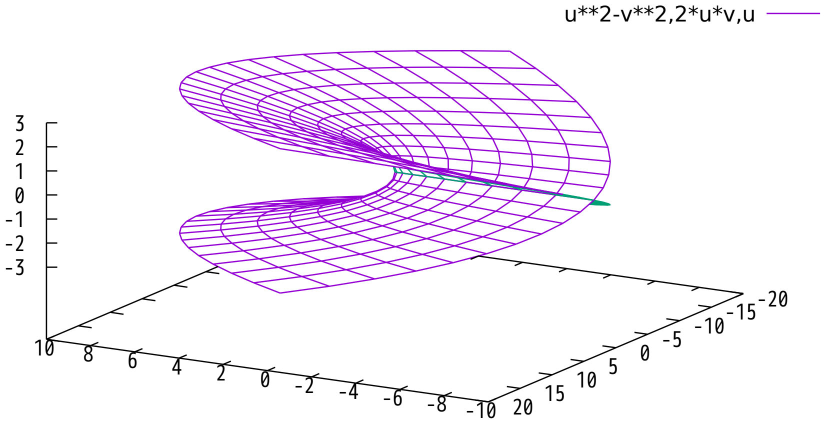


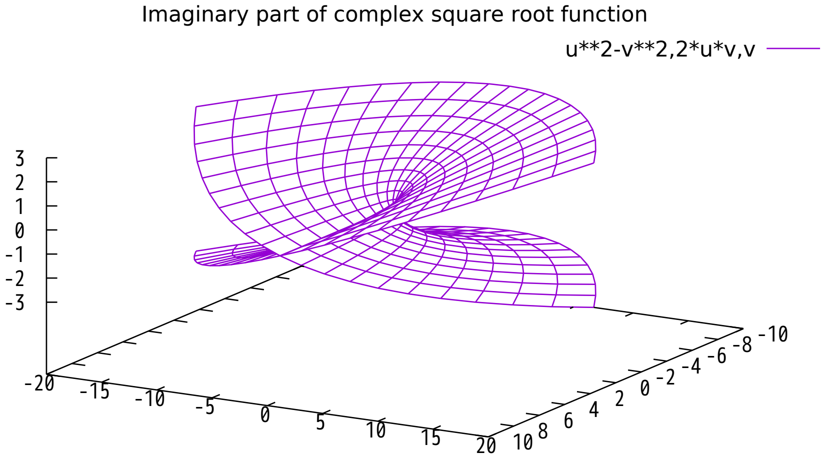
Simple demo of scatter data conversion to grid data
"scatter2.dat"
1.5
1
0.5
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
data style lines, dgrid3d ,,4

Real part of complex square root function

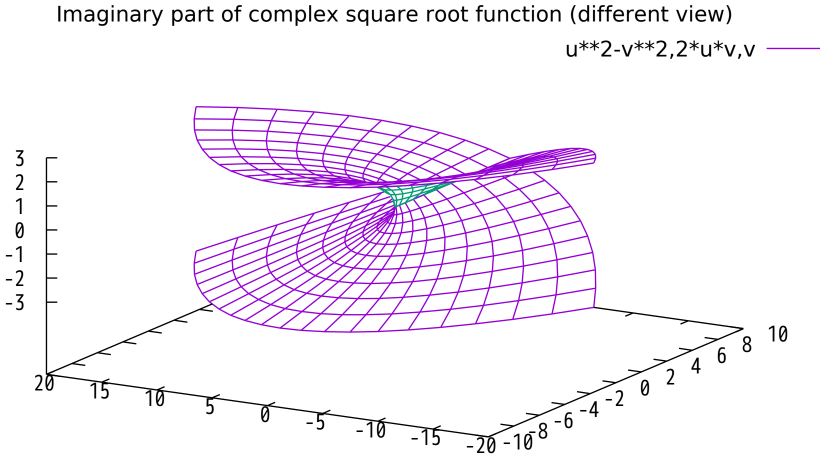


Real part of complex square root function (different view)



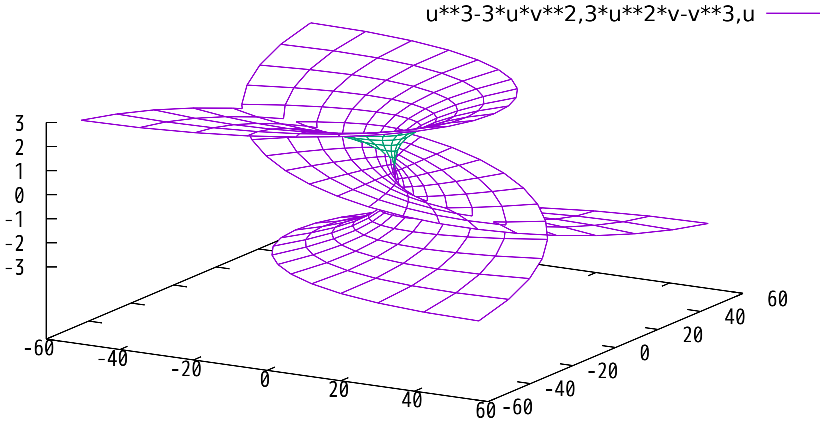


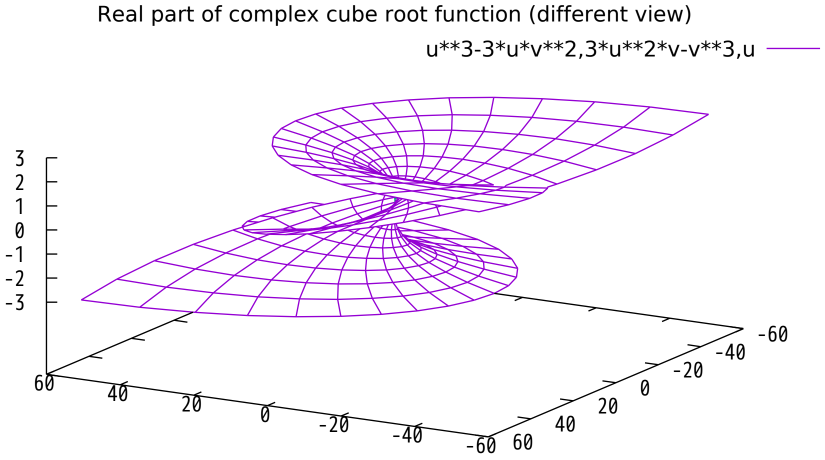
Imaginary part of complex square root function
u**2-v**2,2*u*v,v
3
2
1
0
-1
-2
-3
-20
-15
-10
-5
0
5
10
15
20
10
8
6
4
2
0
-2
-4
-6
-8
-10



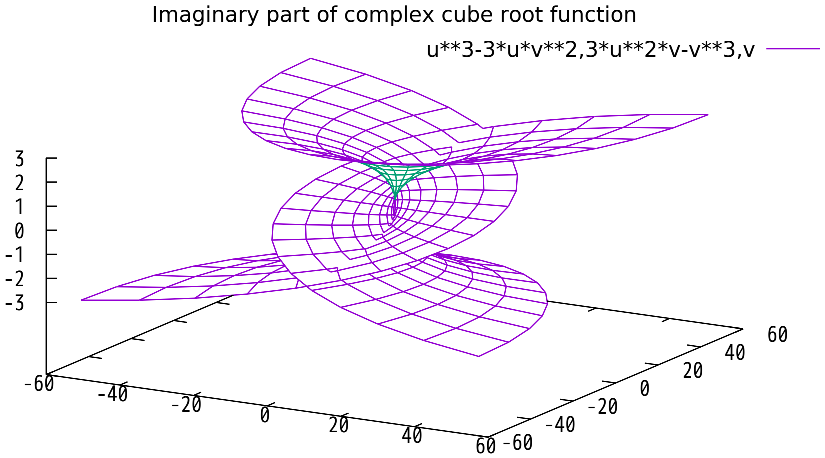
Imaginary part of complex square root function (different view)
u**2-v**2,2*u*v,v
3
2
1
0
-1
-2
-3
20
15
10
5
0
-5
-10
-15
-20
-10
-8
-6
-4
-2
0
2
4
6
8
10

Real part of complex cube root function

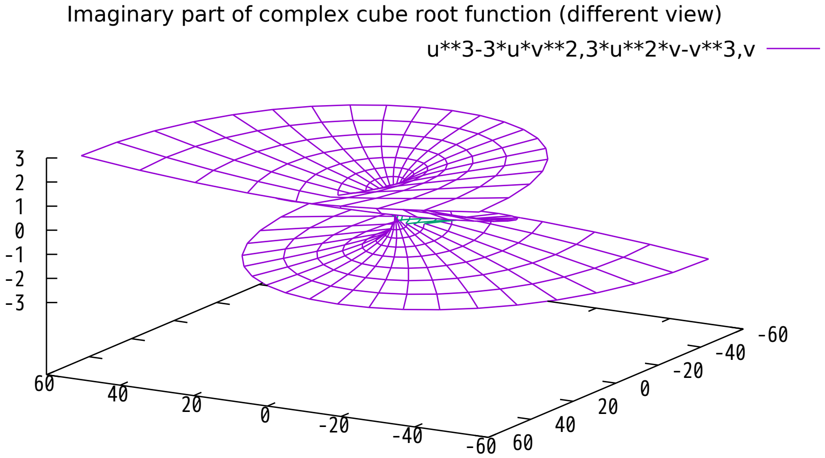




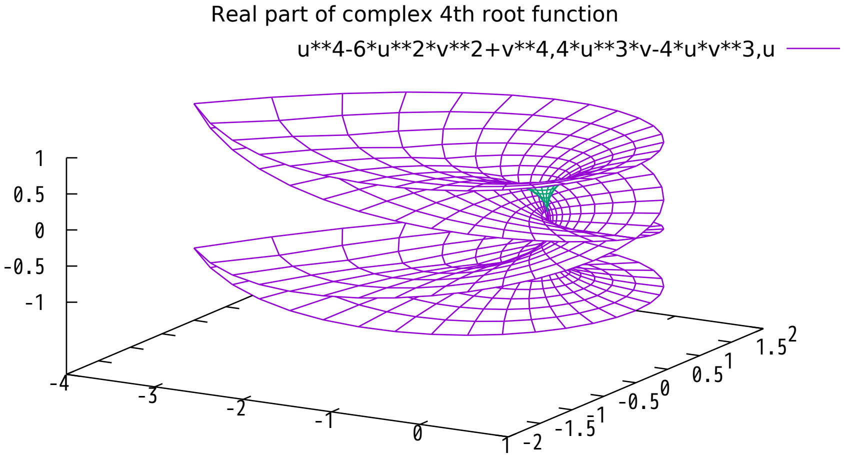
Real part of complex cube root function (different view)
u**3-3*u*v**2,3*u**2*v-v**3,u
3
2
1
0
-1
-2
-3
60
40
20
0
-20
-40
-60
-60
-40
-20
0
20
40
60



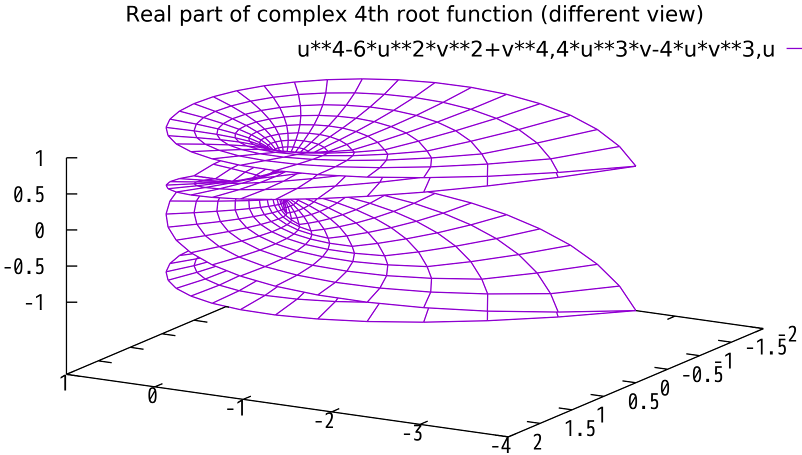
Imaginary part of complex cube root function
u**3-3*u*v**2,3*u**2*v-v**3,v
3
2
1
0
-1
-2
-3
-60
-40
-20
0
20
40
60
-60
-40
-20
0
20
40
60



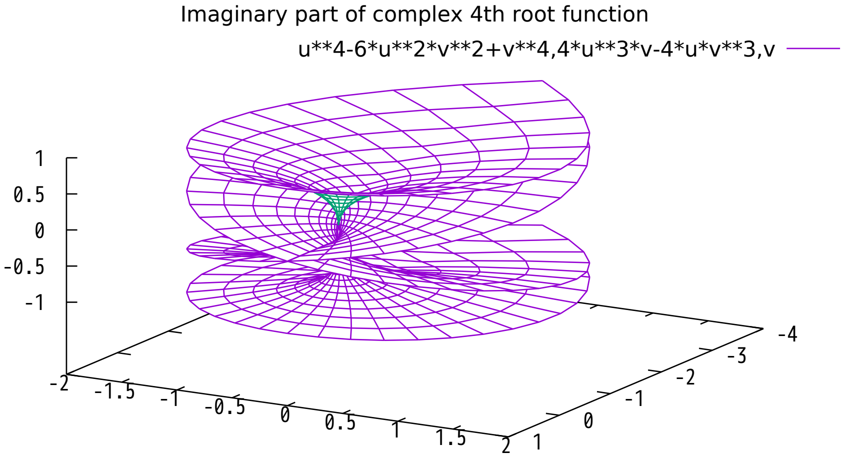
Imaginary part of complex cube root function (different view)
u**3-3*u*v**2,3*u**2*v-v**3,v
3
2
1
0
-1
-2
-3
60
40
20
0
-20
-40
-60
-60
-40
-20
0
20
40
60



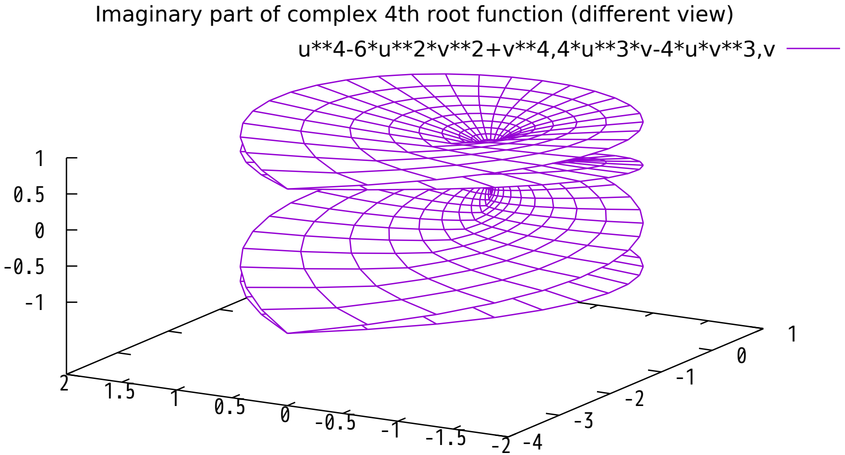
Real part of complex 4th root function
u**4-6*u**2*v**2+v**4,4*u**3*v-4*u*v**3,u
1
0.5
0
-0.5
-1
-4
-3
-2
-1
0
1
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2



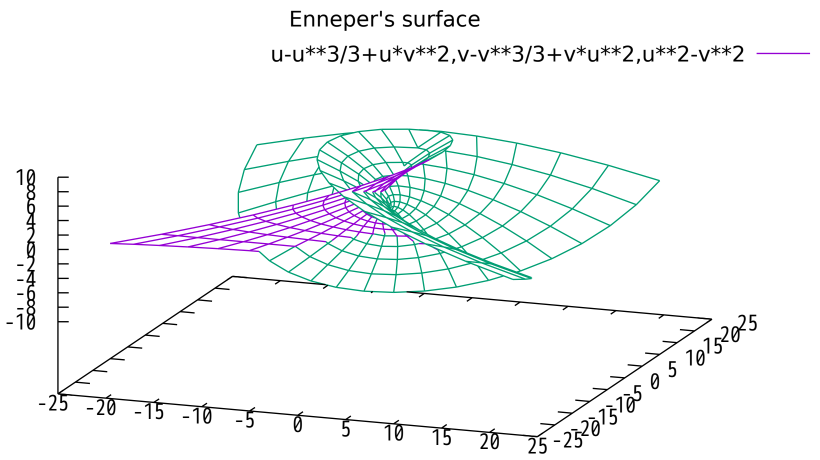
Real part of complex 4th root function (different view)
u**4-6*u**2*v**2+v**4,4*u**3*v-4*u*v**3,u
1
0.5
0
-0.5
-1
1
0
-1
-2
-3
-4
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2

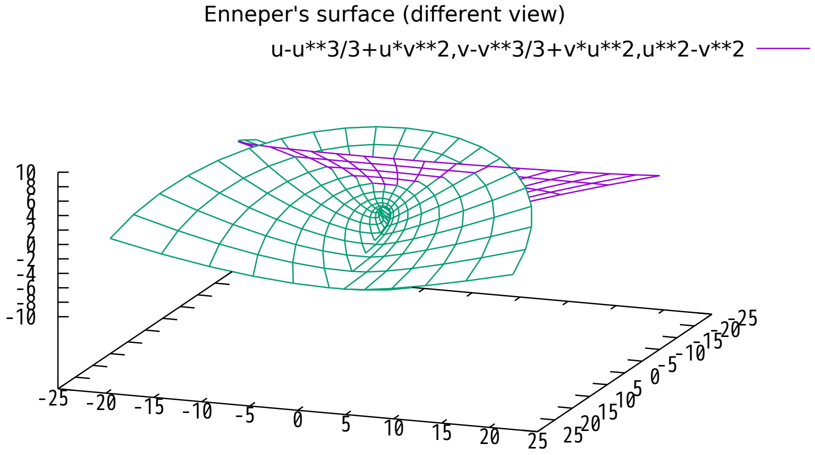


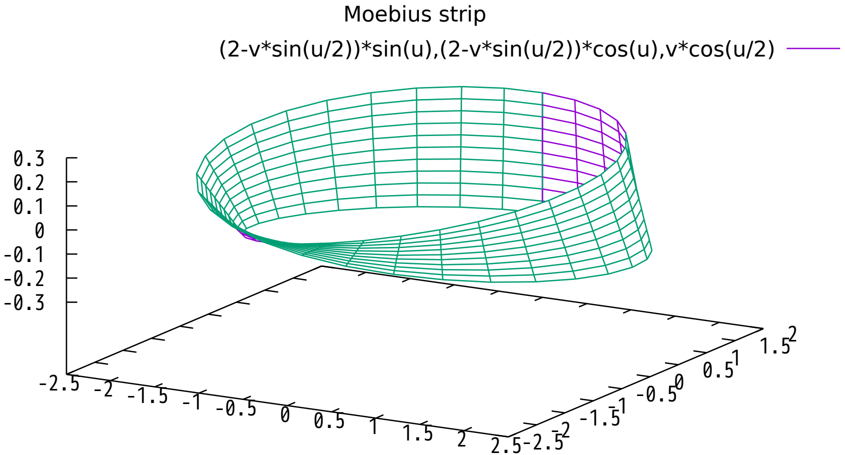
Imaginary part of complex 4th root function
u**4-6*u**2*v**2+v**4,4*u**3*v-4*u*v**3,v
1
0.5
0
-0.5
-1
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
1
0
-1
-2
-3
-4



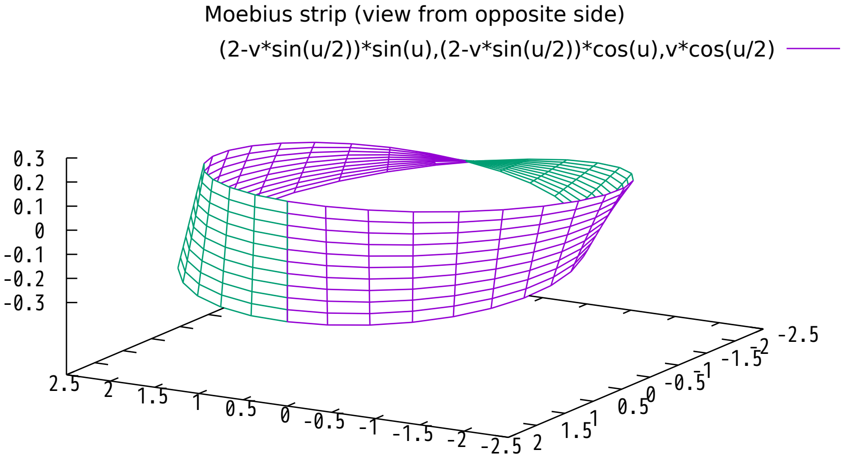
Imaginary part of complex 4th root function (different view)
u**4-6*u**2*v**2+v**4,4*u**3*v-4*u*v**3,v
1
0.5
0
-0.5
-1
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-4
-3
-2
-1
0
1

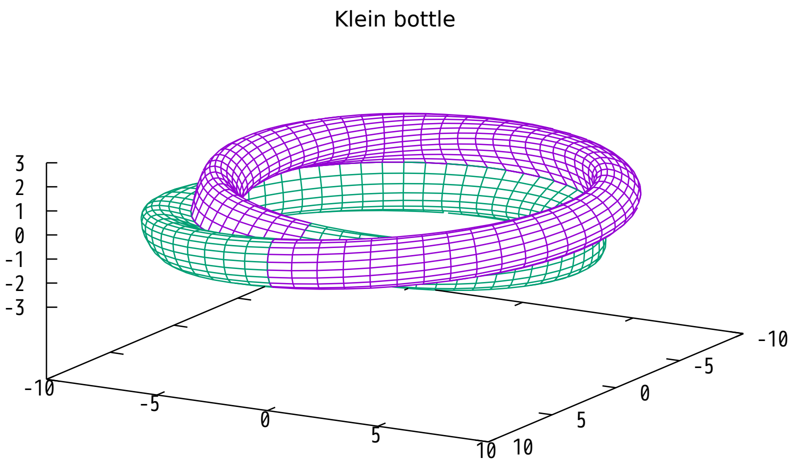

Enneper's surface
u-u**3/3+u*v**2,v-v**3/3+v*u**2,u**2-v**2
10
8
6
4
2
0
-2
-4
-6
-8
-10
-25 -20 -15 -10 -5 0 5 10 15 20 25
-25 -20 -15 -10 -5 0 5 10 15 20 25


Enneper's surface (different view)
u-u**3/3+u*v**2,v-v**3/3+v*u**2,u**2-v**2
10
8
6
4
2
0
-2
-4
-6
-8
-10
-25
-20
-15
-10
-5
0
5
10
15
20
25
25
20
15
10
5
0
-5
-10
-15
-20
-25

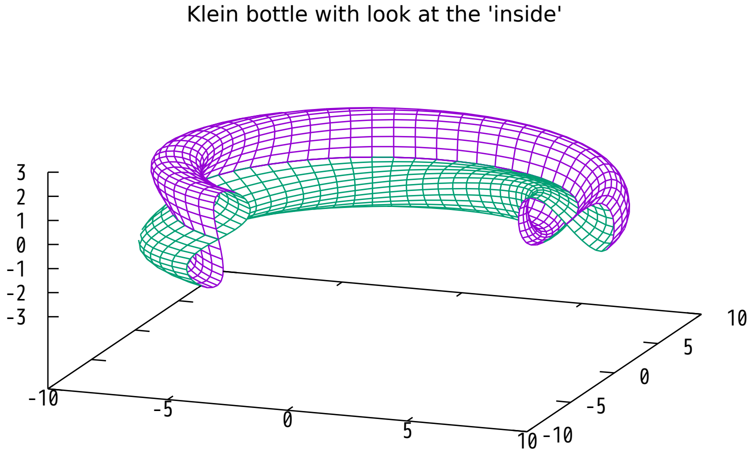


Moebius strip
(2-v*sin(u/2))*sin(u),(2-v*sin(u/2))*cos(u),v*cos(u/2)
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5
-2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2


Moebius strip (view from opposite side)
(2-v*sin(u/2))*sin(u),(2-v*sin(u/2))*cos(u),v*cos(u/2)
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5

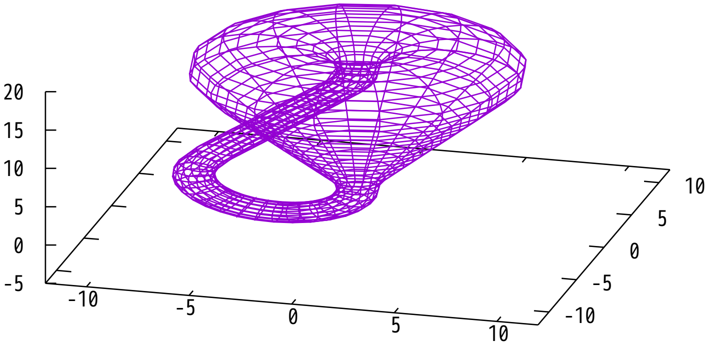


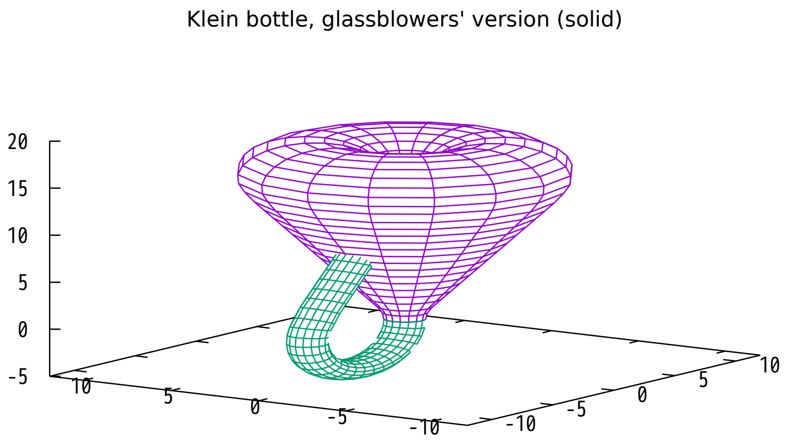
Klein bottle
3
2
1
0
-1
-2
-3
-10
-5
0
5
10
10
5
0
-5
-10



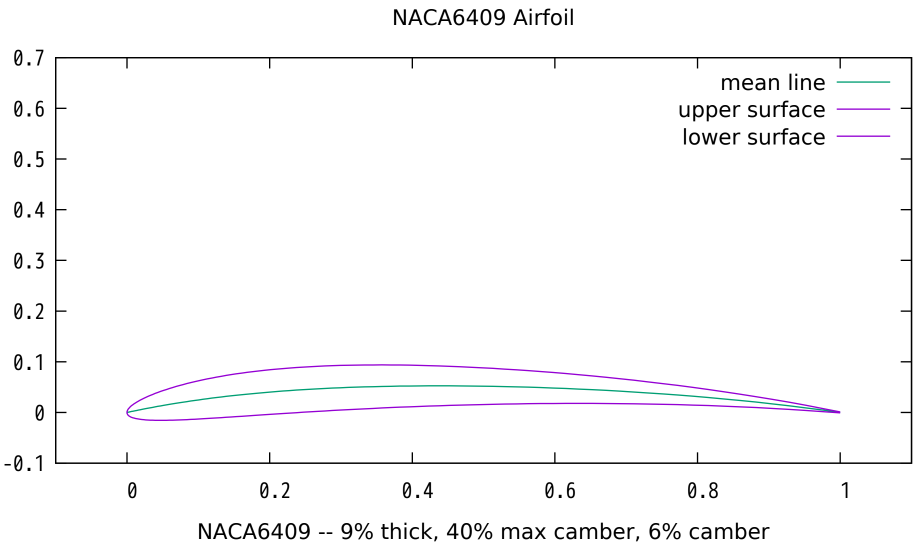
Klein bottle with look at the 'inside'
3
2
1
0
-1
-2
-3
-10
-5
0
5
10
-10
-5
0
5
10

Klein bottle, glassblowers' version (look-through)

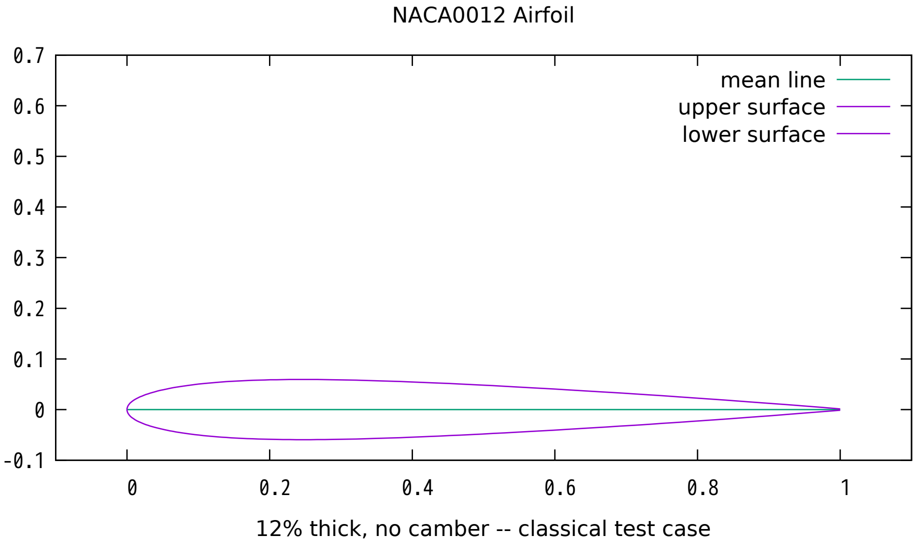




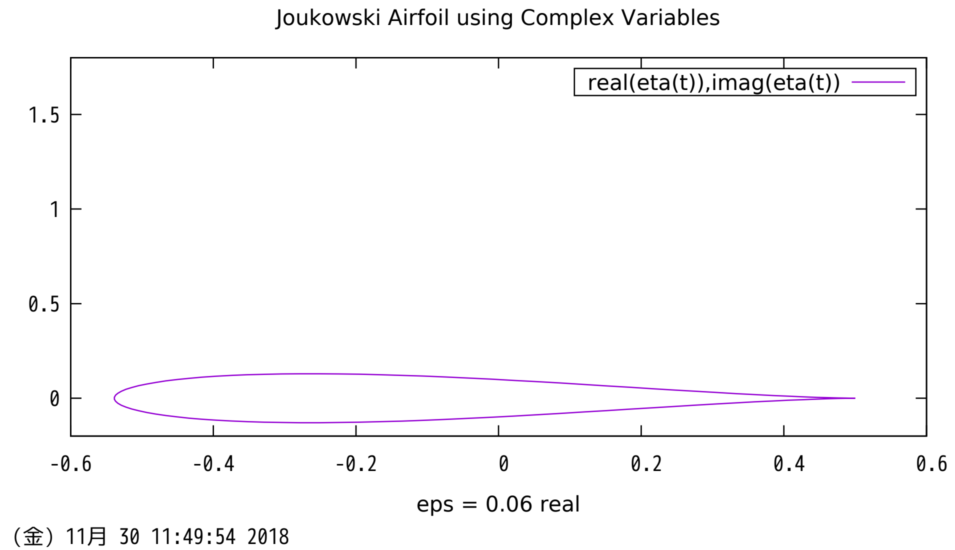
Klein bottle, glassblowers' version (solid)
20
15
10
5
0
-5
10
5
0
-5
-10
-10
-5
0
5
10

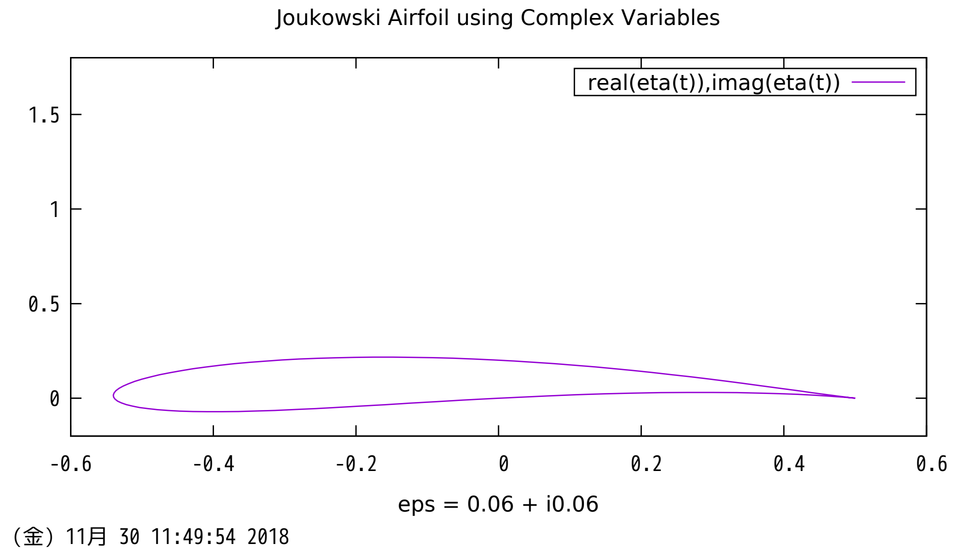


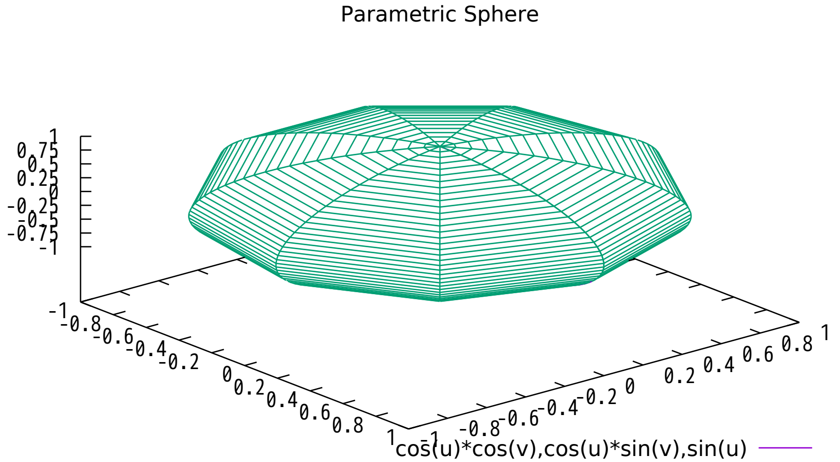
NACA6409 Airfoil
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
0.2
0.4
0.6
0.8
1
mean line
upper surface
lower surface
NACA6409 -- 9% thick, 40% max camber, 6% camber



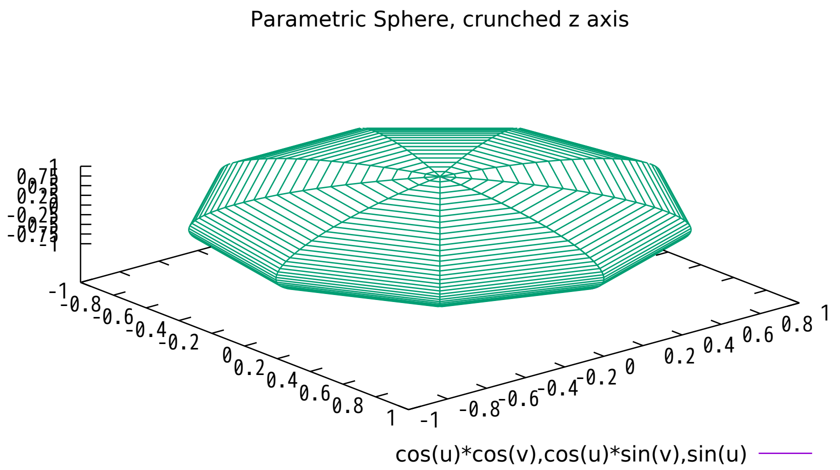
NACA0012 Airfoil
mean line
upper surface
lower surface
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
0.2
0.4
0.6
0.8
1
12% thick, no camber -- classical test case


Joukowski Airfoil using Complex Variables
real(eta(t)),imag(eta(t))
1.5
1
0.5
0
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
eps = 0.06 real
(金) 11月 30 11:49:54 2018

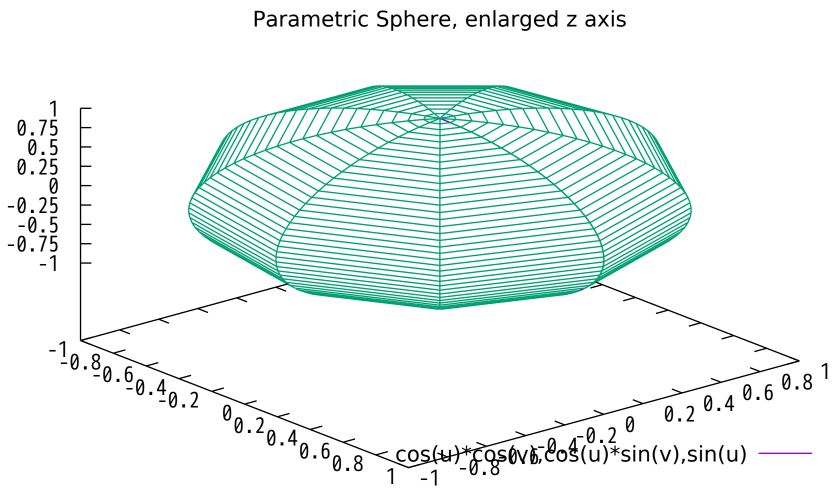

Joukowski Airfoil using Complex Variables
real(eta(t)),imag(eta(t))
1.5
1
0.5
0
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
eps = 0.06 + i0.06
(金) 11月 30 11:49:54 2018

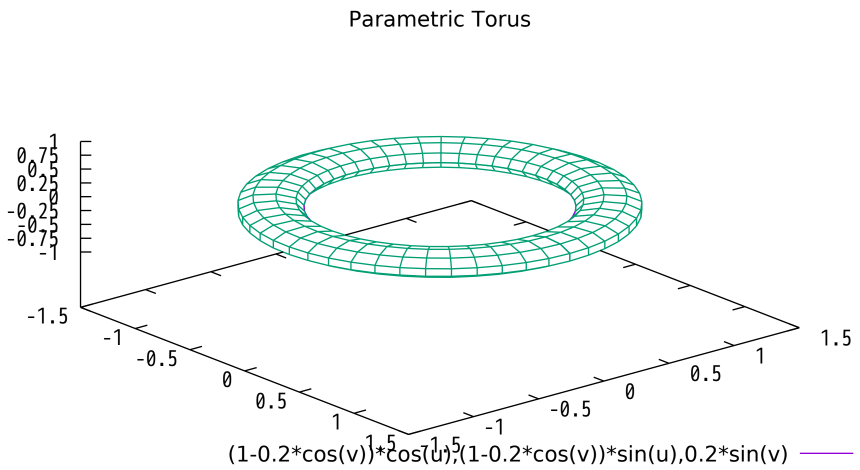


Parametric Sphere
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
cos(u)*cos(v),cos(u)*sin(v),sin(u)

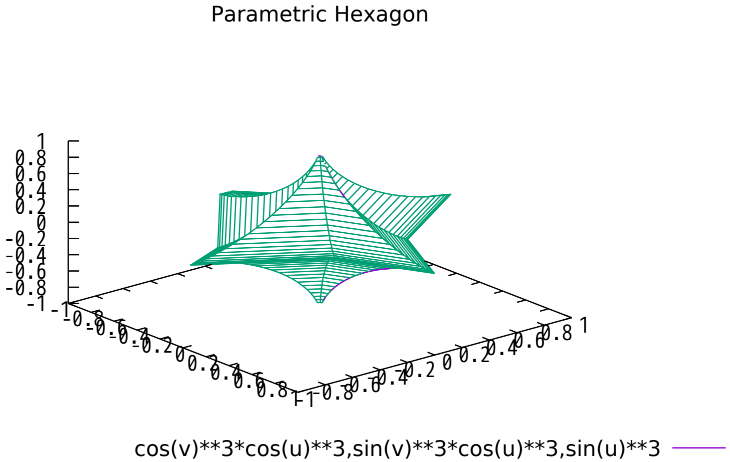


Parametric Sphere, crunched z axis
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
cos(u)*cos(v),cos(u)*sin(v),sin(u)

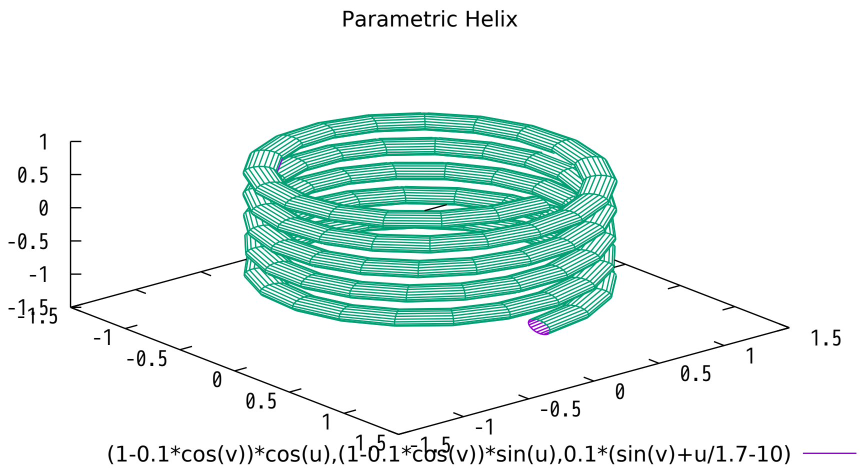

Parametric Sphere, enlarged z axis
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
cos(u)*cos(v),cos(u)*sin(v),sin(u)

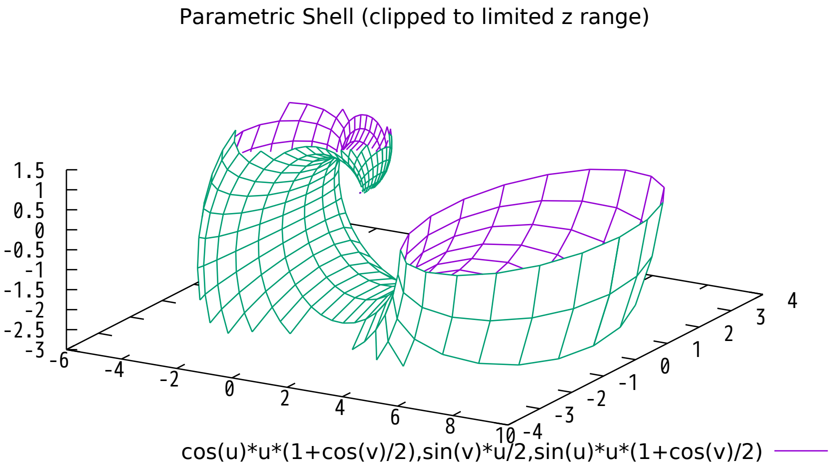


Parametric Torus
1
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1
-1.5
-1
-0.5
0
0.5
1
1.5
-1.5
-1
-0.5
0
0.5
1
1.5
(1-0.2*cos(v))*cos(u),(1-0.2*cos(v))*sin(u),0.2*sin(v)

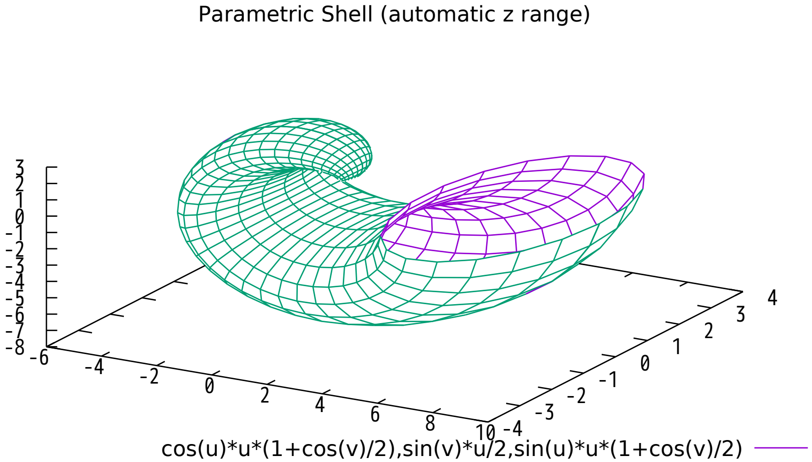


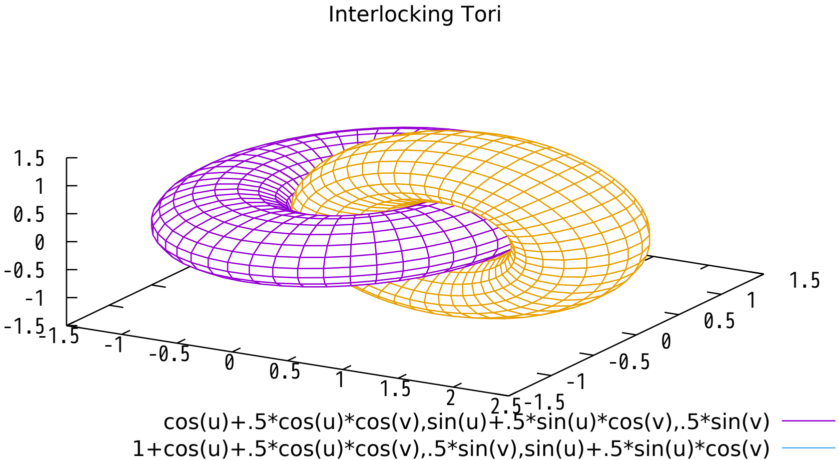
Parametric Hexagon
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
cos(v)**3*cos(u)**3,sin(v)**3*cos(u)**3,sin(u)**3


Parametric Helix
1
0.5
0
-0.5
-1
-1.5
-1.5
-1
-0.5
0
0.5
1
1.5
-1.5
-1
-0.5
0
0.5
1
1.5
(1-0.1*cos(v))*cos(u),(1-0.1*cos(v))*sin(u),0.1*(sin(v)+u/1.7-10)

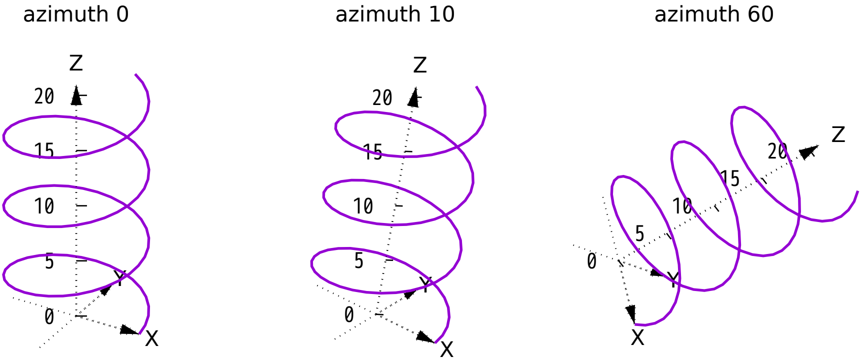


Parametric Shell (clipped to limited z range)
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-6
-4
-2
0
2
4
6
8
10
-4
-3
-2
-1
0
1
2
3
4
cos(u)*u*(1+cos(v)/2),sin(v)*u/2,sin(u)*u*(1+cos(v)/2)

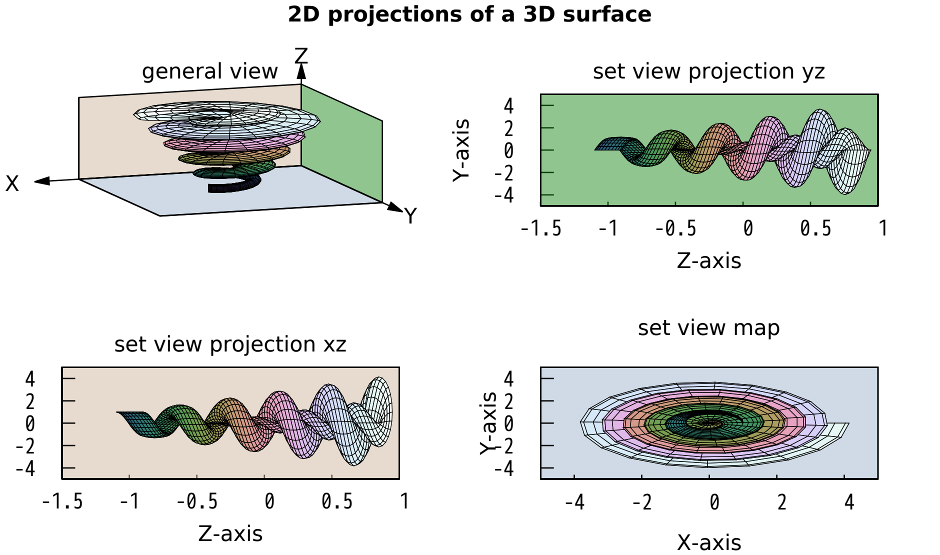

Parametric Shell (automatic z range)
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-6
-4
-2
0
2
4
6
8
10
-4
-3
-2
-1
0
1
2
3
4
cos(u)*u*(1+cos(v)/2),sin(v)*u/2,sin(u)*u*(1+cos(v)/2)

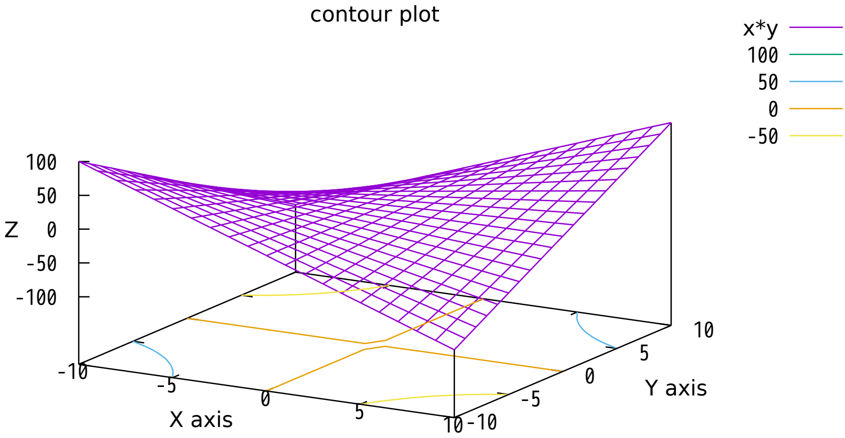


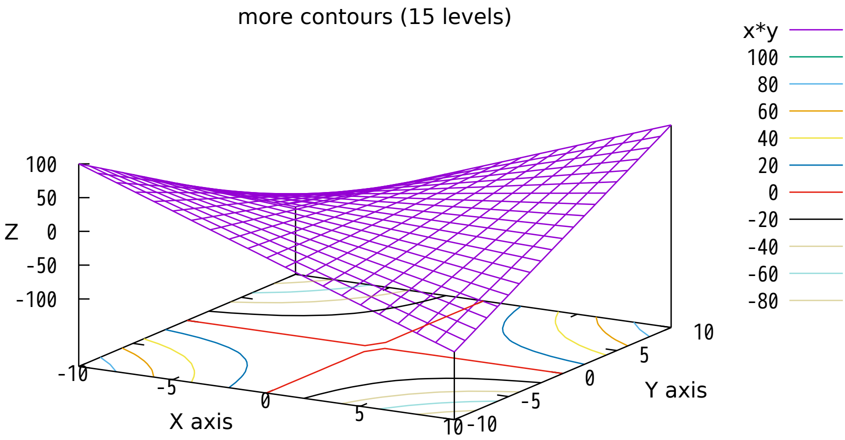
Interlocking Tori
1.5
1
0.5
0
-0.5
-1
-1.5
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
-1.5
-1
-0.5
0
0.5
1
1.5
cos(u)+.5*cos(u)*cos(v),sin(u)+.5*sin(u)*cos(v),.5*sin(v)
1+cos(u)+.5*cos(u)*cos(v),.5*sin(v),sin(u)+.5*sin(u)*cos(v)



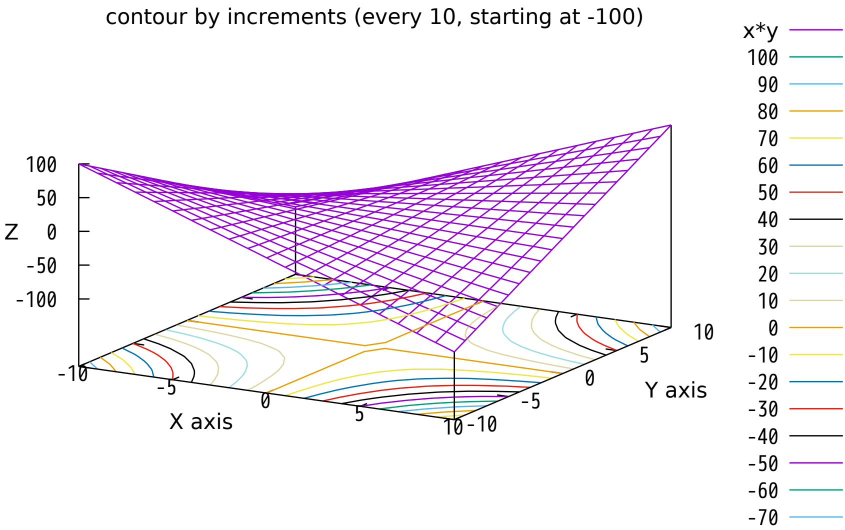
azimuth 0
Z
20
15
10
5
0
Y
X
azimuth 10
Z
20
15
10
5
0
Y
X
azimuth 60
Z
20
15
10
5
0
Y
X


2D projections of a 3D surface
general view
Z
X
Y
set view projection yz
Y-axis
4
2
0
-2
-4
-1.5
-1
-0.5
0
0.5
1
Z-axis
set view projection xz
4
2
0
-2
-4
-1.5
-1
-0.5
0
0.5
1
Z-axis
set view map
Y-axis
4
2
0
-2
-4
-4
-2
0
2
4
X-axis

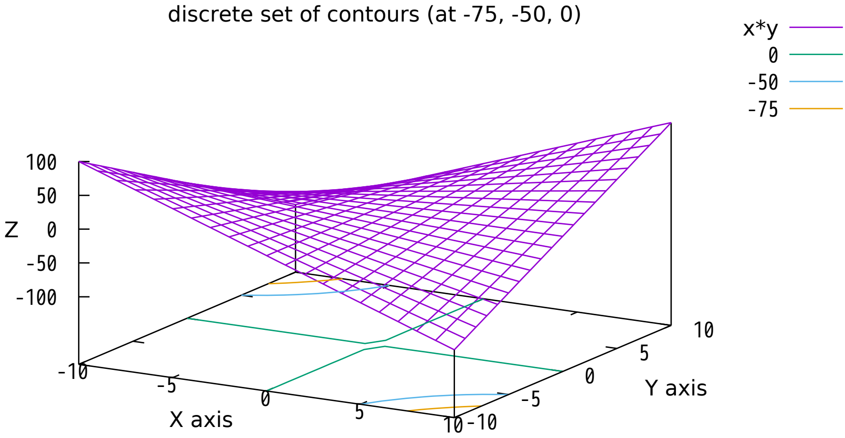

contour plot
x*y
100
50
0
-50
100
50
Z 0
-50
-100
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis



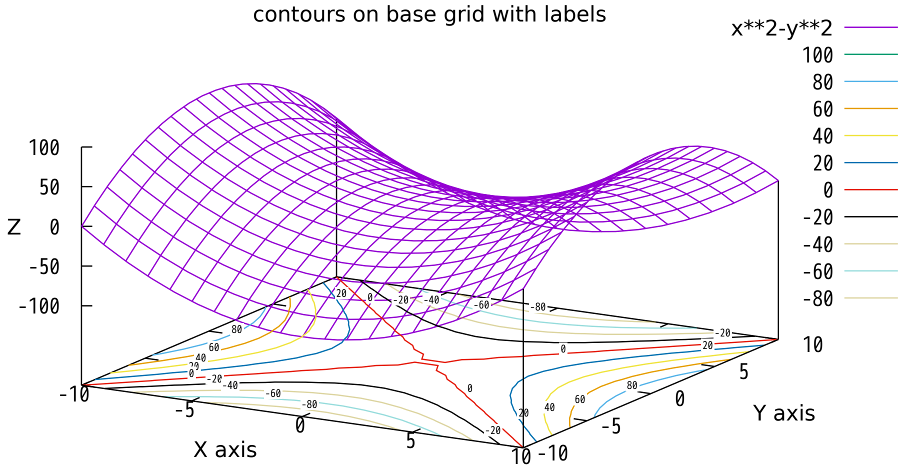
more contours (15 levels)
x*y
100
80
60
40
20
0
-20
-40
-60
-80
Z
100
50
0
-50
-100
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

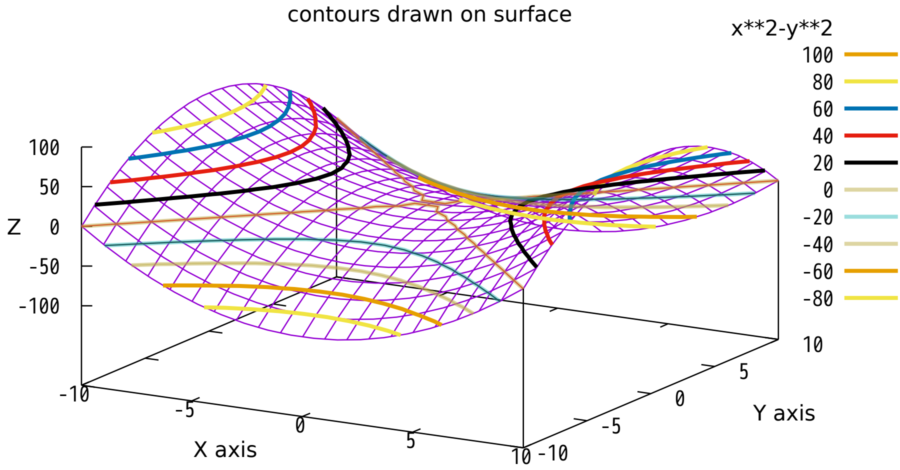


contour by increments (every 10, starting at -100)
x*y
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Z
100
50
0
-50
-100
X axis
-10
-5
0
5
10
Y axis
-10
-5
0
5
10

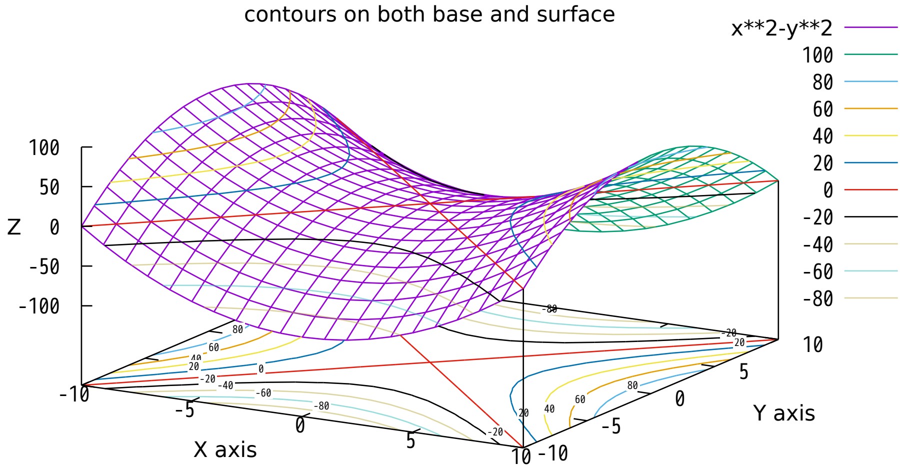


discrete set of contours (at -75, -50, 0)
x*y
0
-50
-75
100
50
Z 0
-50
-100
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

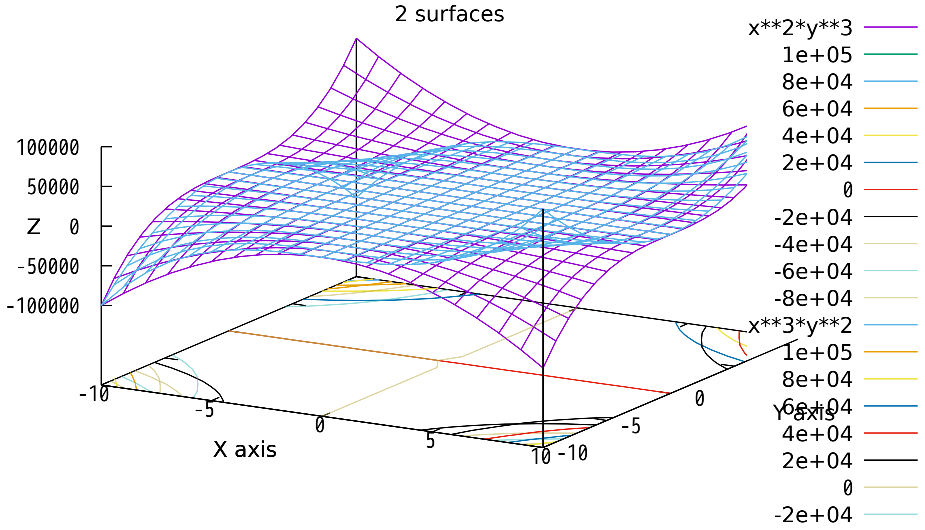

contours on base grid with labels
x**2-y**2
100
80
60
40
20
0
-20
-40
-60
-80
Z
X axis
Y axis



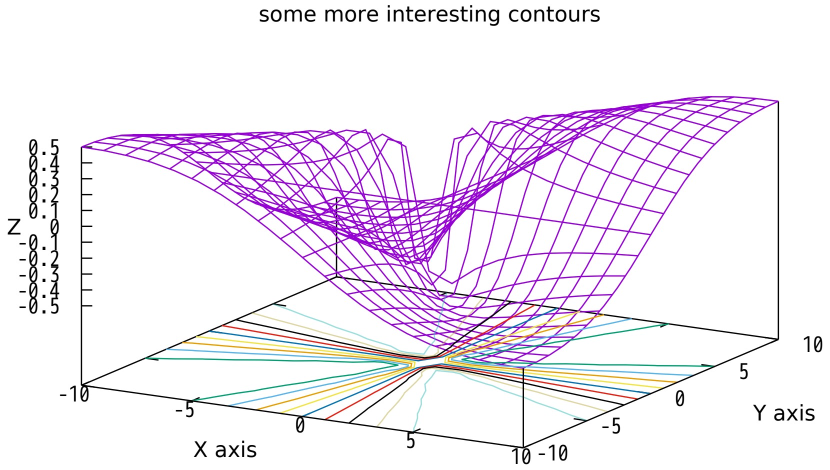
contours drawn on surface
x**2-y**2
100
80
60
40
20
0
-20
-40
-60
-80
Z
100
50
0
-50
-100
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis



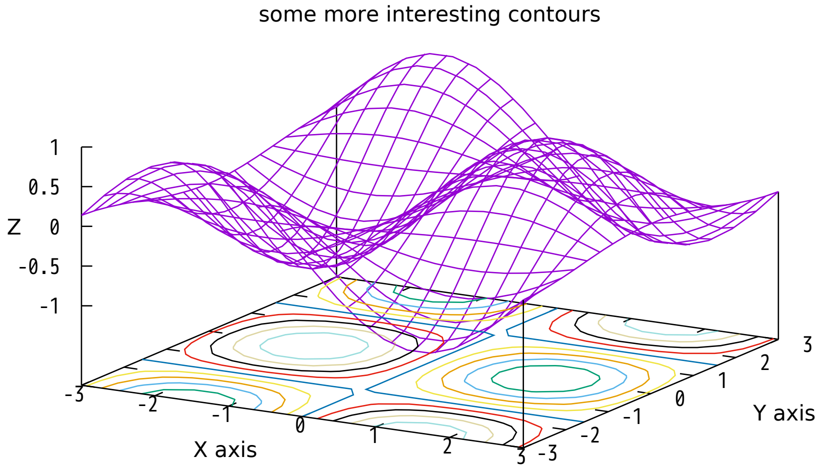
contours on both base and surface
x**2-y**2
100
80
60
40
20
0
-20
-40
-60
-80
Z
100
50
0
-50
-100
X axis
-10
-5
0
5
10
Y axis
-10
-5
0
5
10

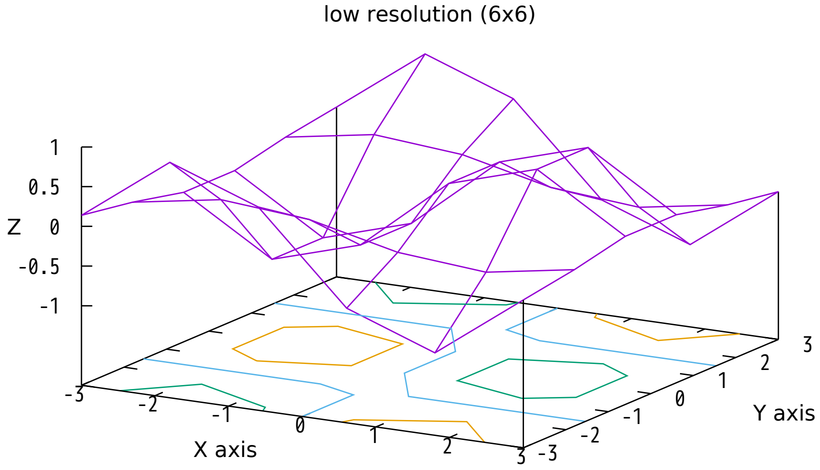


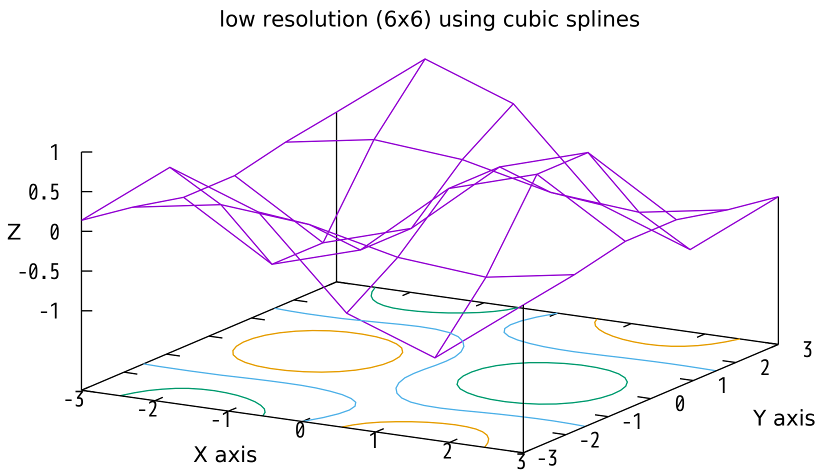
2 surfaces
x**2*y**3
1e+05
8e+04
6e+04
4e+04
2e+04
0
-2e+04
-4e+04
-6e+04
-8e+04
x**3*y**2
1e+05
8e+04
6e+04
4e+04
2e+04
0
-2e+04
100000
50000
Z 0
-50000
-100000
-10
-5
0
5
10
X axis
-10
-5
0
Y axis



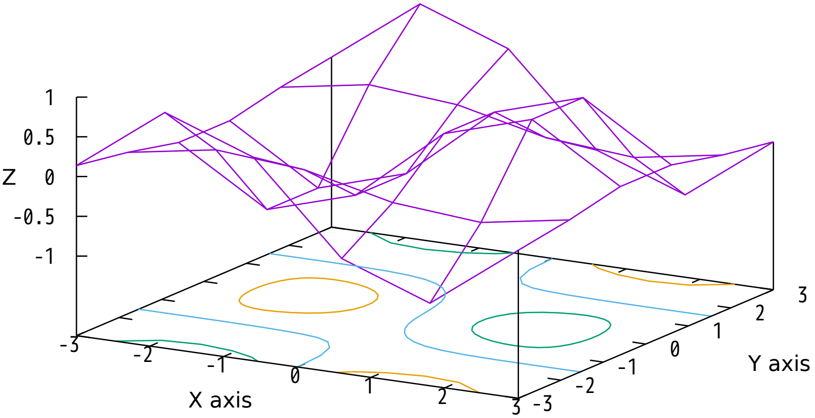
some more interesting contours
Z
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-10
-5
0
5
10
X axis
-10
-5
0
5
10
Y axis

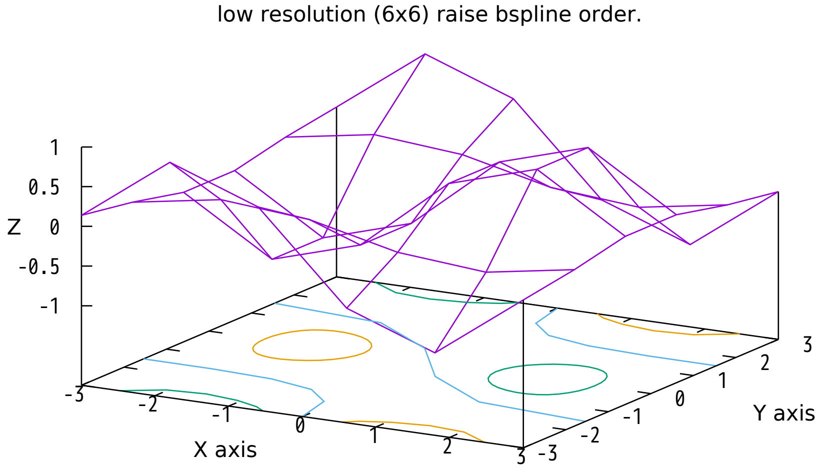

some more interesting contours
Z
1
0.5
0
-0.5
-1
X axis
-3
-2
-1
0
1
2
3
Y axis
-3
-2
-1
0
1
2
3


low resolution (6x6)
Z
1
0.5
0
-0.5
-1
X axis
-3
-2
-1
0
1
2
3
Y axis
-3
-2
-1
0
1
2
3

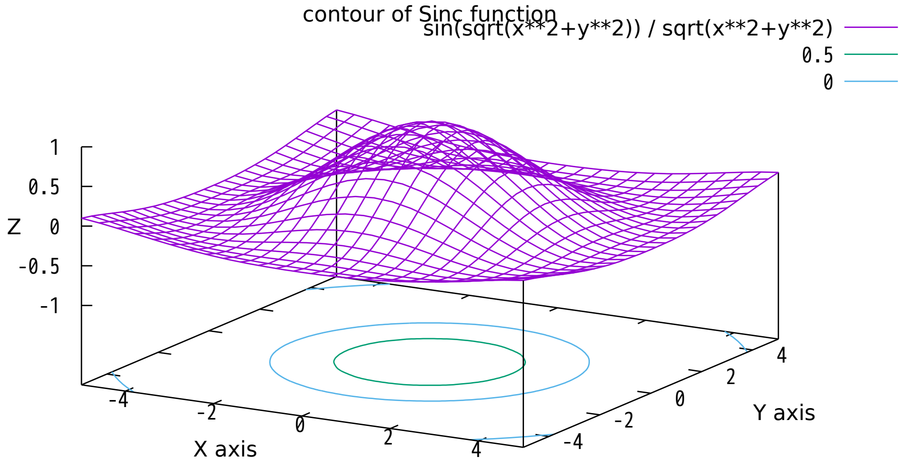

low resolution (6x6) using cubic splines
Z
1
0.5
0
-0.5
-1
X axis
-3
-2
-1
0
1
2
3
Y axis
-3
-2
-1
0
1
2
3

low resolution (6x6) using bspline approx.

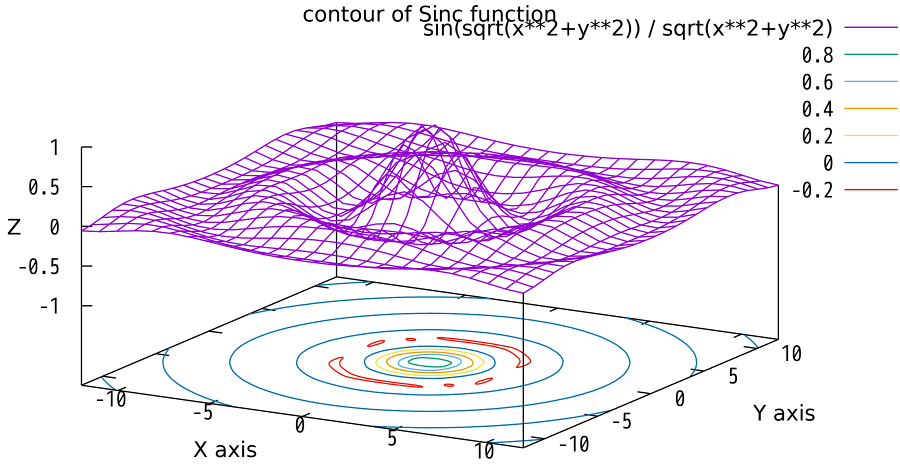




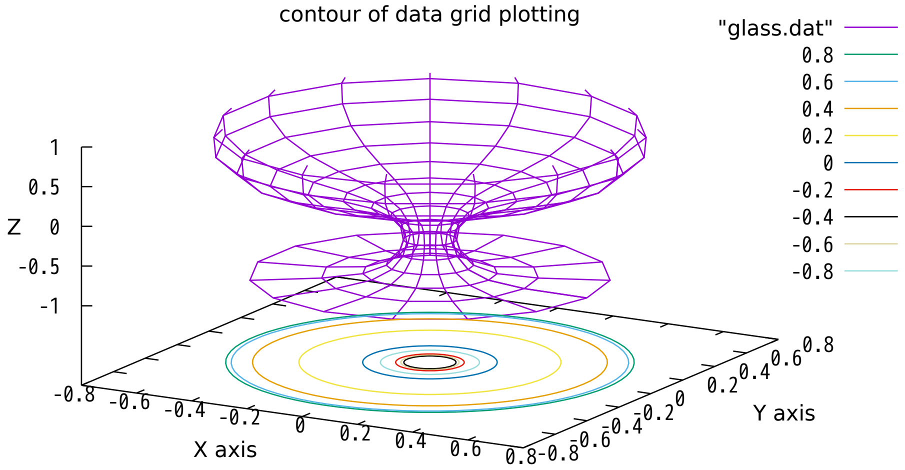
low resolution (6x6) raise bspline order.
Z
1
0.5
0
-0.5
-1
X axis
-3
-2
-1
0
1
2
3
Y axis
-3
-2
-1
0
1
2
3



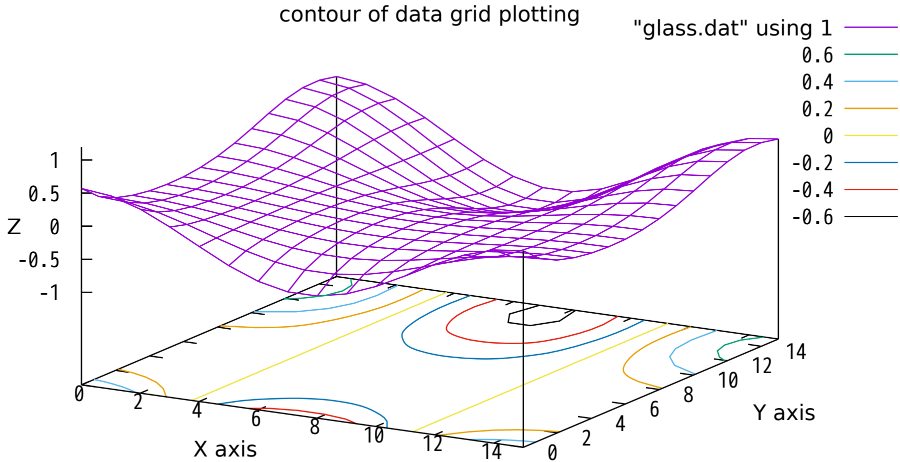
contour of Sinc function
sin(sqrt(x**2+y**2)) / sqrt(x**2+y**2)
0.5
0
Z
1
0.5
0
-0.5
-1
-4
-2
0
2
4
X axis
4
2
0
-2
-4
Y axis



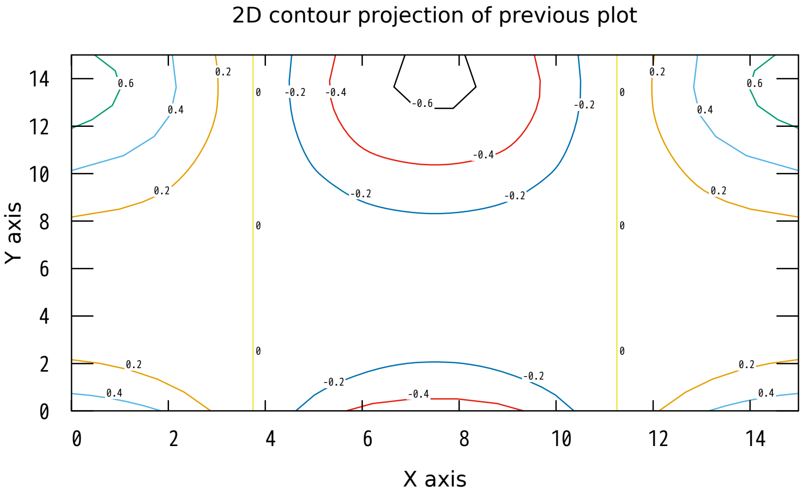
contour of Sinc function
sin(sqrt(x**2+y**2)) / sqrt(x**2+y**2)
0.8
0.6
0.4
0.2
0
-0.2
1
0.5
Z 0
-0.5
-1
-10
-5
0
5
10
X axis
10
5
0
-5
-10
Y axis

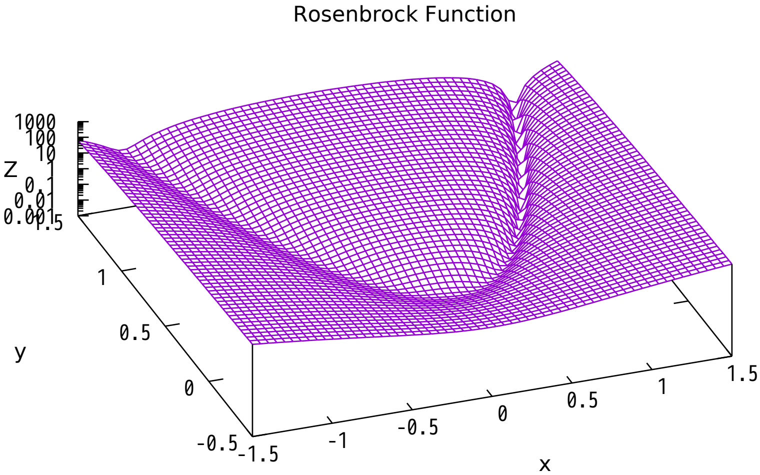


contour of data grid plotting
"glass.dat"
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
Z
1
0.5
0
-0.5
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
X axis
Y axis

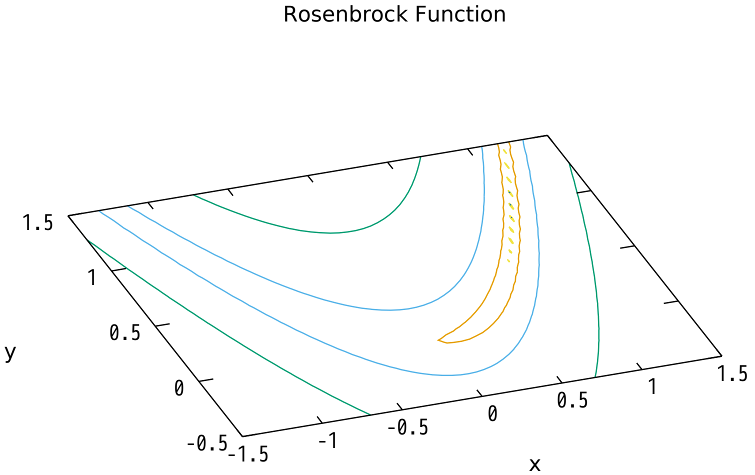


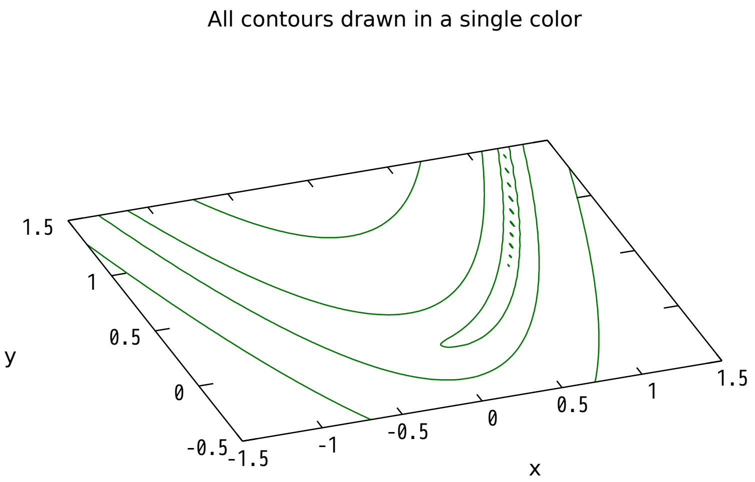
contour of data grid plotting
"glass.dat" using 1
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Z
1
0.5
0
-0.5
-1
0
2
4
6
8
10
12
14
X axis
0
2
4
6
8
10
12
14
Y axis


2D contour projection of previous plot
Y axis
X axis
0
2
4
6
8
10
12
14
0.6
0.4
0.2
0
-0.2
-0.4
-0.6

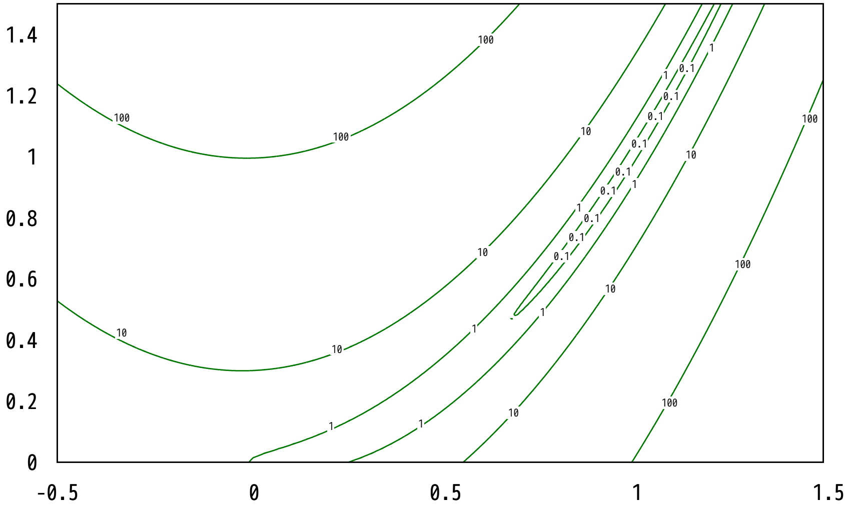


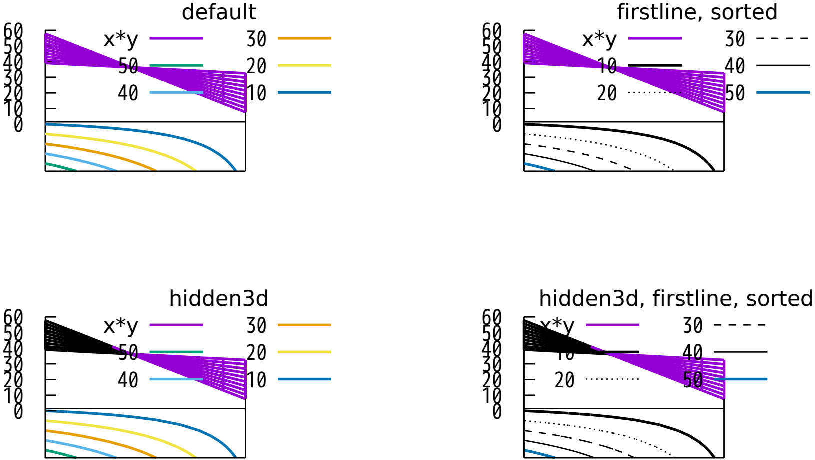
Rosenbrock Function
1000
100
10
1
0.1
0.01
0.001
Z
1.5
1
0.5
0
-0.5
y
-1.5
-1
-0.5
0
0.5
1
1.5
x


Rosenbrock Function
y
1.5
1
0.5
0
-0.5
x
-1.5
-1
-0.5
0
0.5
1
1.5

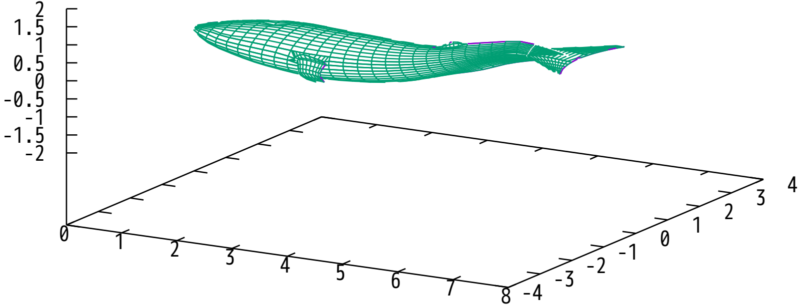

All contours drawn in a single color
1.5
1
0.5
0
-0.5
y
-1.5
-1
-0.5
0
0.5
1
1.5
x

Sometimes it helps to use multiplot

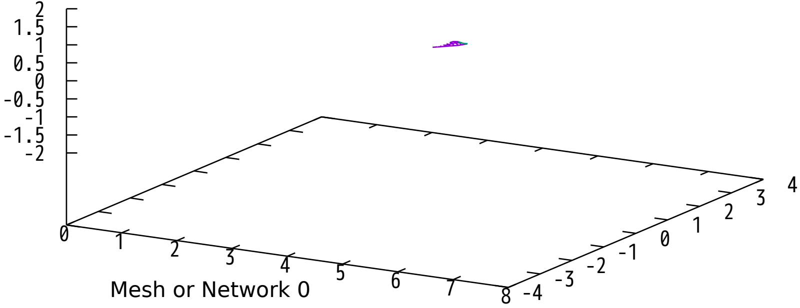


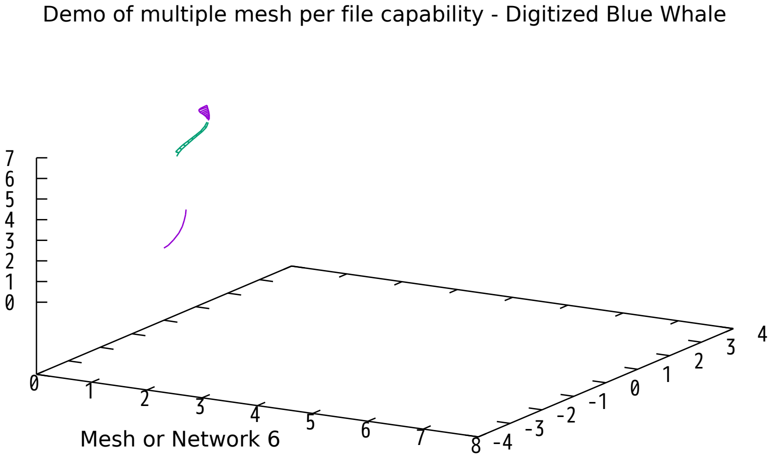

default
60
50
40
30
20
10
0
x*y
50
40
30
20
10
firstline, sorted
60
50
40
30
20
10
0
x*y
10
20
30
40
50
hidden3d
60
50
40
30
20
10
0
x*y
50
40
30
20
10
hidden3d, firstline, sorted
60
50
40
30
20
10
0
x*y
10
20
30
40
50

Demo of multiple mesh per file capability - Digitized Blue Whale

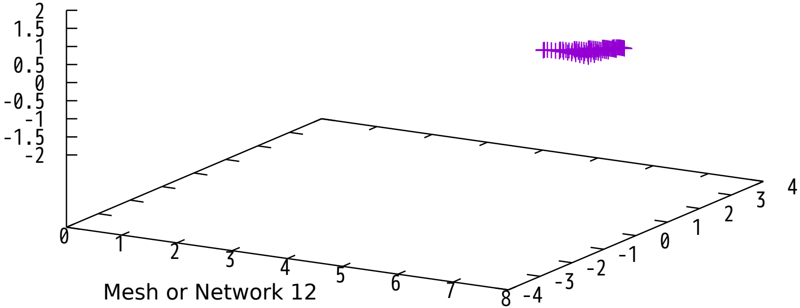


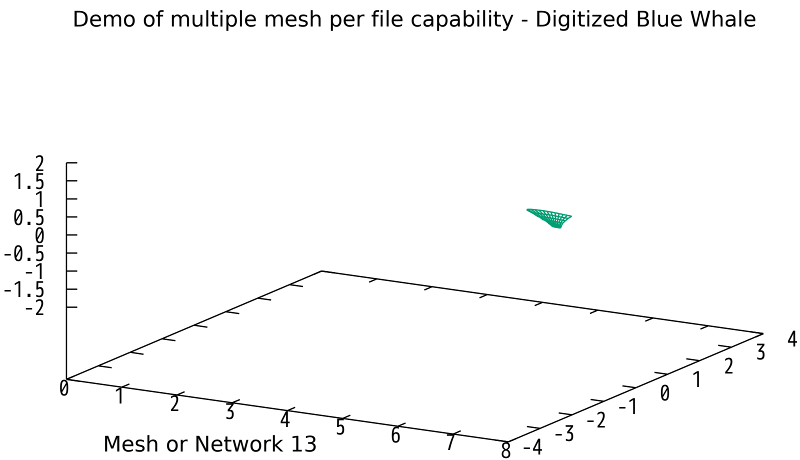
Demo of multiple mesh per file capability - Digitized Blue Whale



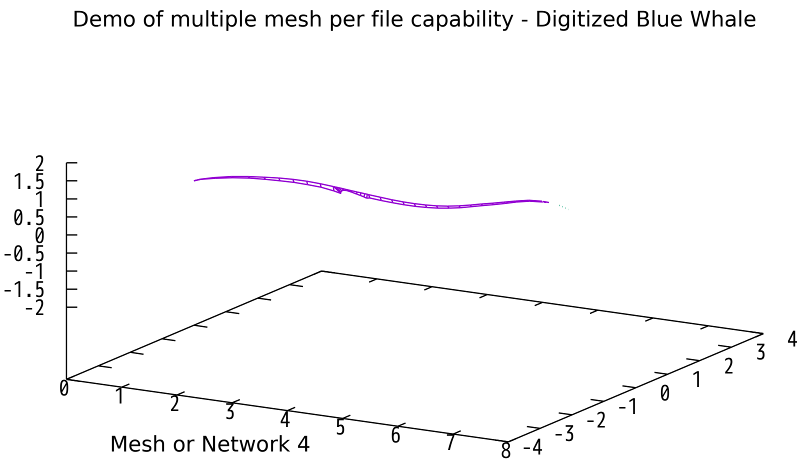

Demo of multiple mesh per file capability - Digitized Blue Whale
Mesh or Network 6
0
1
2
3
4
5
6
7
8
-4
-3
-2
-1
0
1
2
3
4
0
1
2
3
4
5
6
7

Demo of multiple mesh per file capability - Digitized Blue Whale

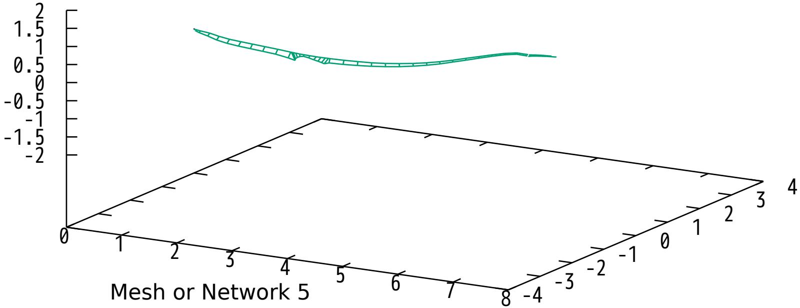


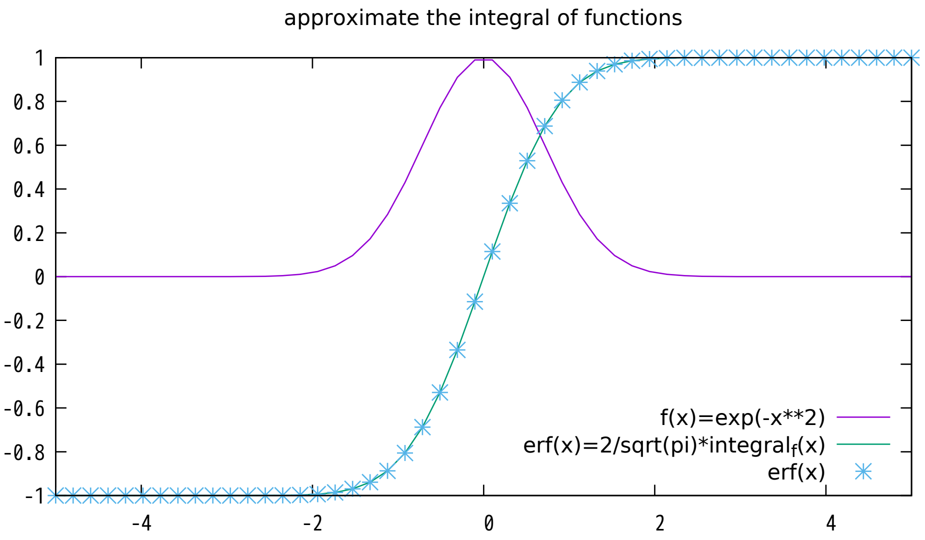


Demo of multiple mesh per file capability - Digitized Blue Whale
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0
1
2
3
4
5
6
7
8
-4
-3
-2
-1
0
1
2
3
4
Mesh or Network 13

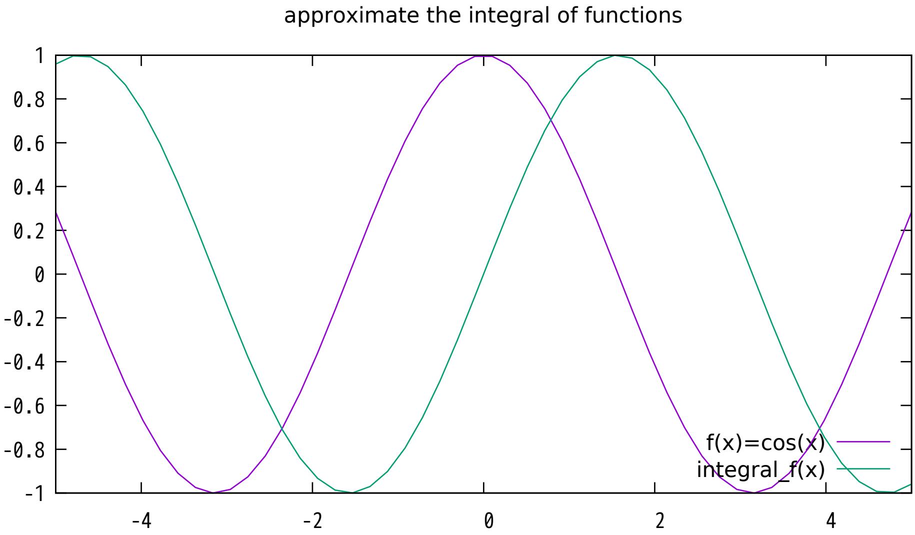

Demo of multiple mesh per file capability - Digitized Blue Whale
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0
1
2
3
4
5
6
7
8
Mesh or Network 4
-4
-3
-2
-1
0
1
2
3
4

Demo of multiple mesh per file capability - Digitized Blue Whale

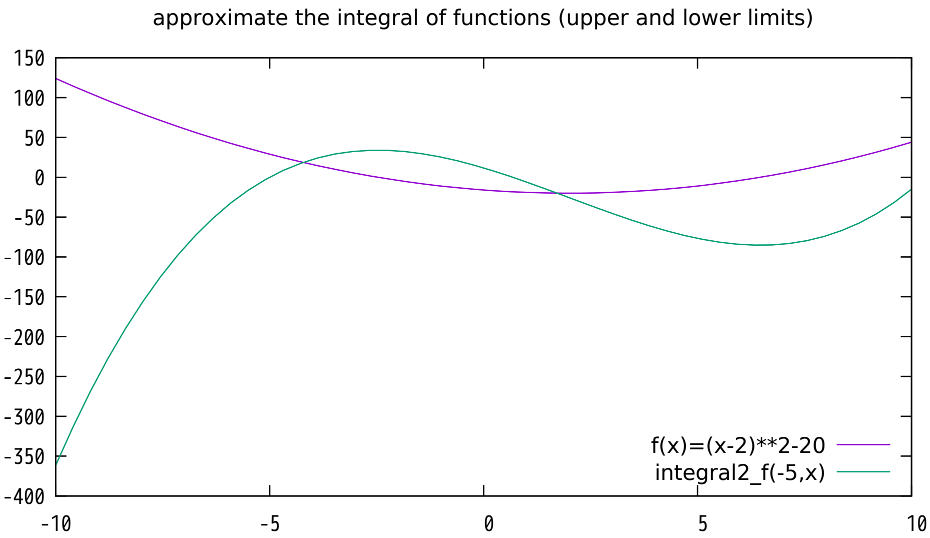




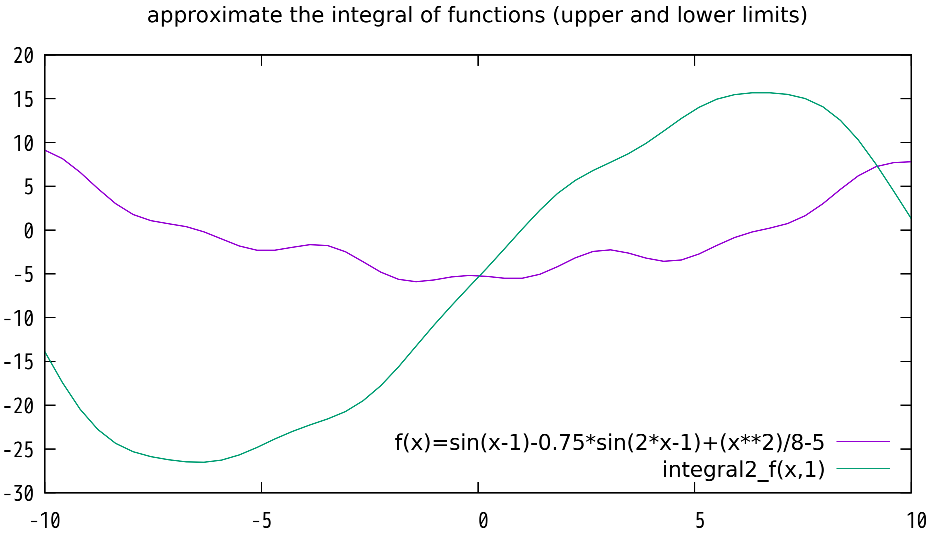
approximate the integral of functions
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-4
-2
0
2
4
f(x)=exp(-x**2)
erf(x)=2/sqrt(pi)*integral_f(x)
erf(x)



approximate the integral of functions
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-4
-2
0
2
4
f(x)=cos(x)
integral_f(x)

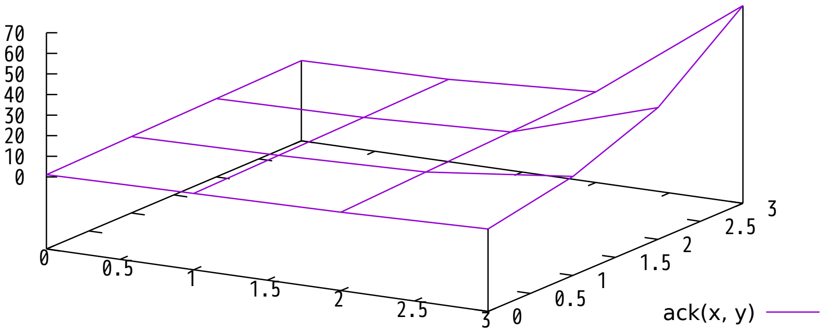


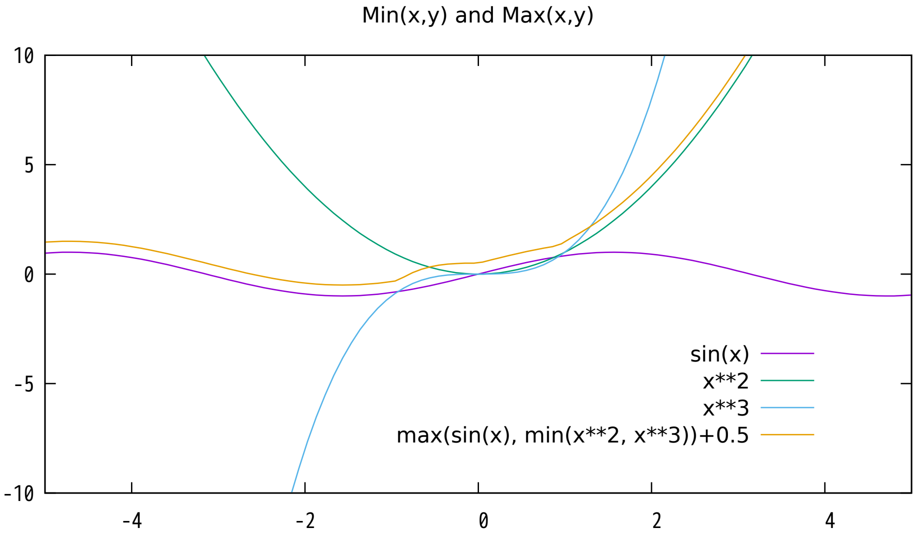
approximate the integral of functions (upper and lower limits)
150
100
50
0
-50
-100
-150
-200
-250
-300
-350
-400
-10
-5
0
5
10
f(x)=(x-2)**2-20
integral2_f(-5,x)



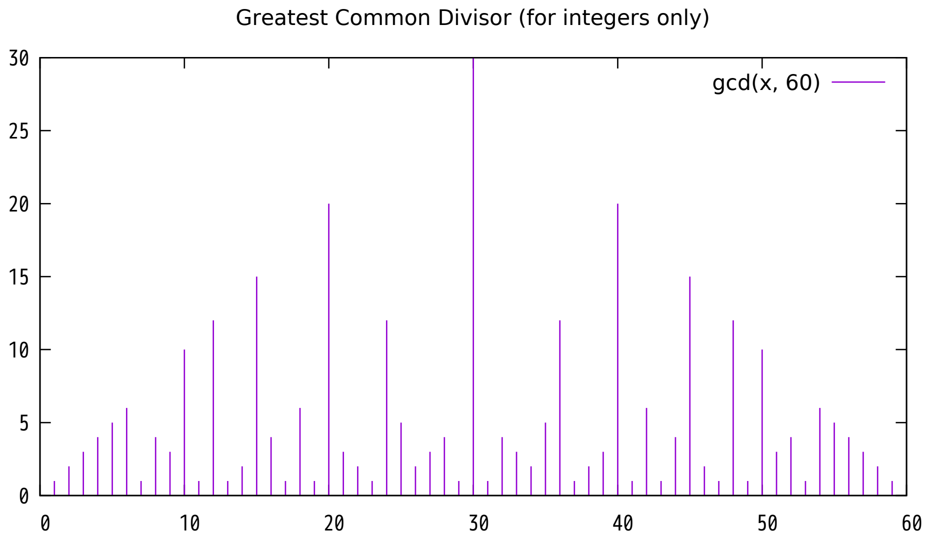
approximate the integral of functions (upper and lower limits)
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-10
-5
0
5
10
f(x)=sin(x-1)-0.75*sin(2*x-1)+(x**2)/8-5
integral2_f(x,1)

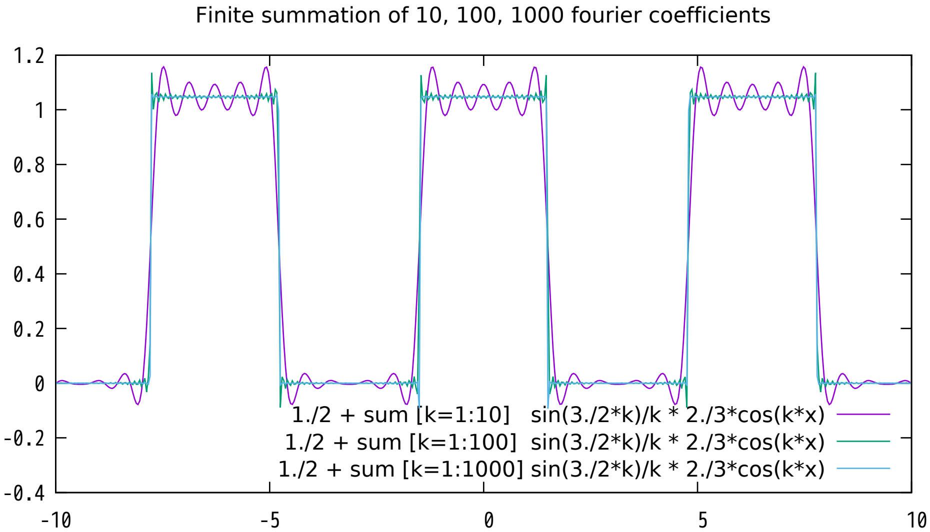
Plot of the ackermann function

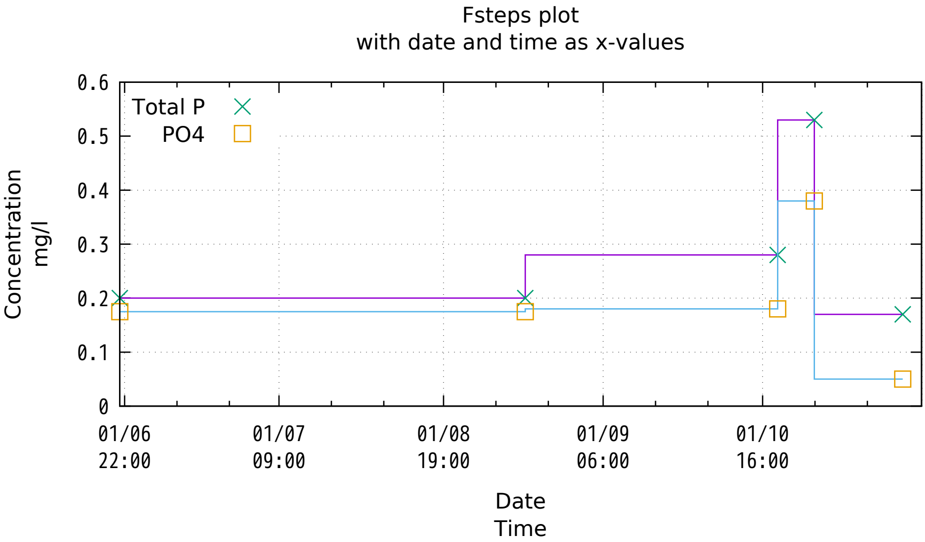




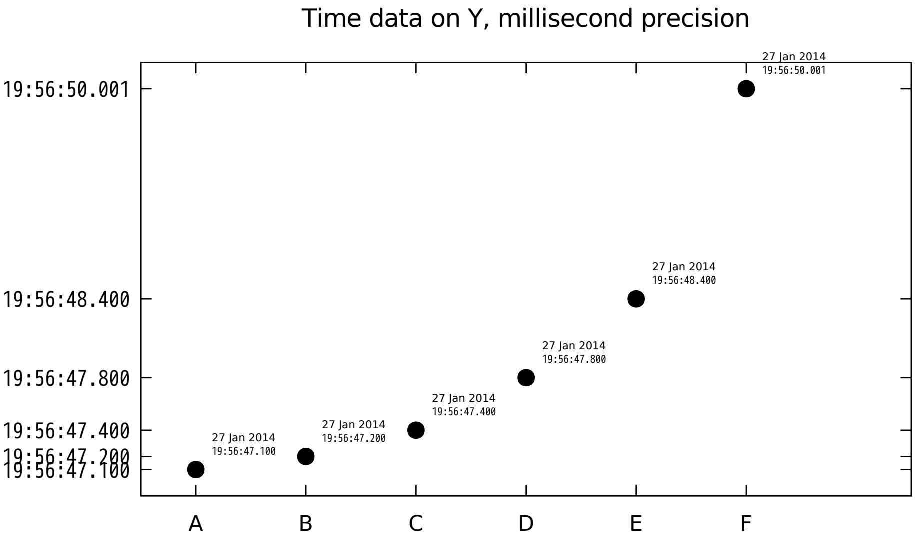
Min(x,y) and Max(x,y)
10
5
0
-5
-10
-4
-2
0
2
4
sin(x)
x**2
x**3
max(sin(x), min(x**2, x**3))+0.5


Greatest Common Divisor (for integers only)
gcd(x, 60)
0
5
10
15
20
25
30
0
10
20
30
40
50
60

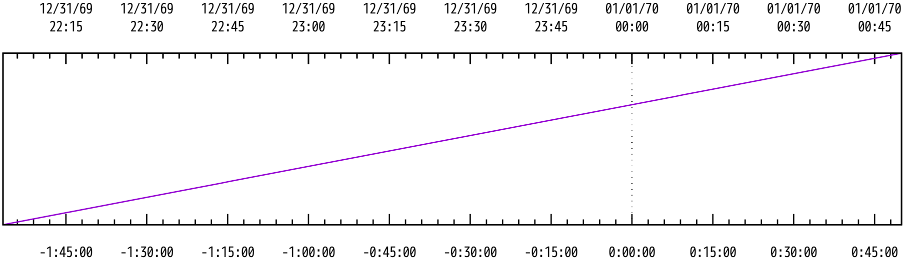

Finite summation of 10, 100, 1000 fourier coefficients
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
1./2 + sum [k=1:10] sin(3./2*k)/k * 2./3*cos(k*x)
1./2 + sum [k=1:100] sin(3./2*k)/k * 2./3*cos(k*x)
1./2 + sum [k=1:1000] sin(3./2*k)/k * 2./3*cos(k*x)

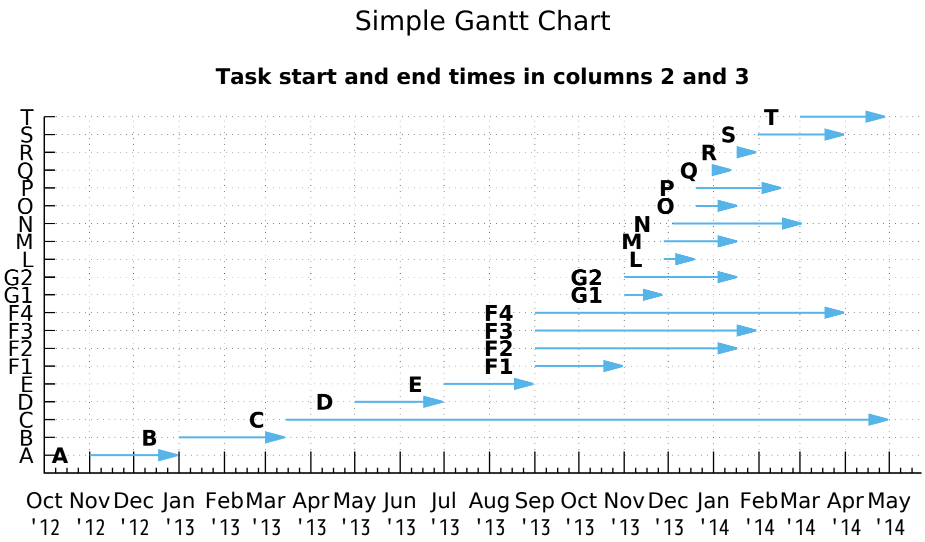


Fsteps plot
with date and time as x-values
Total P
PO4
Concentration
mg/l
0.6
0.5
0.4
0.3
0.2
0.1
0
01/06
22:00
01/07
09:00
01/08
19:00
01/09
06:00
01/10
16:00
Date
Time

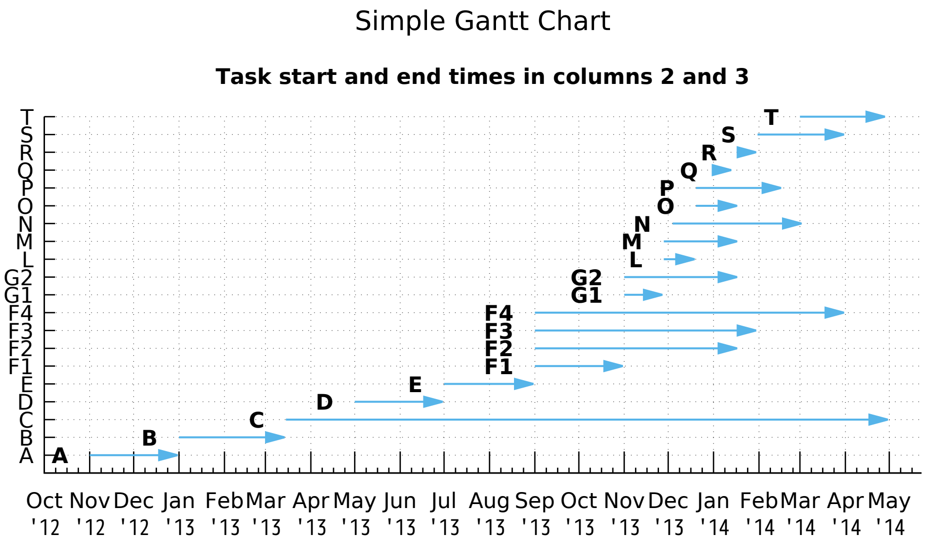

Time data on Y, millisecond precision
19:56:50.001
19:56:48.400
19:56:47.800
19:56:47.400
19:56:47.200
19:56:47.100
27 Jan 2014 19:56:47.100
27 Jan 2014 19:56:47.200
27 Jan 2014 19:56:47.400
27 Jan 2014 19:56:47.800
27 Jan 2014 19:56:48.400
27 Jan 2014 19:56:50.001
A
B
C
D
E
F

Date format (top) vs Time format (bottom)

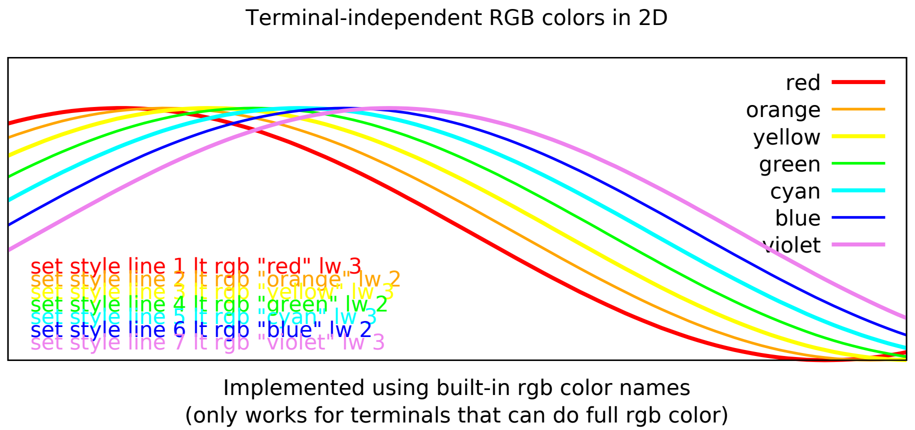




Simple Gantt Chart
Task start and end times in columns 2 and 3
A
B
C
D
E
F1
F2
F3
F4
G1
G2
L
M
N
O
P
Q
R
S
T
Oct '12
Nov '12
Dec '12
Jan '13
Feb '13
Mar '13
Apr '13
May '13
Jun '13
Jul '13
Aug '13
Sep '13
Oct '13
Nov '13
Dec '13
Jan '14
Feb '14
Mar '14
Apr '14
May '14

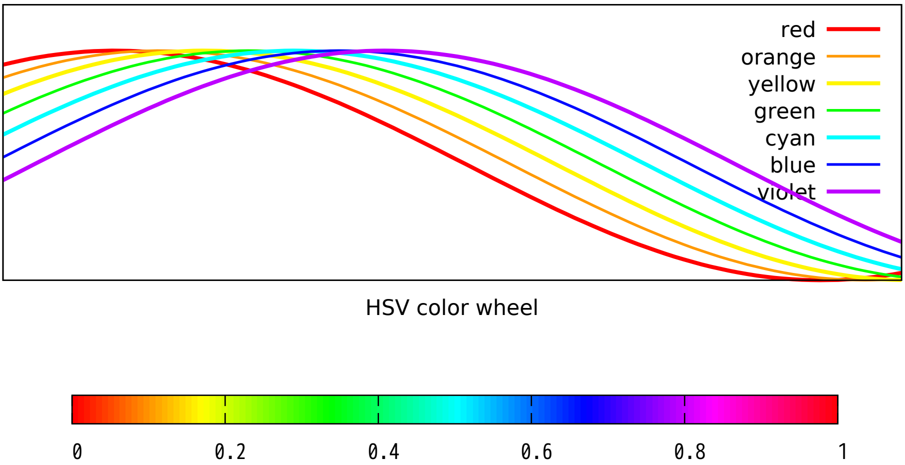


Simple Gantt Chart
Task start and end times in columns 2 and 3
A
B
C
D
E
F1
F2
F3
F4
G1
G2
L
M
N
O
P
Q
R
S
T
Oct '12
Nov '12
Dec '12
Jan '13
Feb '13
Mar '13
Apr '13
May '13
Jun '13
Jul '13
Aug '13
Sep '13
Oct '13
Nov '13
Dec '13
Jan '14
Feb '14
Mar '14
Apr '14
May '14



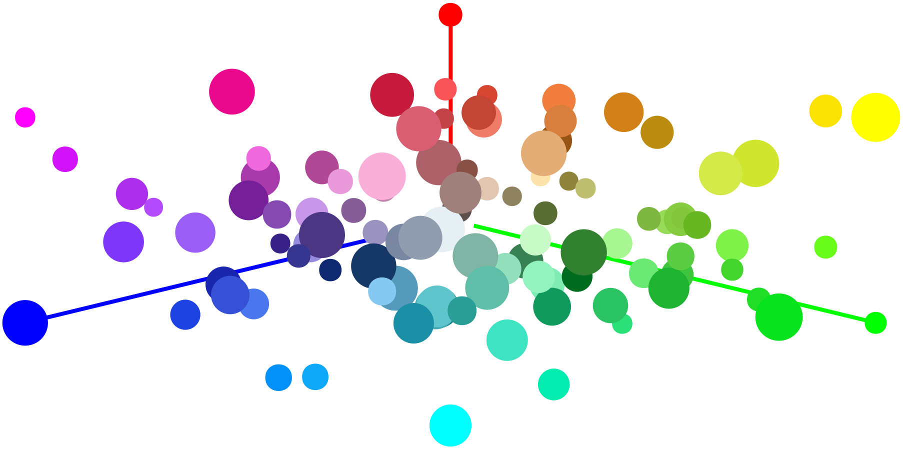
Terminal-independent RGB colors in 2D
red
orange
yellow
green
cyan
blue
violet
set style line 1 lt rgb "red" lw 3
set style line 2 lt rgb "orange" lw 2
set style line 3 lt rgb "yellow" lw 3
set style line 4 lt rgb "green" lw 2
set style line 5 lt rgb "cyan" lw 3
set style line 6 lt rgb "blue" lw 2
set style line 7 lt rgb "violet" lw 3
Implemented using built-in rgb color names
(only works for terminals that can do full rgb color)

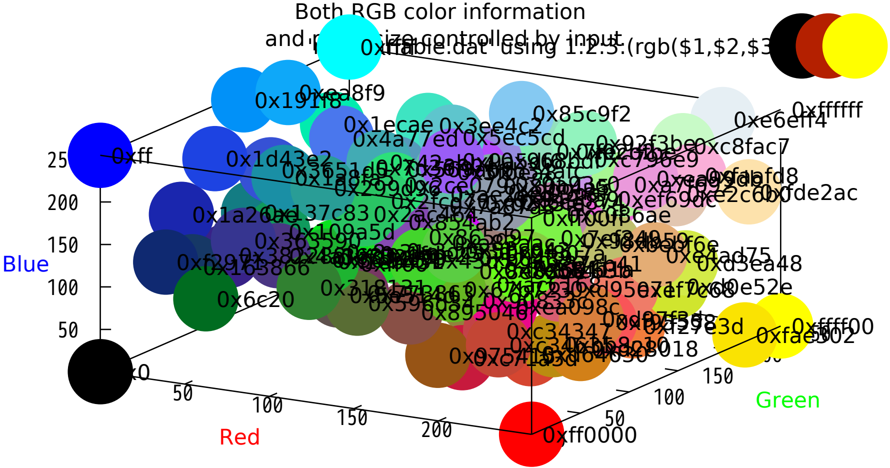
Terminal-independent palette colors in 2D
Implemented using command line macros referring to a fixed HSV palette



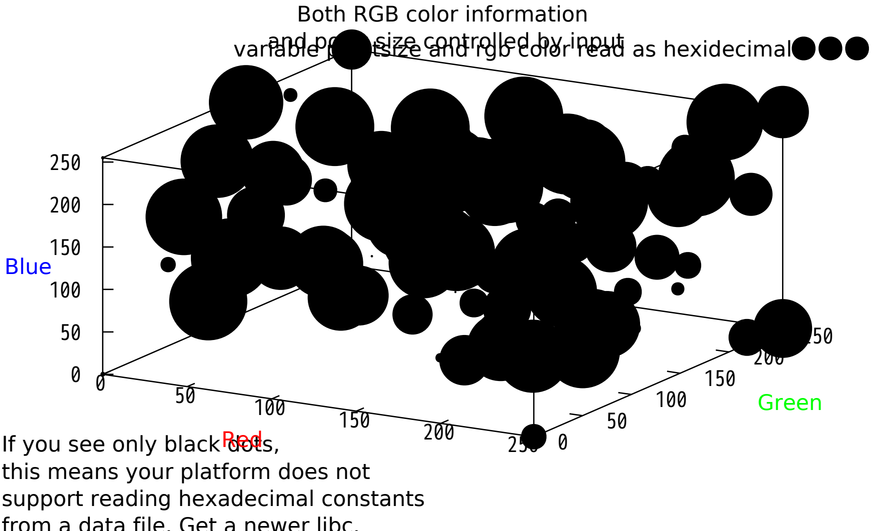
RGB color information read from data file

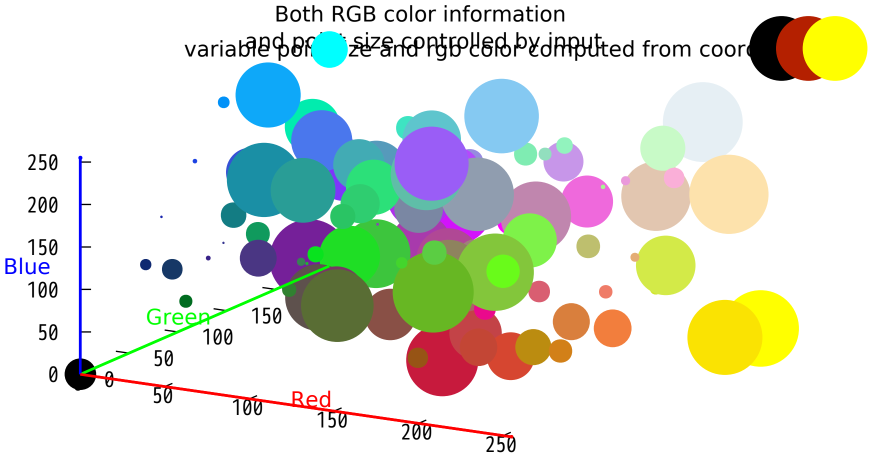
Both RGB color information
and point size controlled by input



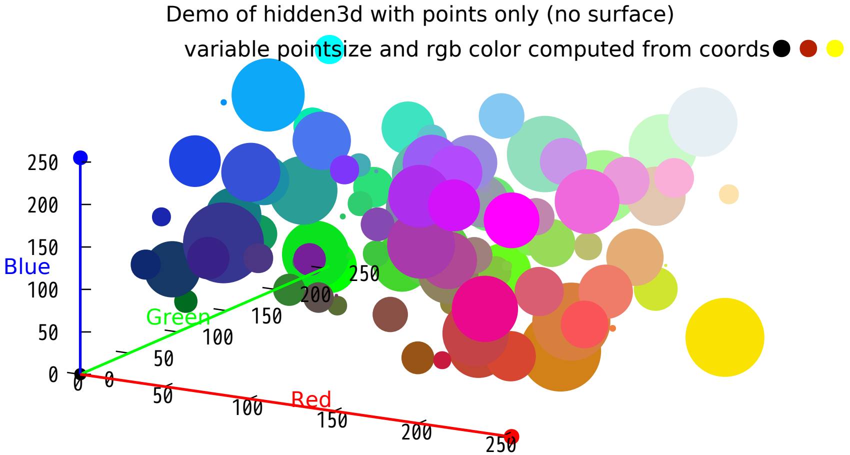


Both RGB color information
Blue
Red
Green
0xff
0x0
0xff0000
0xffff00
0xffffff
0xe6eff4
0x85c9f2
0x1d43e2
0x6c20
0xd3ea48
0xe4ad75
0xfde2ac
0xc8fac7
0xc34347
50
100
150
200
250

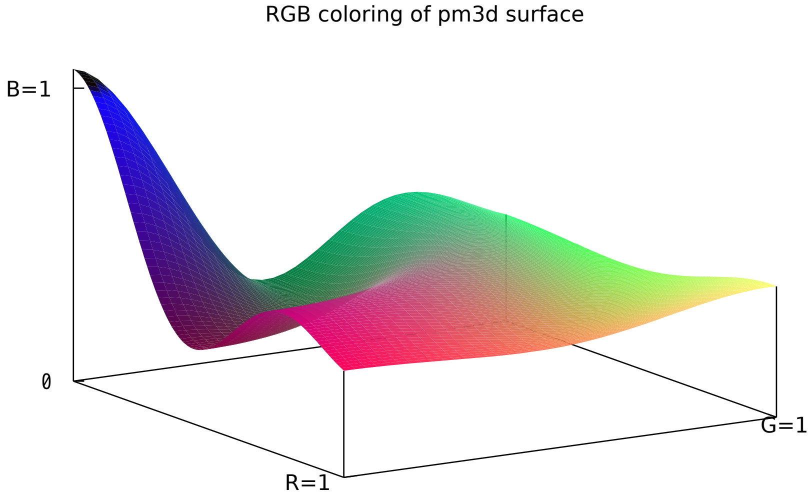

Both RGB color information
and point size controlled by input
variable pointsize and rgb color read as hexidecimal
Blue
Red
Green
0
50
100
150
200
250
If you see only black dots,
this means your platform does not
support reading hexadecimal constants
from a data file. Get a newer libc.

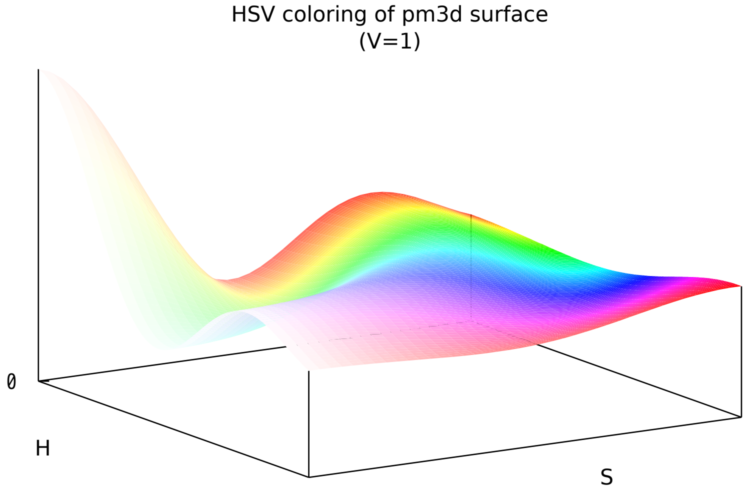


Both RGB color information
and point size controlled by input
variable point size and rgb color computed from coord
Blue
Green
Red
0
50
100
150
200
250

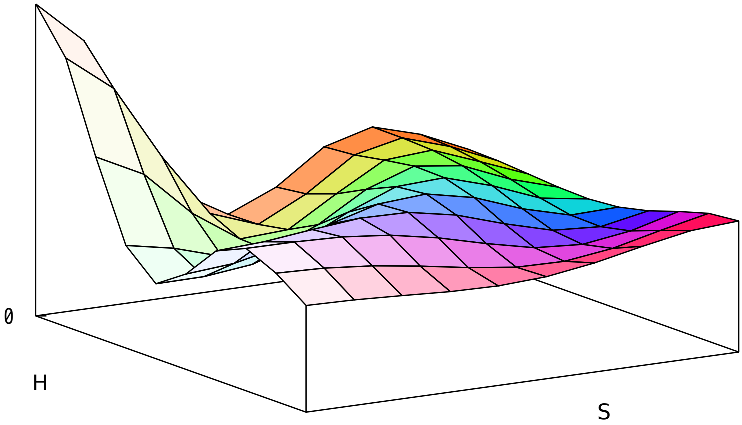


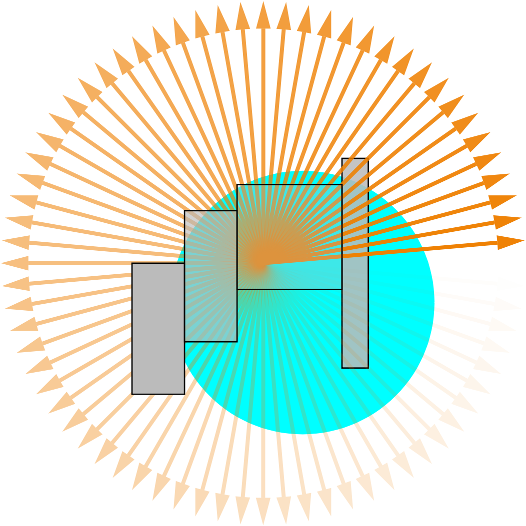
Demo of hidden3d with points only (no surface)
variable pointsize and rgb color computed from coords
Blue
Green
Red
0
50
100
150
200
250

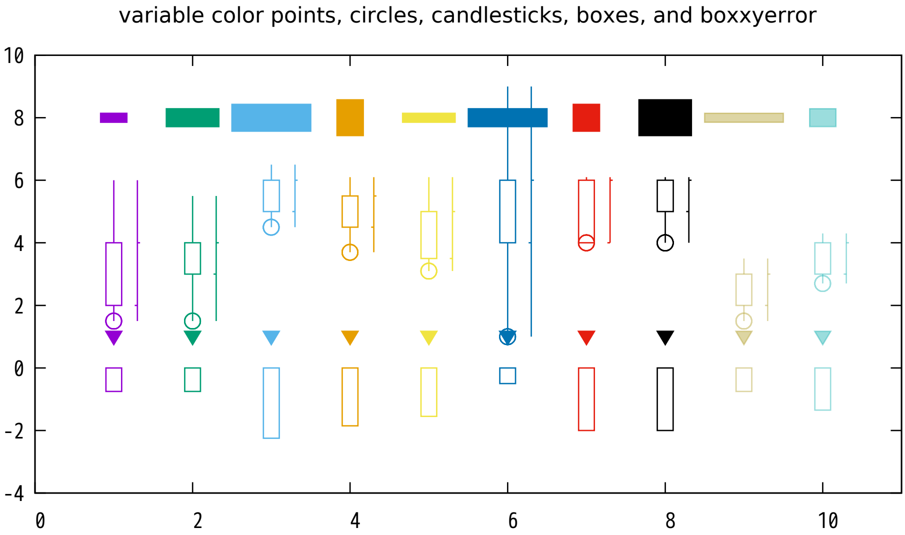

RGB coloring of pm3d surface
B=1
0
R=1
G=1

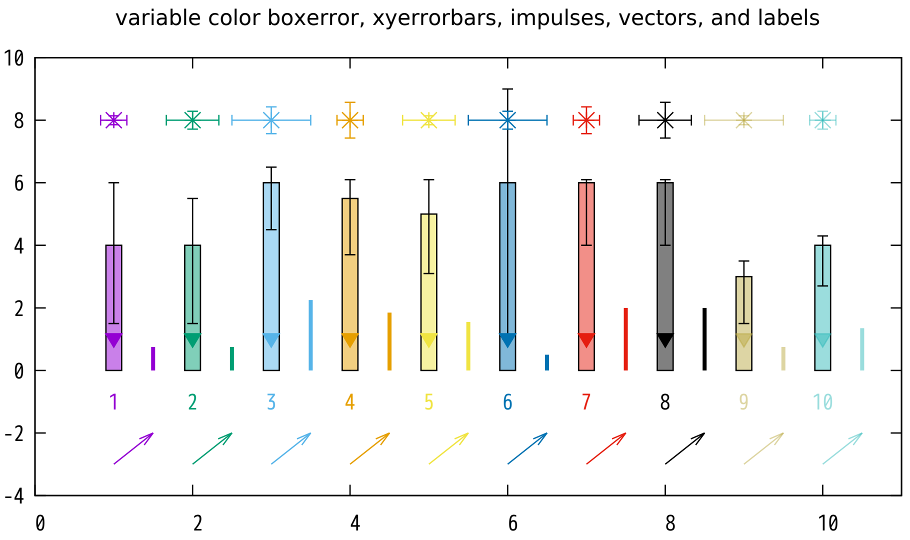

HSV coloring of pm3d surface
(V=1)
0
H
S

Explicit borders for pm3d tiling

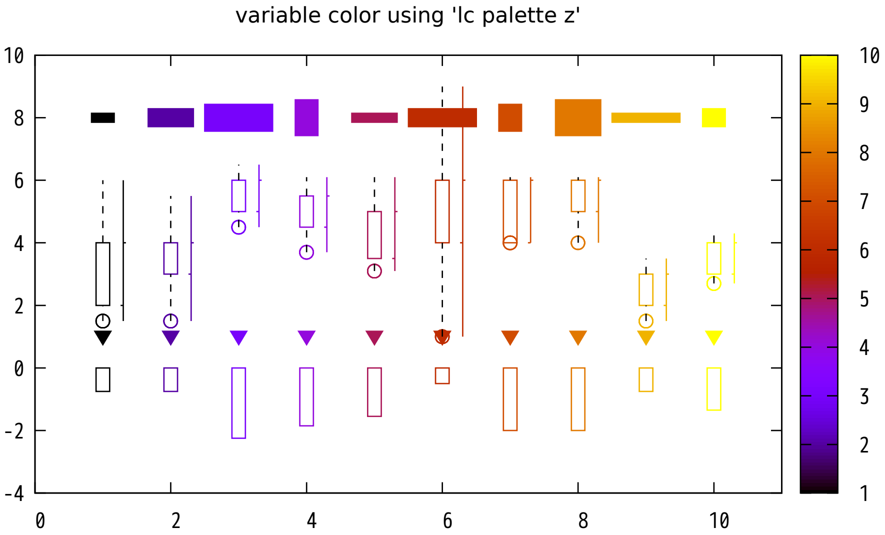


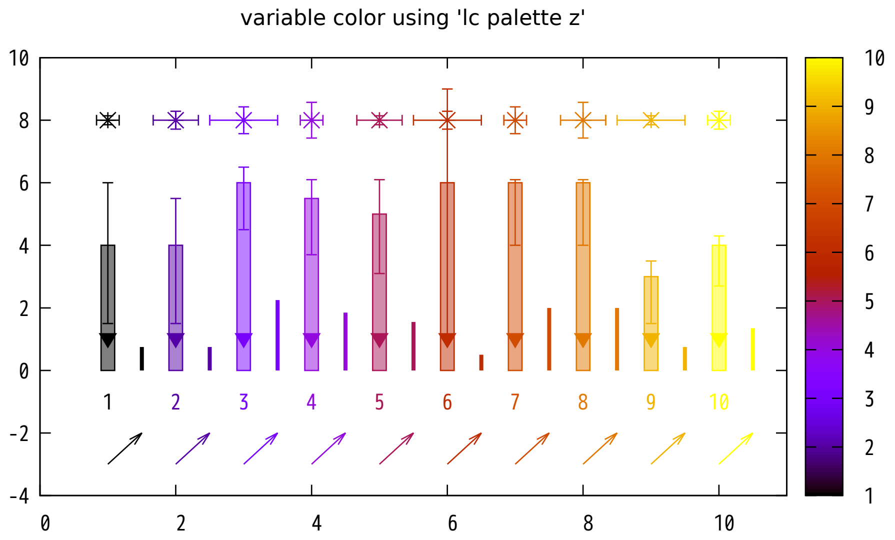


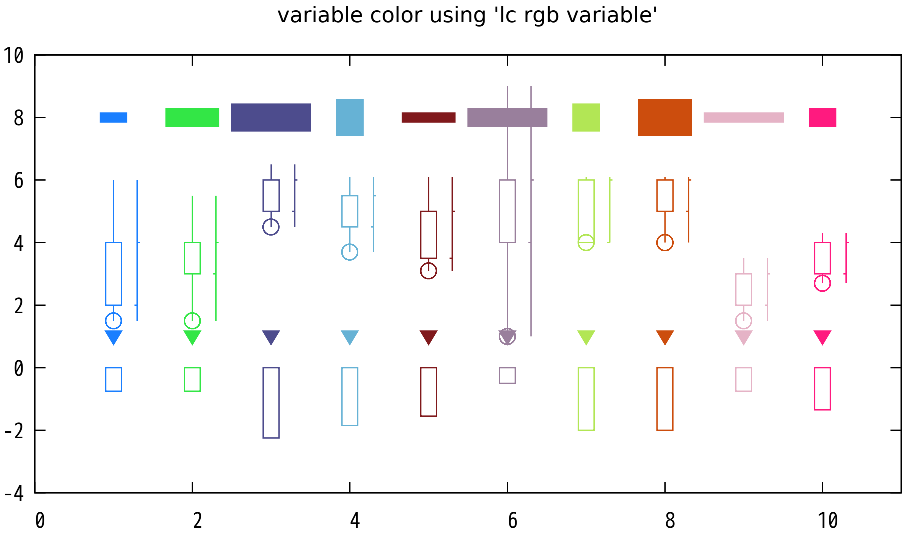

variable color points, circles, candlesticks, boxes, and boxxyerror
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10



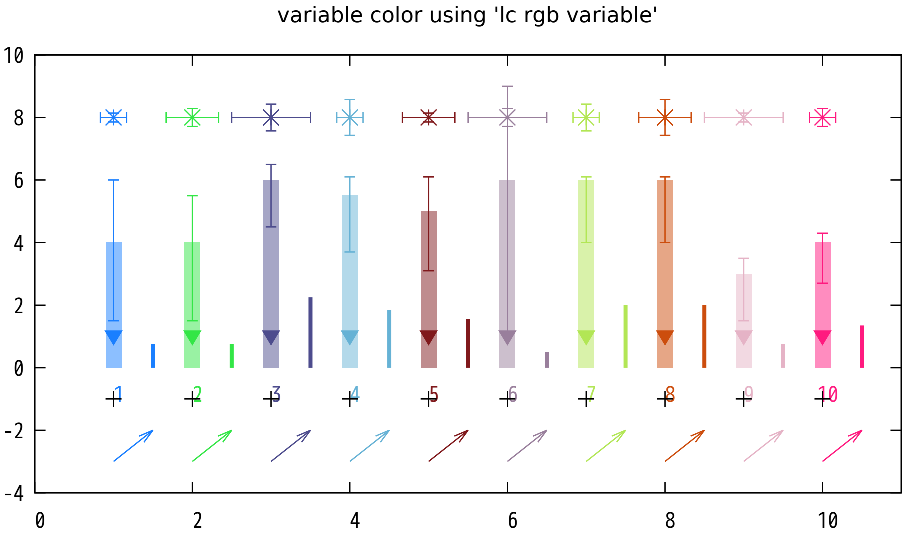
variable color boxerror, xyerrorbars, impulses, vectors, and labels
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10
1
2
3
4
5
6
7
8
9
10


variable color using 'lc palette z'
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10
1
2
3
4
5
6
7
8
9
10

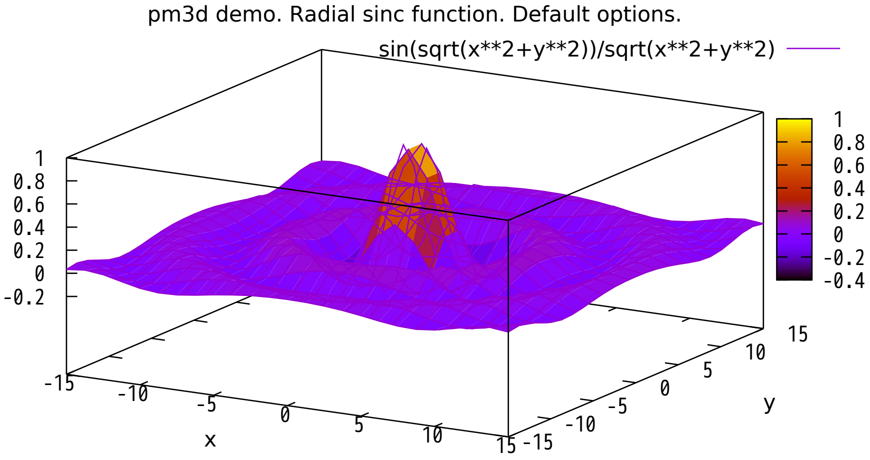

variable color using 'lc palette z'
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10
1
2
3
4
5
6
7
8
9
10
10
9
8
7
6
5
4
3
2
1



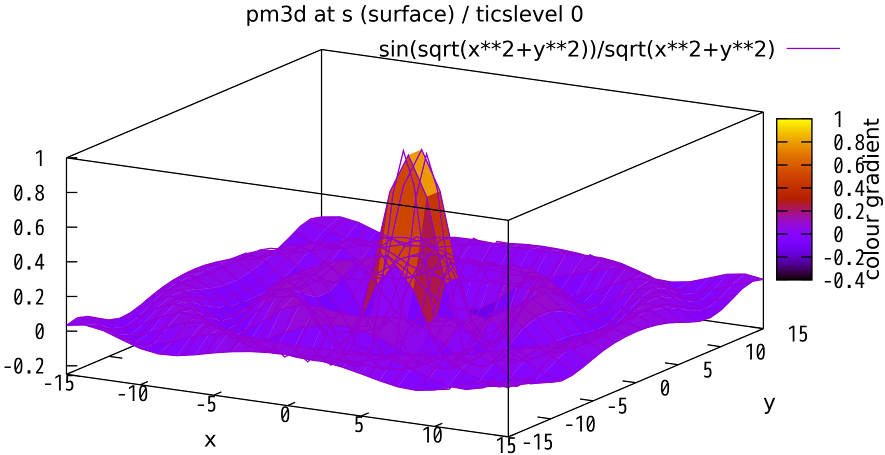
variable color using 'lc rgb variable'
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10



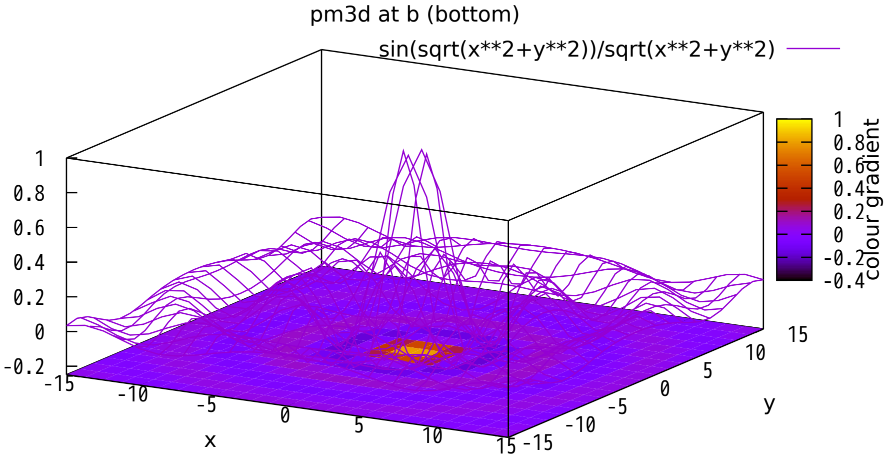
variable color using 'lc rgb variable'
10
8
6
4
2
0
-2
-4
0
2
4
6
8
10
1
2
3
4
5
6
7
8
9
10



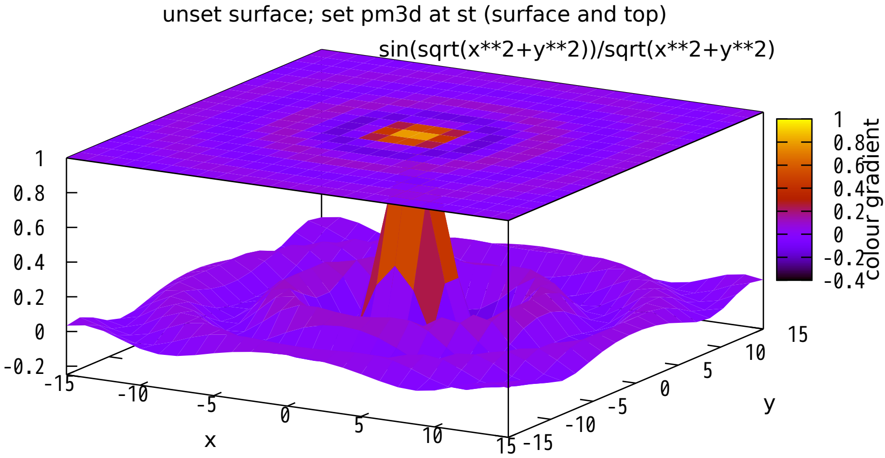
pm3d demo. Radial sinc function. Default options.
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-15
-10
-5
0
5
10
15
x
y

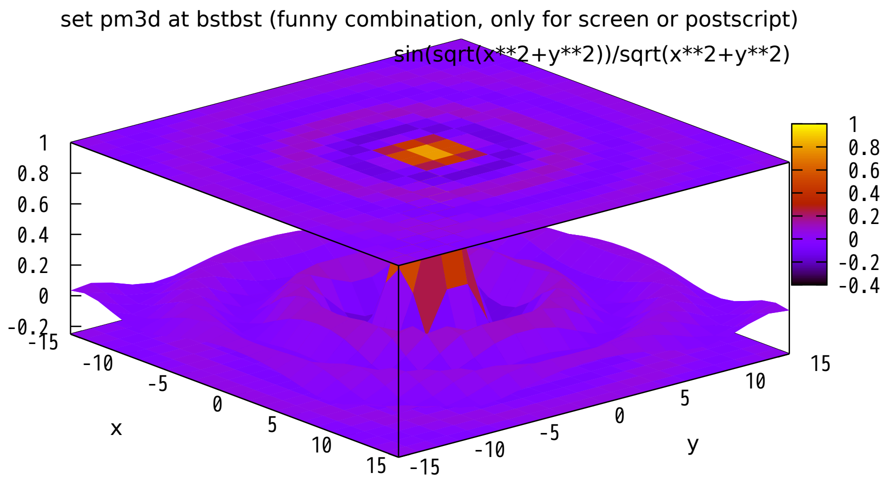


pm3d at s (surface) / ticslevel 0
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
1
0.8
0.6
0.4
0.2
0
-0.2
-15
-10
-5
0
5
10
15
x
-15
-10
-5
0
5
10
15
y
colour gradient
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

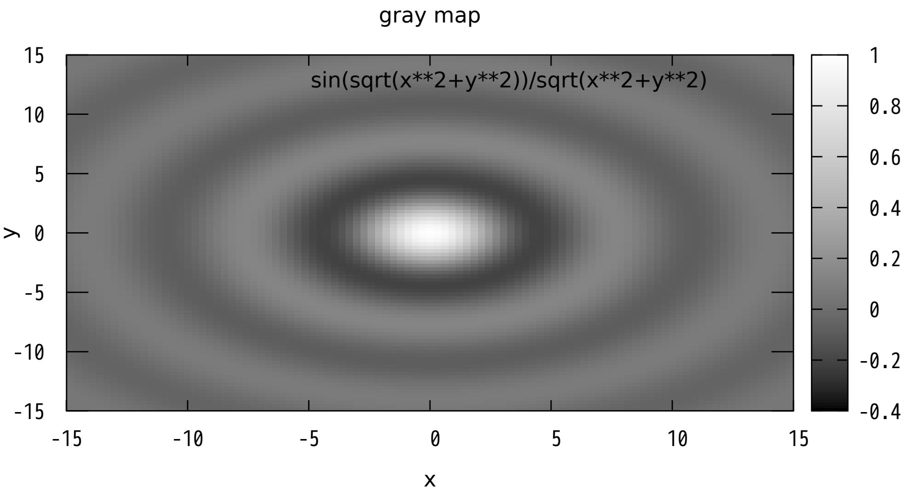


pm3d at b (bottom)
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
colour gradient
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
x
y
-15
-10
-5
0
5
10
15

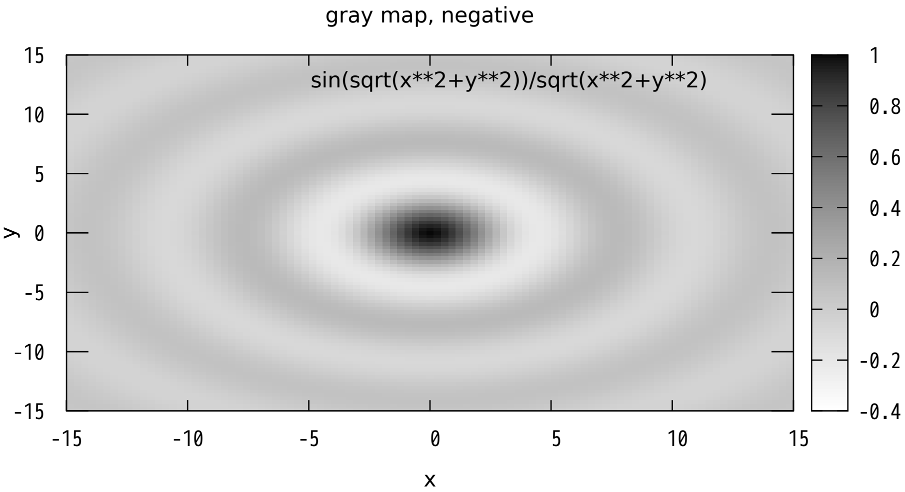

unset surface; set pm3d at st (surface and top)
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
colour gradient
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
x
y
-15
-10
-5
0
5
10
15



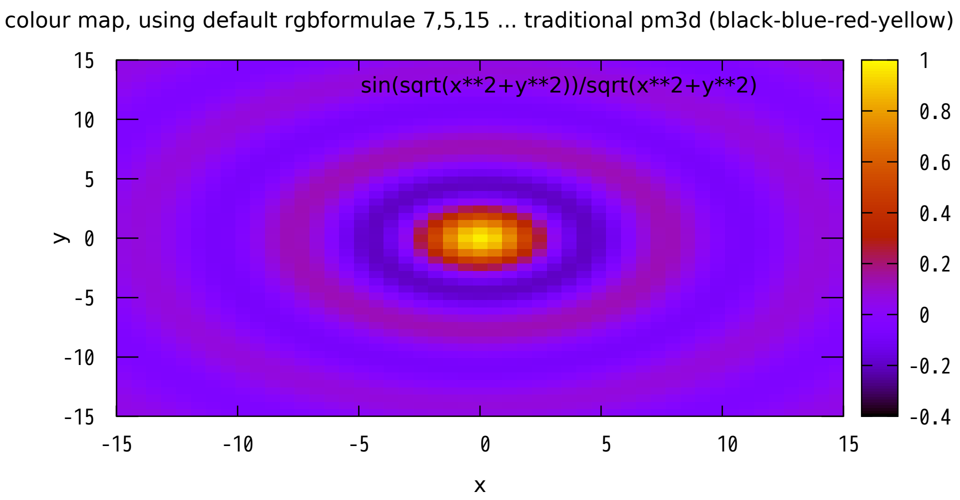
set pm3d at bstbst (funny combination, only for screen or postscript)
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-15
-10
-5
0
5
10
15
x
y

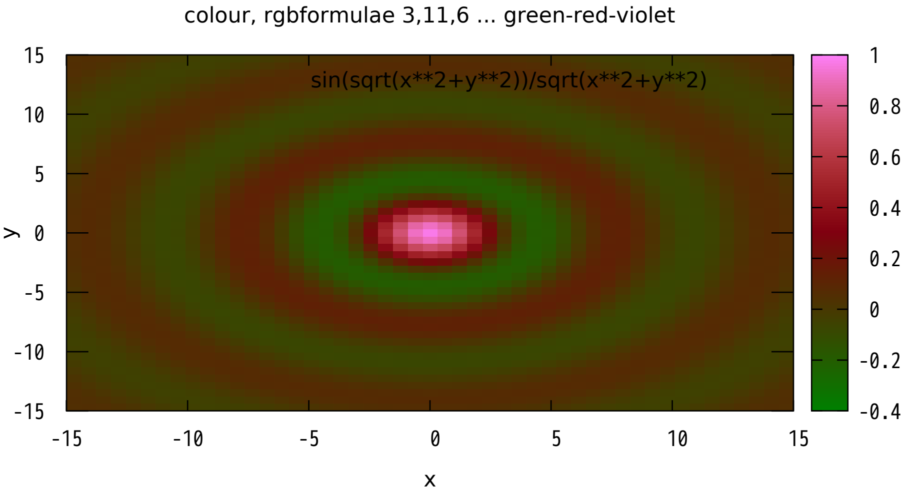


gray map
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

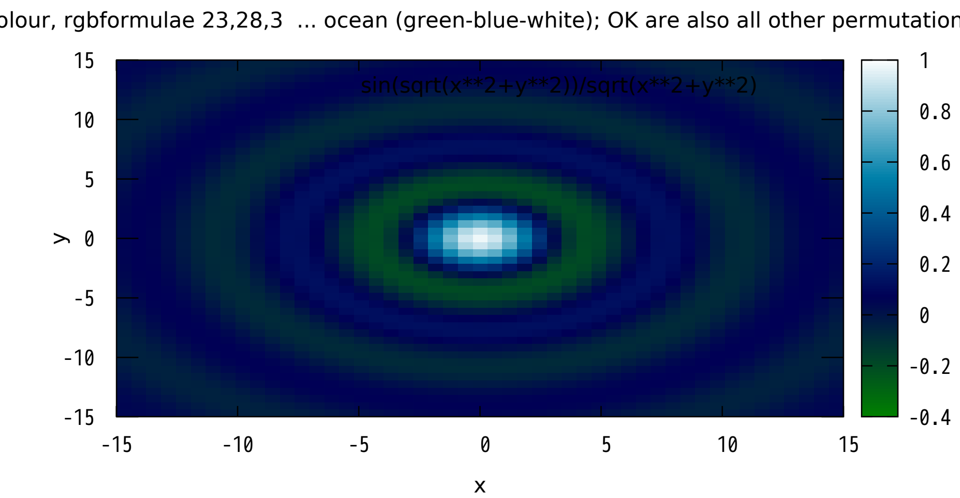


gray map, negative
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

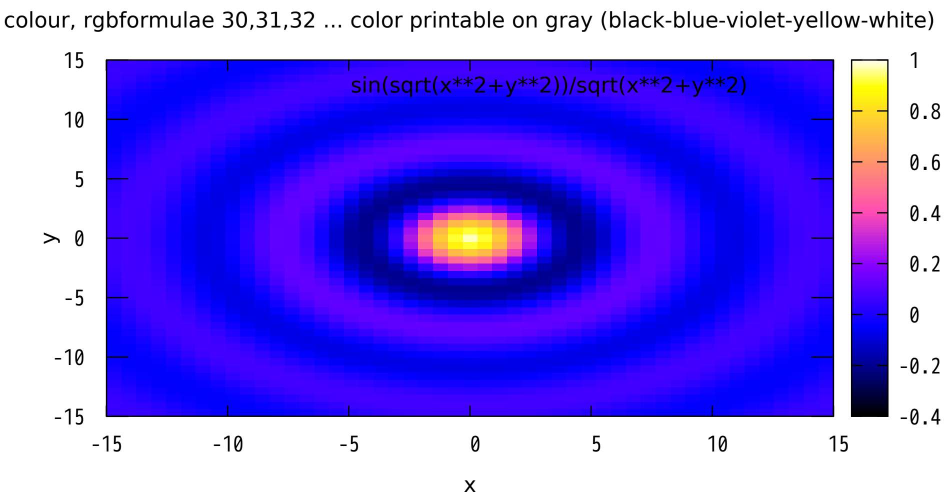

colour map, using default rgbformulae 7,5,15 ... traditional pm3d (black-blue-red-yellow)
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

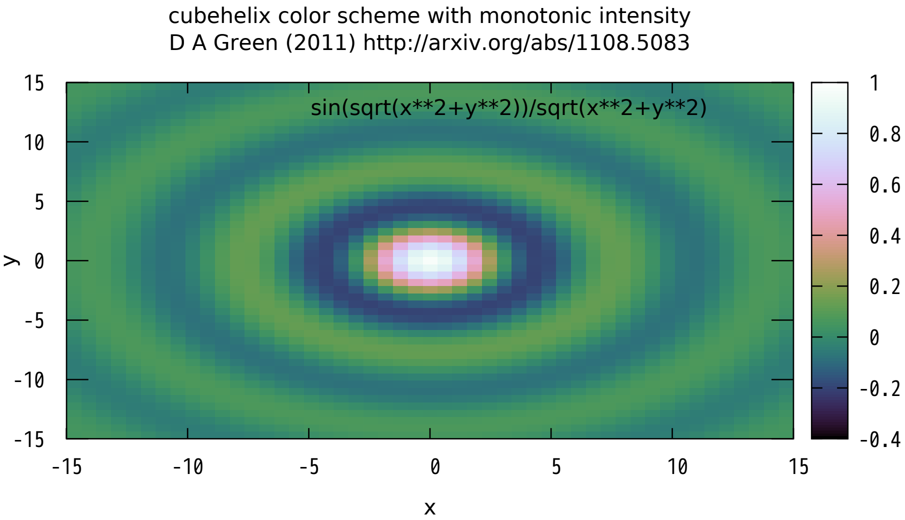


colour, rgbformulae 3,11,6 ... green-red-violet
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

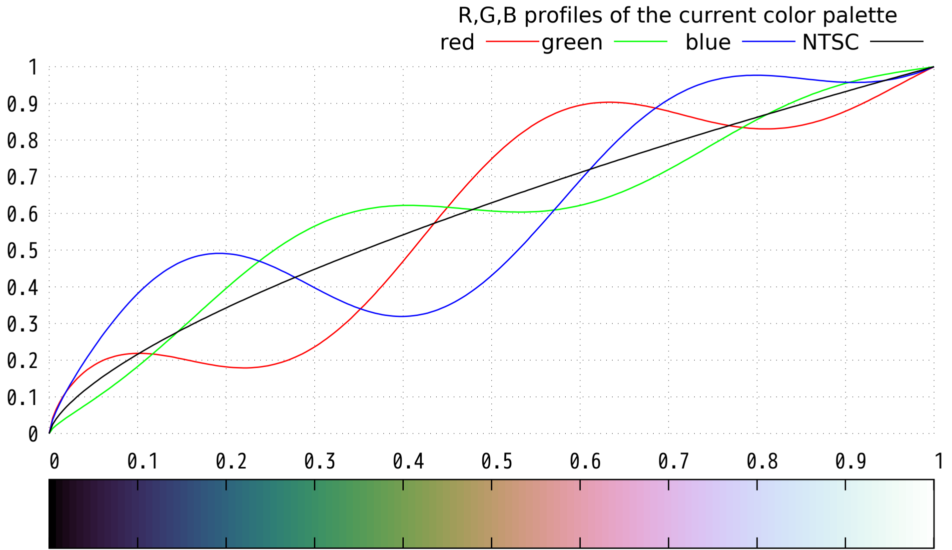


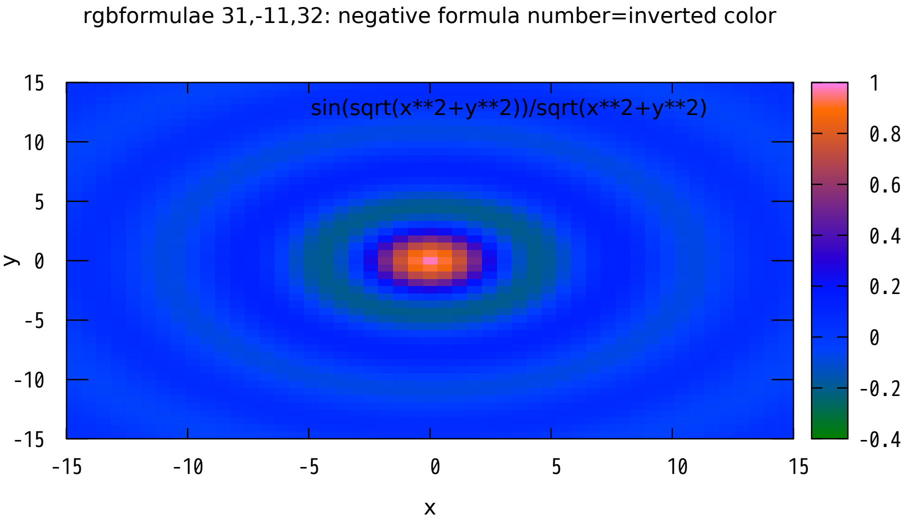
olour, rgbformulae 23,28,3 ... ocean (green-blue-white); OK are also all other permutation
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

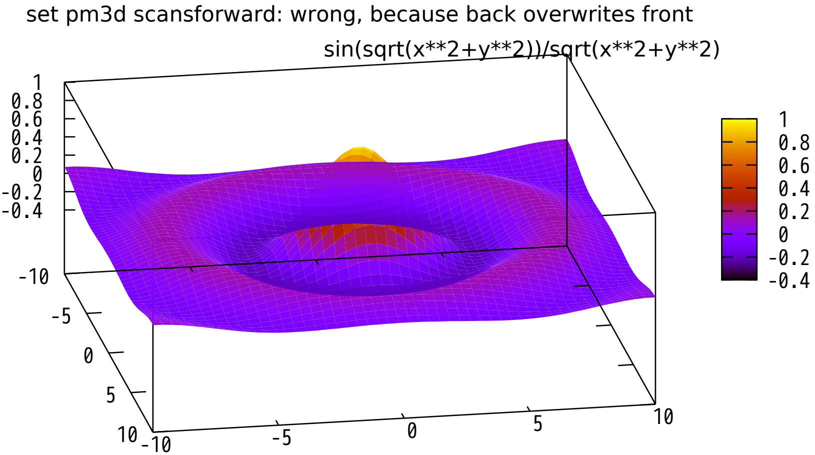

colour, rgbformulae 30,31,32 ... color printable on gray (black-blue-violet-yellow-white)
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

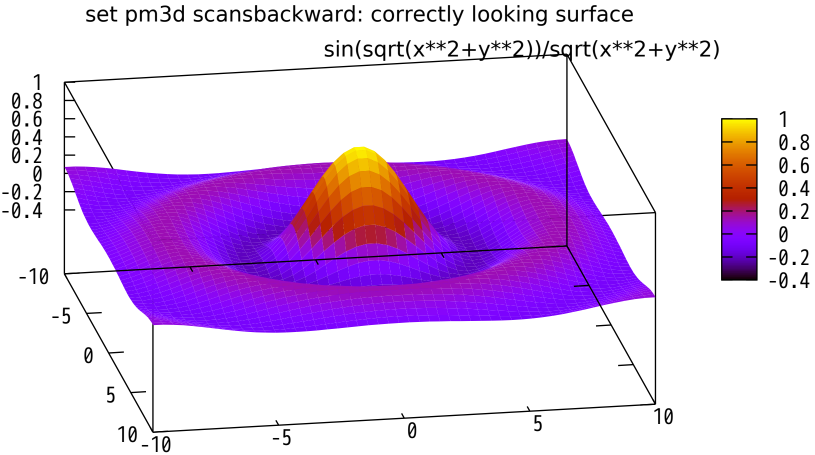


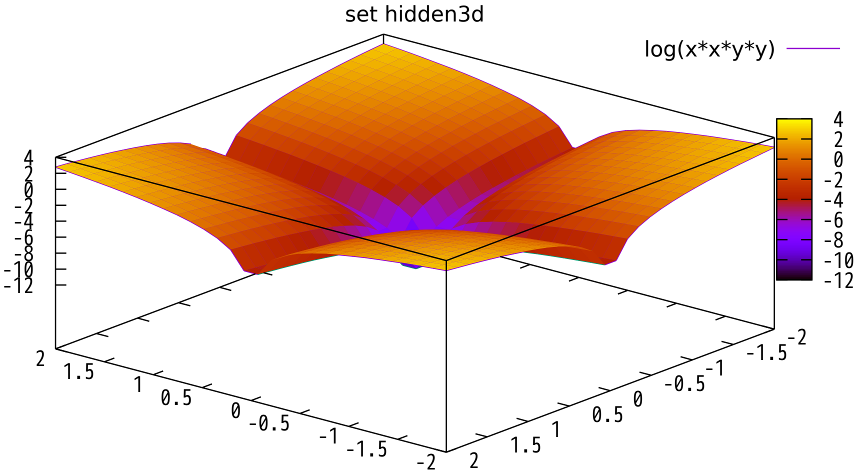
cubehelix color scheme with monotonic intensity
D A Green (2011) http://arxiv.org/abs/1108.5083
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4


R,G,B profiles of the current color palette
red
green
blue
NTSC
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

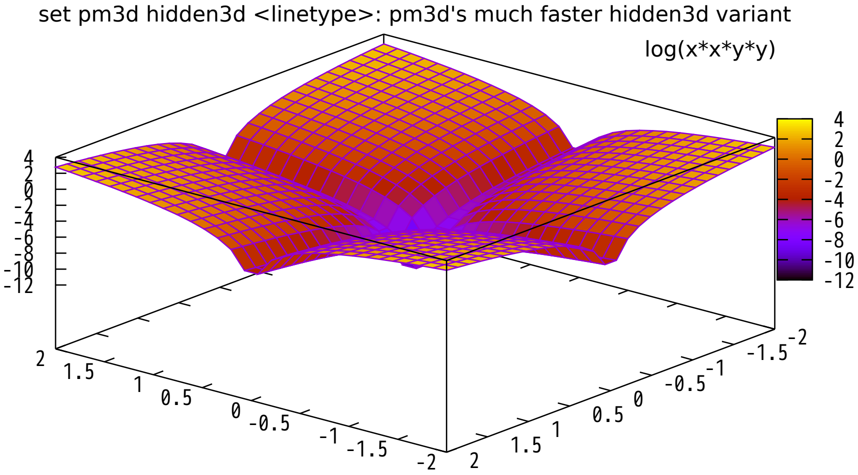

rgbformulae 31,-11,32: negative formula number=inverted color
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
15
10
5
0
-5
-10
-15
y
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

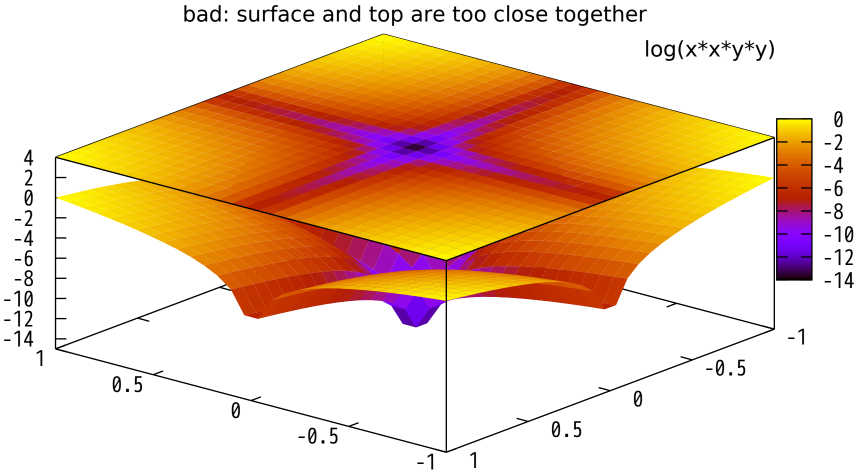

set pm3d scansforward: wrong, because back overwrites front
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
-10
-5
0
5
10
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4


set pm3d scansbackward: correctly looking surface
sin(sqrt(x**2+y**2))/sqrt(x**2+y**2)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
-10
-5
0
5
10
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4

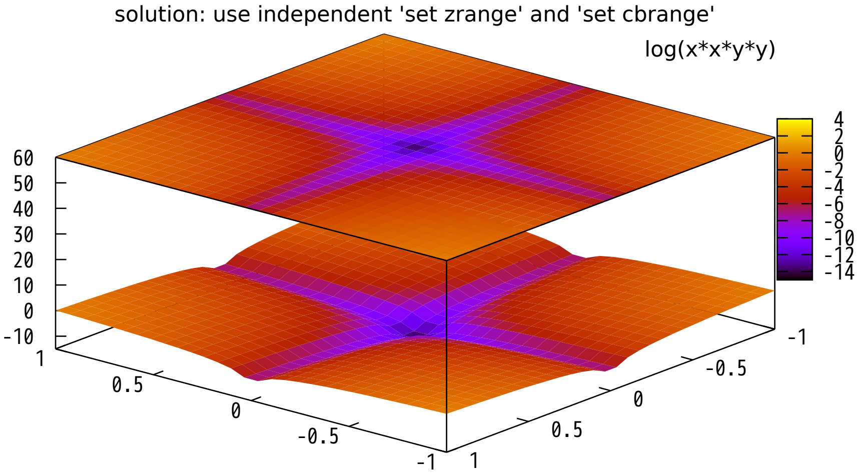


set hidden3d
log(x*x*y*y)
4
2
0
-2
-4
-6
-8
-10
-12
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2

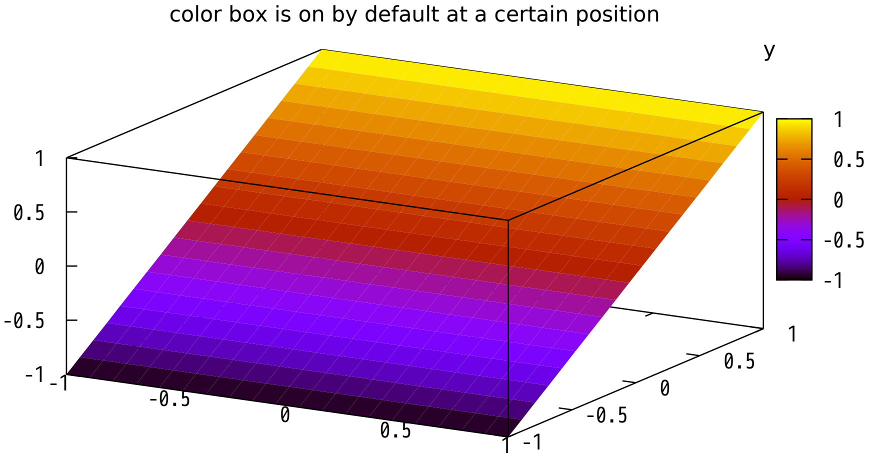

set pm3d hidden3d <linetype>: pm3d's much faster hidden3d variant
log(x*x*y*y)
4
2
0
-2
-4
-6
-8
-10
-12
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2



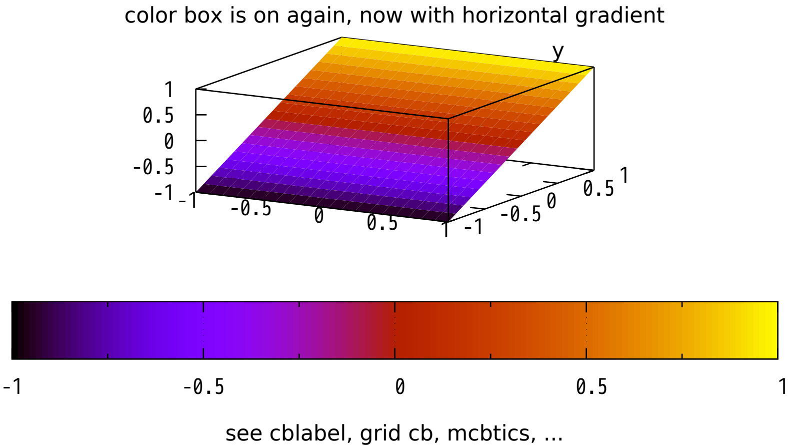
bad: surface and top are too close together
log(x*x*y*y)
0
-2
-4
-6
-8
-10
-12
-14
4
2
0
-2
-4
-6
-8
-10
-12
-14
1
0.5
0
-0.5
-1
1
0.5
0
-0.5
-1



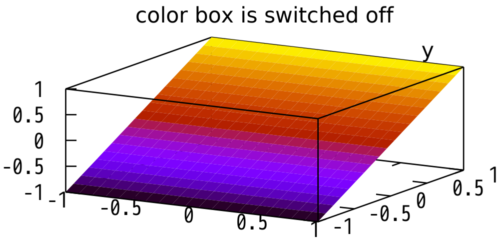
solution: use independent 'set zrange' and 'set cbrange'
log(x*x*y*y)
60
50
40
30
20
10
0
-10
1
0.5
0
-0.5
-1
1
0.5
0
-0.5
-1
4
2
0
-2
-4
-6
-8
-10
-12
-14

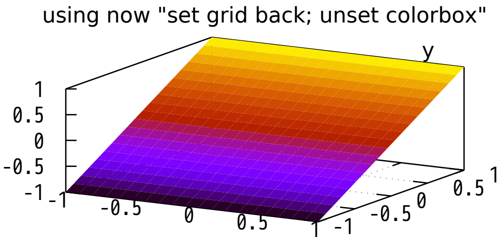


color box is on by default at a certain position
y
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
-1
-0.5
0
0.5
1
1
0.5
0
-0.5
-1

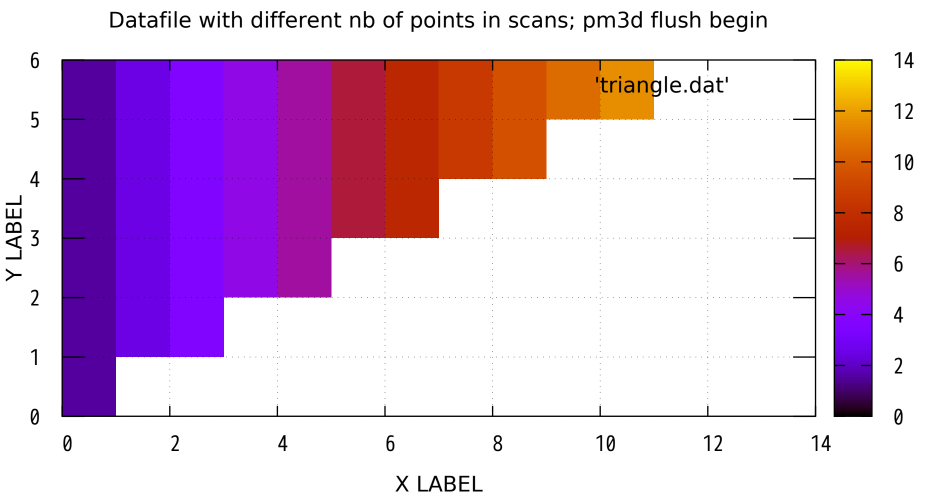


color box is on again, now with horizontal gradient
y
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
-1
-0.5
0
0.5
1
-1
-0.5
0
0.5
1
see cblabel, grid cb, mcbtics, ...

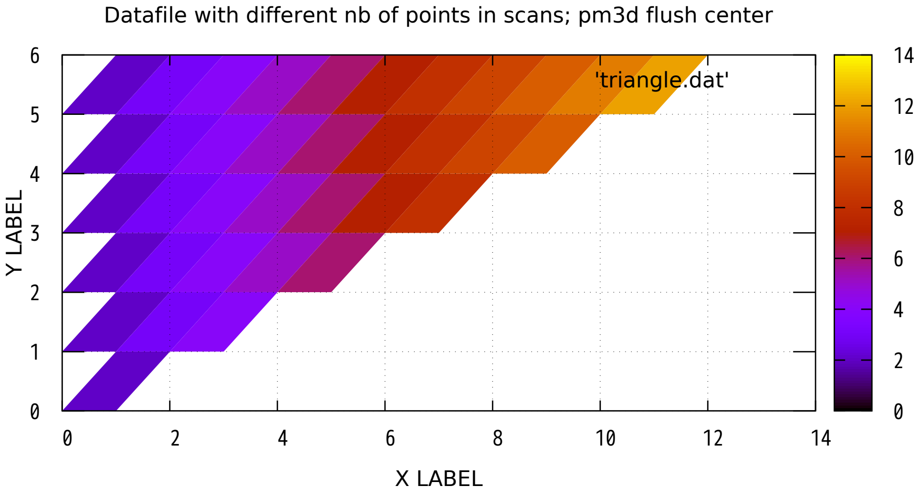

color box is switched off
y
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
-1
-0.5
0
0.5
1



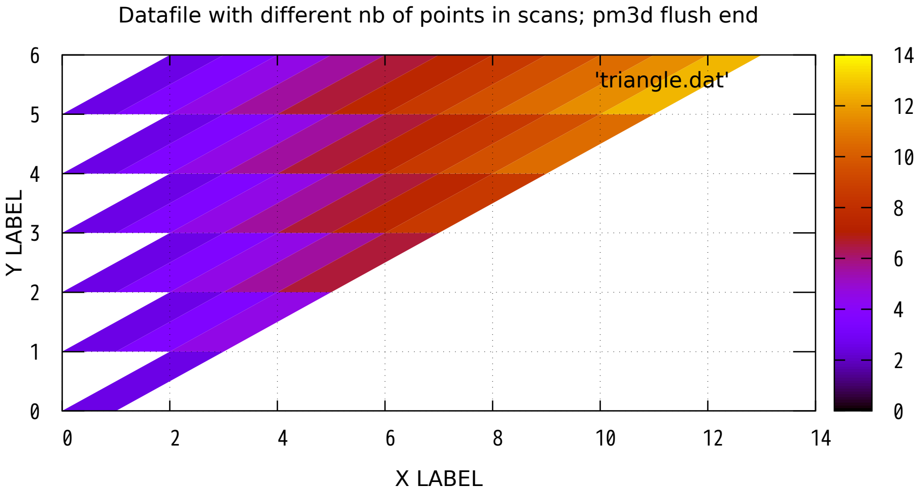
using now "set grid back; unset colorbox"
y
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
-1
-0.5
0
0.5
1



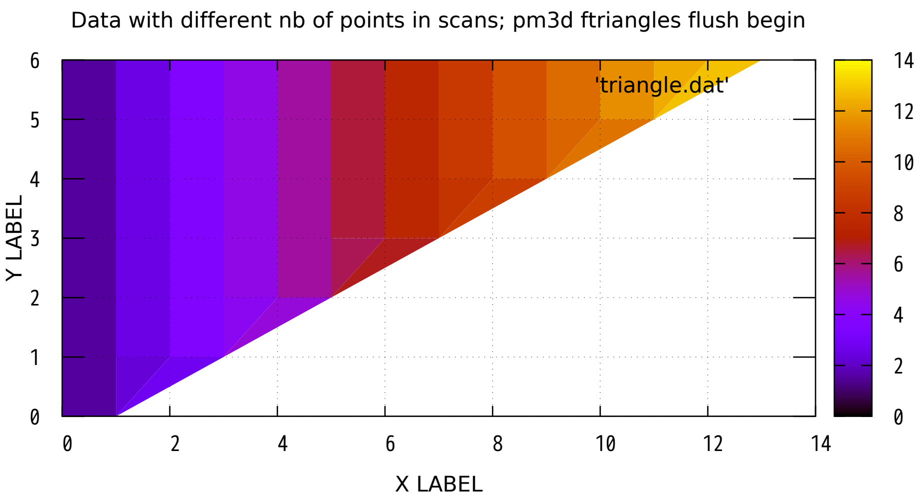
Datafile with different nb of points in scans; pm3d flush begin
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14



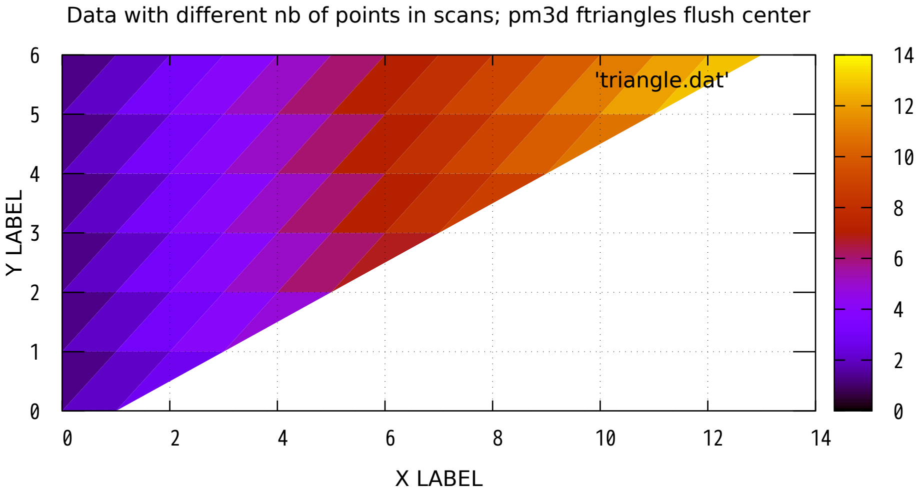
Datafile with different nb of points in scans; pm3d flush center
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

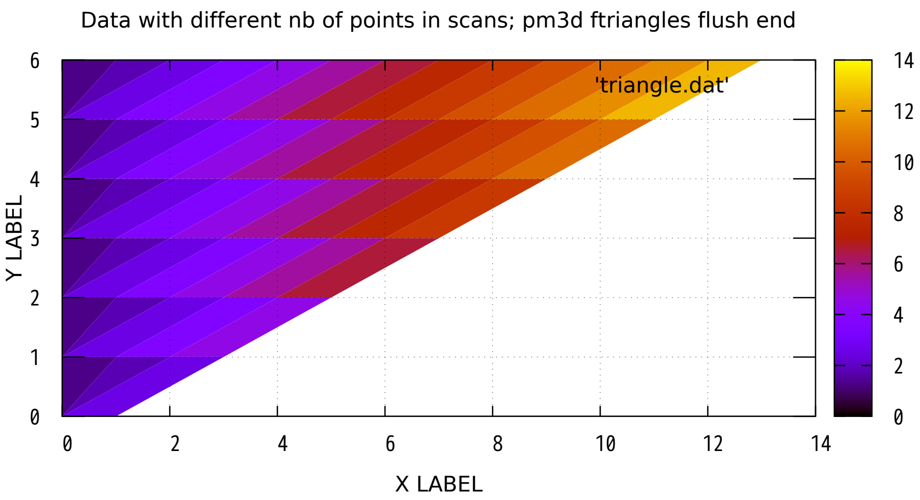


Datafile with different nb of points in scans; pm3d flush end
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

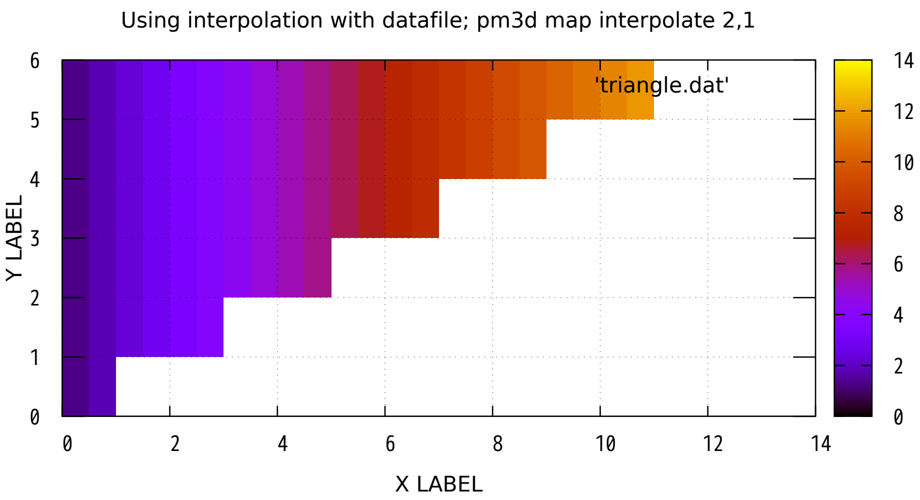


Data with different nb of points in scans; pm3d ftriangles flush begin
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

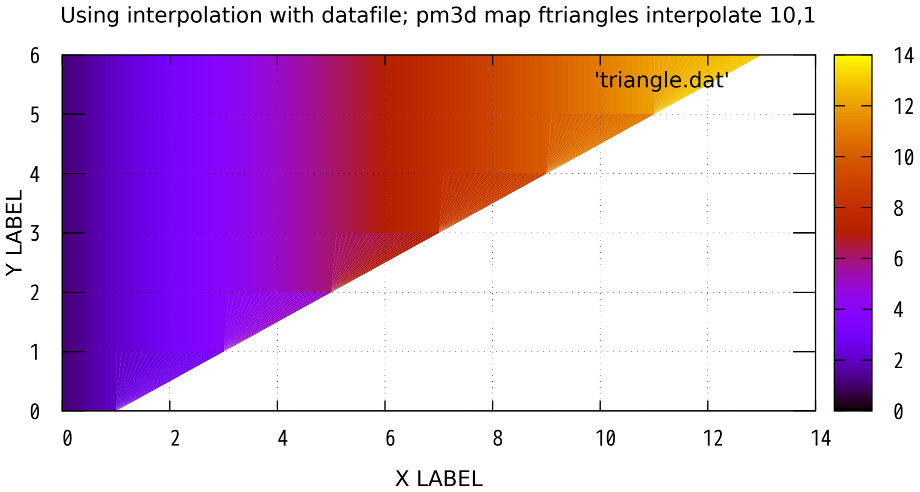

Data with different nb of points in scans; pm3d ftriangles flush center
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

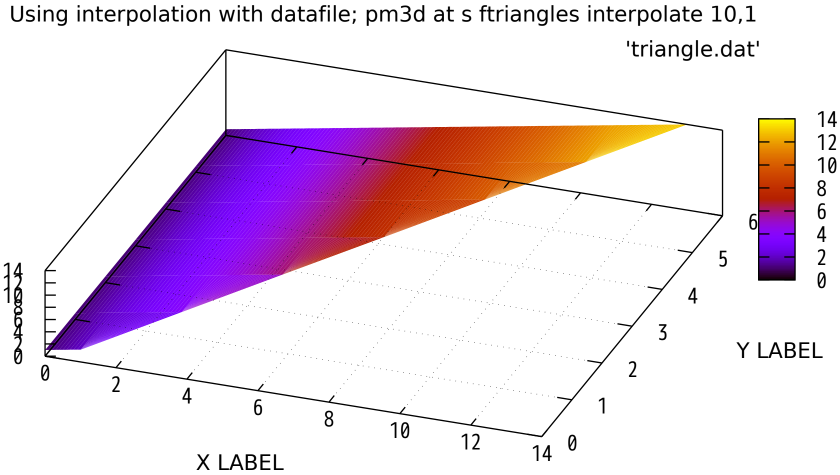


Data with different nb of points in scans; pm3d ftriangles flush end
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

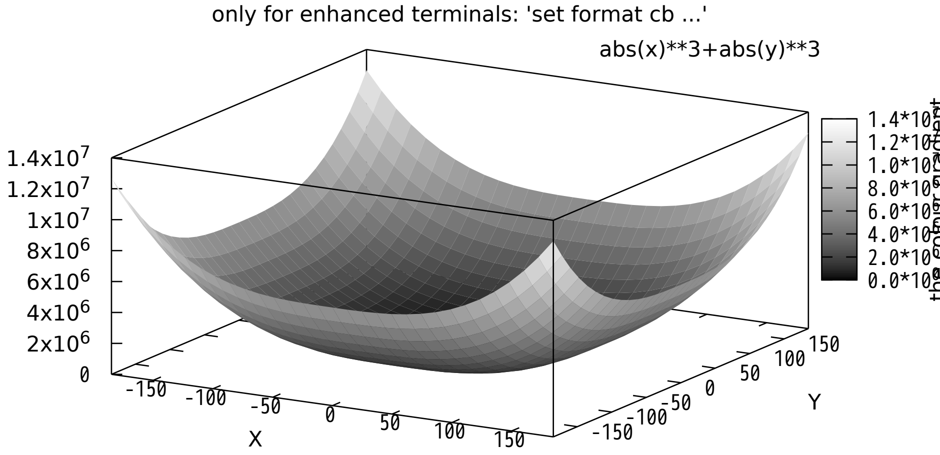


Using interpolation with datafile; pm3d map interpolate 2,1
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14

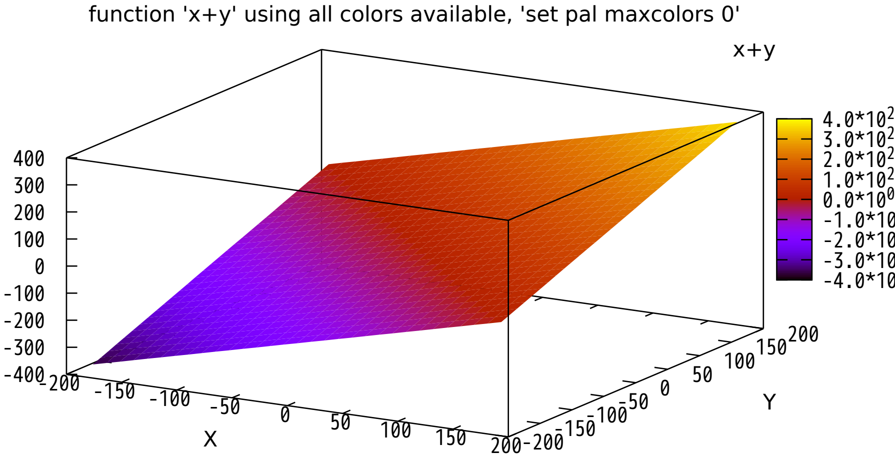

Using interpolation with datafile; pm3d map ftriangles interpolate 10,1
'triangle.dat'
Y LABEL
X LABEL
0
1
2
3
4
5
6
0
2
4
6
8
10
12
14
0
2
4
6
8
10
12
14



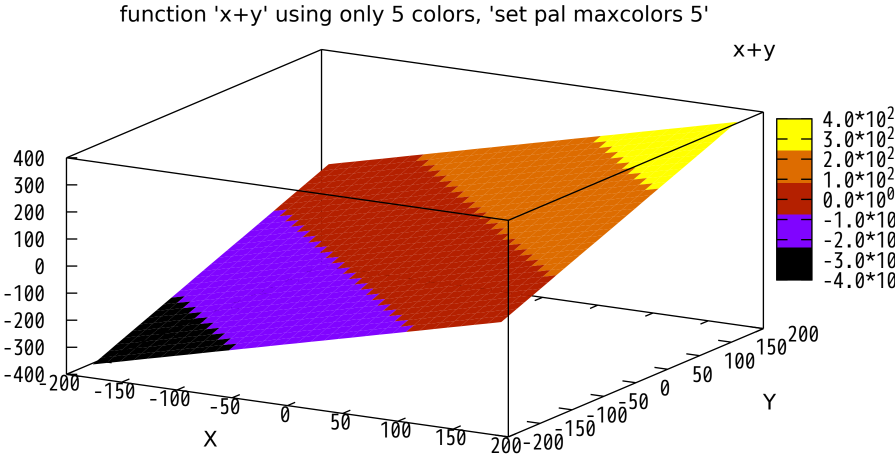
Using interpolation with datafile; pm3d at s ftriangles interpolate 10,1
'triangle.dat'
X LABEL
Y LABEL
0
2
4
6
8
10
12
14



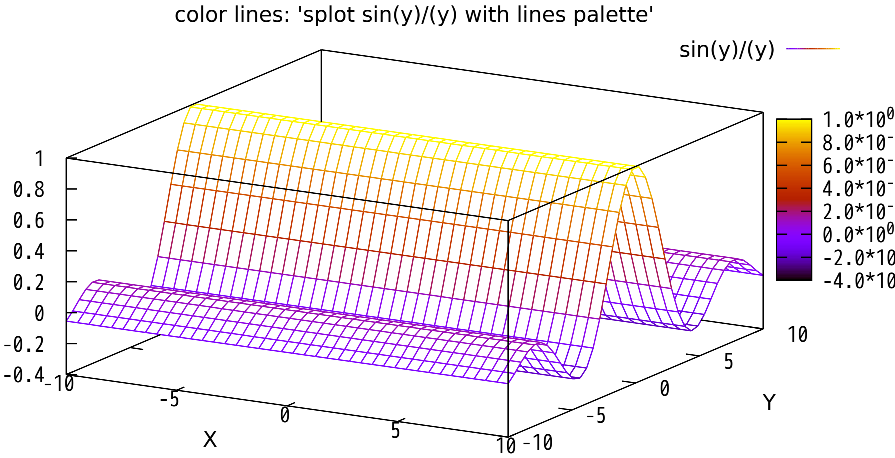
only for enhanced terminals: 'set format cb ...'
abs(x)**3+abs(y)**3
1.4x10^7
1.2x10^7
1x10^7
8x10^6
6x10^6
4x10^6
2x10^6
0
-150
-100
-50
0
50
100
150
X
-150
-100
-50
0
50
100
150
Y
1.4*10
1.2*10
1.0*10
8.0*10
6.0*10
4.0*10
2.0*10
0.0*10



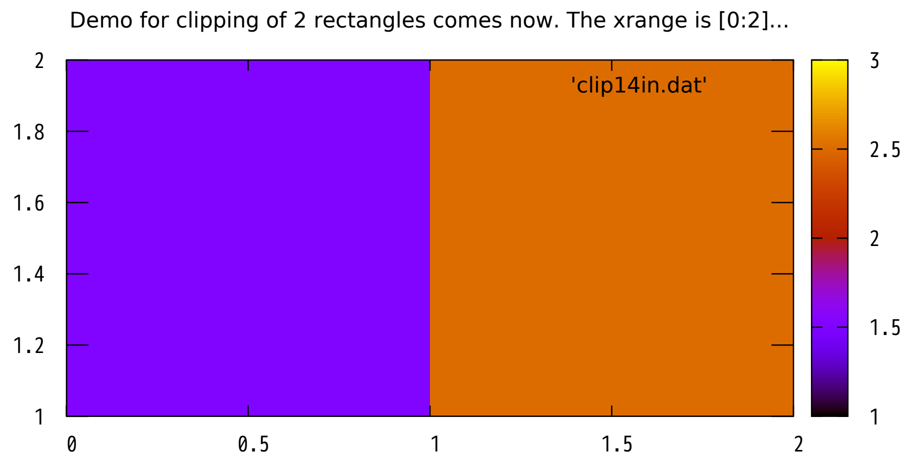
function 'x+y' using all colors available, 'set pal maxcolors 0'
x+y
400
300
200
100
0
-100
-200
-300
-400
-200
-150
-100
-50
0
50
100
150
200
X
-200
-150
-100
-50
0
50
100
150
200
Y
4.0*10^2
3.0*10^2
2.0*10^2
1.0*10^2
0.0*10^0



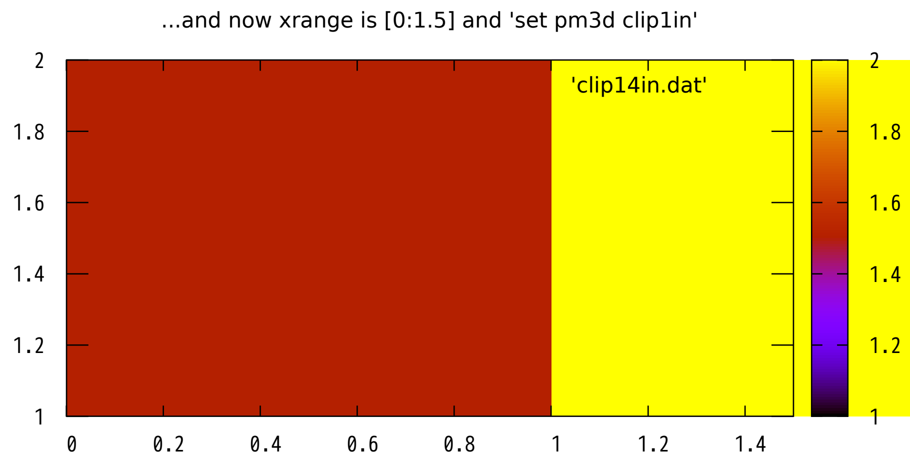
function 'x+y' using only 5 colors, 'set pal maxcolors 5'
x+y
400
300
200
100
0
-100
-200
-300
-400
-200
-150
-100
-50
0
50
100
150
200
X
-200
-150
-100
-50
0
50
100
150
200
Y

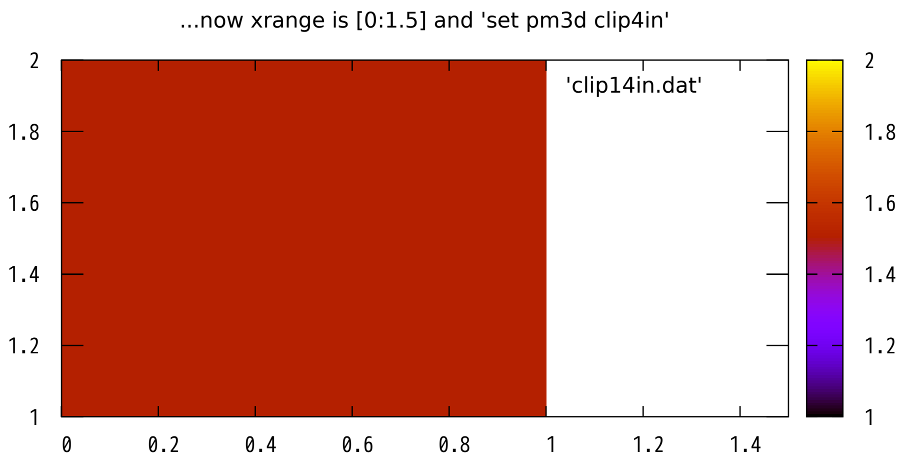


color lines: 'splot sin(y)/(y) with lines palette'
sin(y)/(y)
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10
X
-10
-5
0
5
10
Y
1.0*10^0
8.0*10^-
6.0*10^-
4.0*10^-
2.0*10^-
0.0*10^0
-2.0*10
-4.0*10

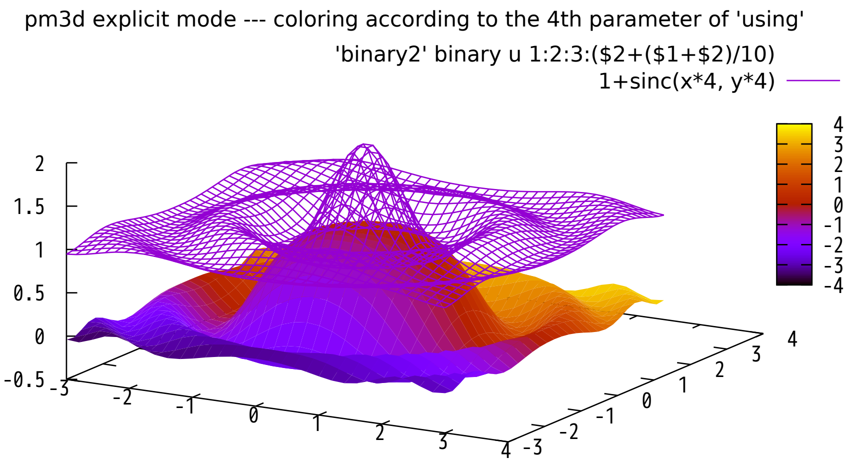


Demo for clipping of 2 rectangles comes now. The xrange is [0:2]...
'clip14in.dat'
2
1.8
1.6
1.4
1.2
1
0
0.5
1
1.5
2
3
2.5
2
1.5
1

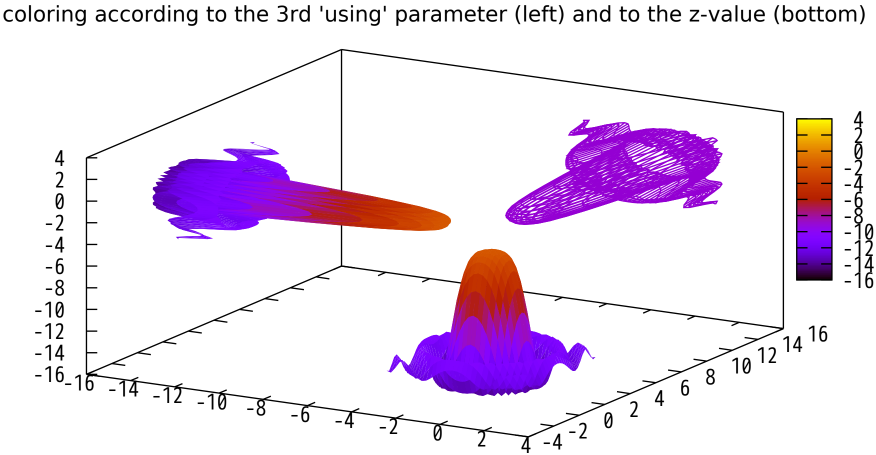

...and now xrange is [0:1.5] and 'set pm3d clip1in'
'clip14in.dat'
2
1.8
1.6
1.4
1.2
1
0
0.2
0.4
0.6
0.8
1
1.2
1.4
2
1.8
1.6
1.4
1.2
1



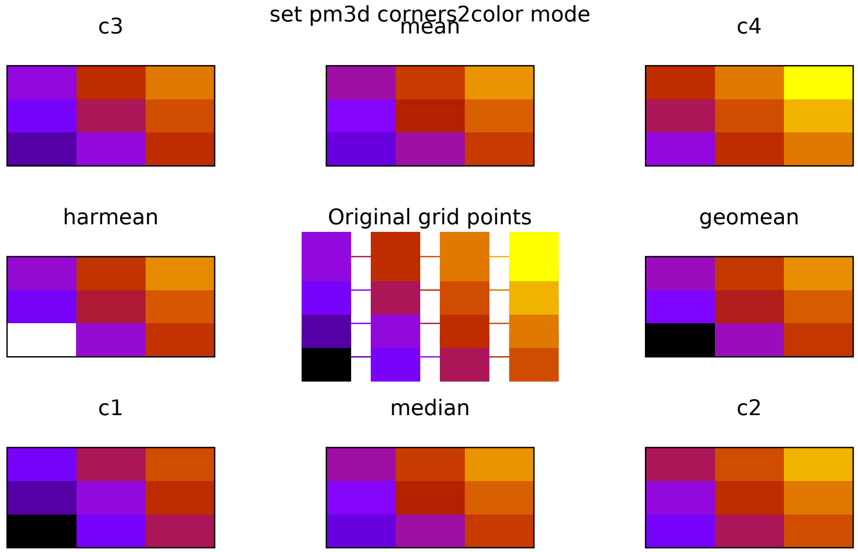
...now xrange is [0:1.5] and 'set pm3d clip4in'
'clip14in.dat'
2
1.8
1.6
1.4
1.2
1
0
0.2
0.4
0.6
0.8
1
1.2
1.4

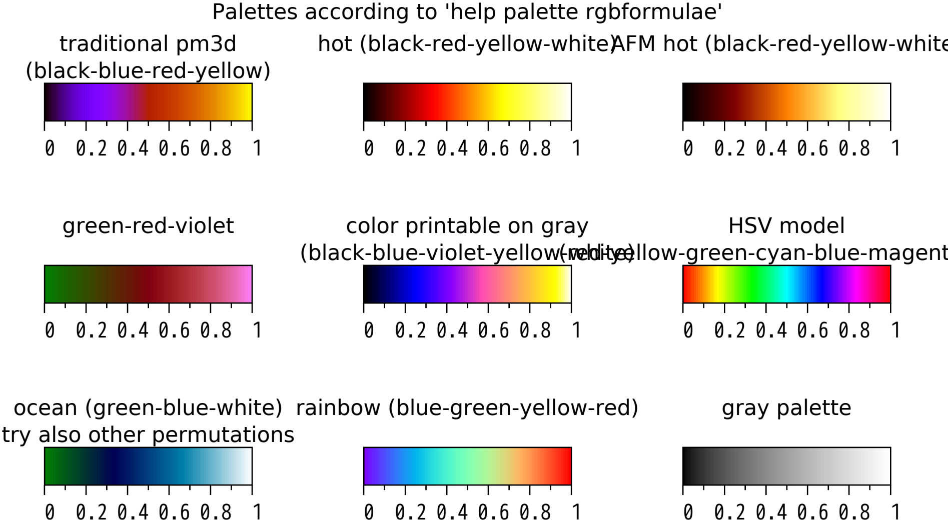


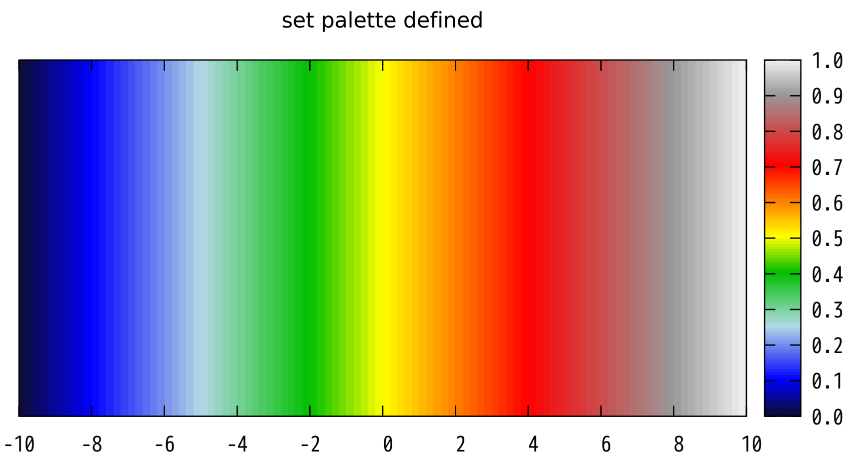
pm3d explicit mode --- coloring according to the 4th parameter of 'using'
'binary2' binary u 1:2:3:($2+($1+$2)/10)
1+sinc(x*4, y*4)
2
1.5
1
0.5
0
-0.5
-3
-2
-1
0
1
2
3
4
-3
-2
-1
0
1
2
3
4
4
3
2
1
0
-1
-2
-3
-4

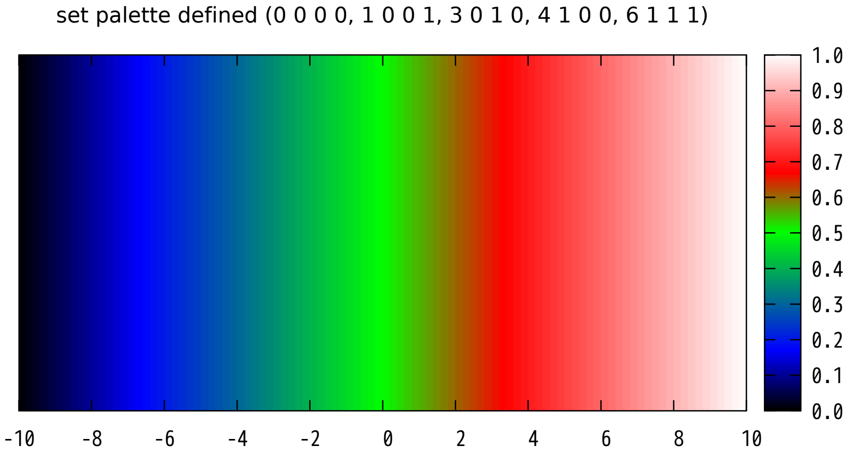


coloring according to the 3rd 'using' parameter (left) and to the z-value (bottom)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-16 -14 -12 -10 -8 -6 -4 -2 0 2 4
-4 -2 0 2 4 6 8 10 12 14 16

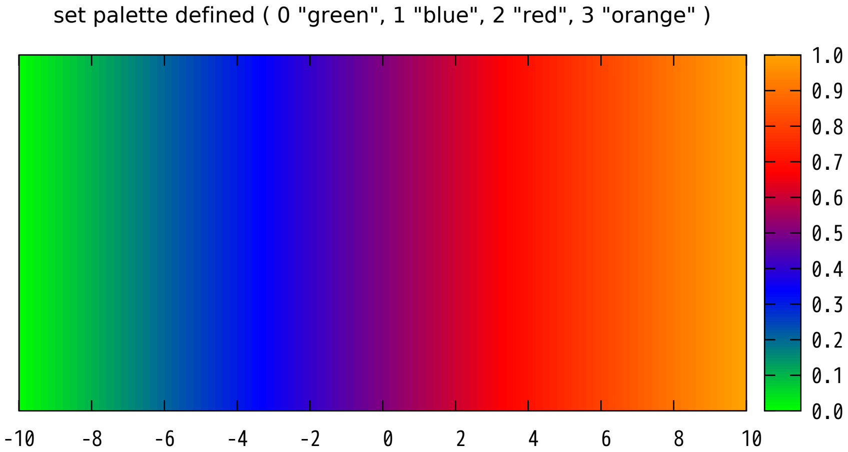

set pm3d corners2color mode
c3
mean
c4
harmean
Original grid points
geomean
c1
median
c2

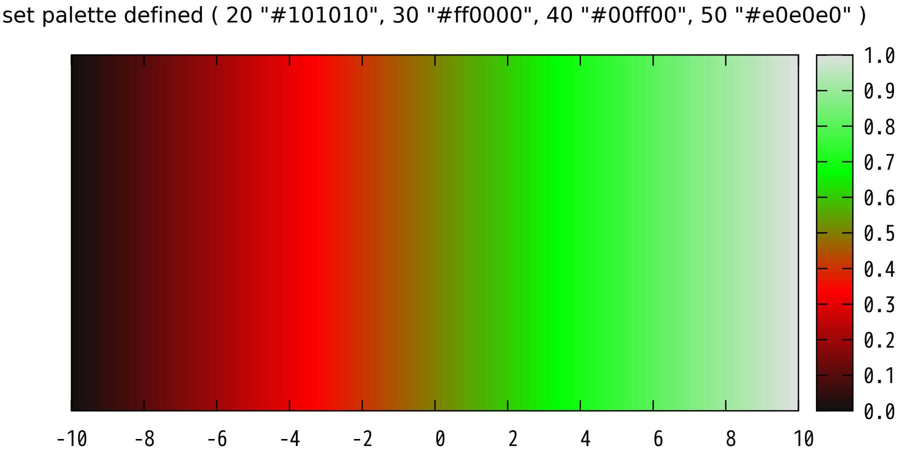

Palettes according to 'help palette rgbformulae'
traditional pm3d
(black-blue-red-yellow)
hot (black-red-yellow-white)
AFM hot (black-red-yellow-white
green-red-violet
color printable on gray
(black-blue-violet-yellow-white)
HSV model
(red-yellow-green-cyan-blue-magent
ocean (green-blue-white)
try also other permutations
rainbow (blue-green-yellow-red)
gray palette
0 0.2 0.4 0.6 0.8 1

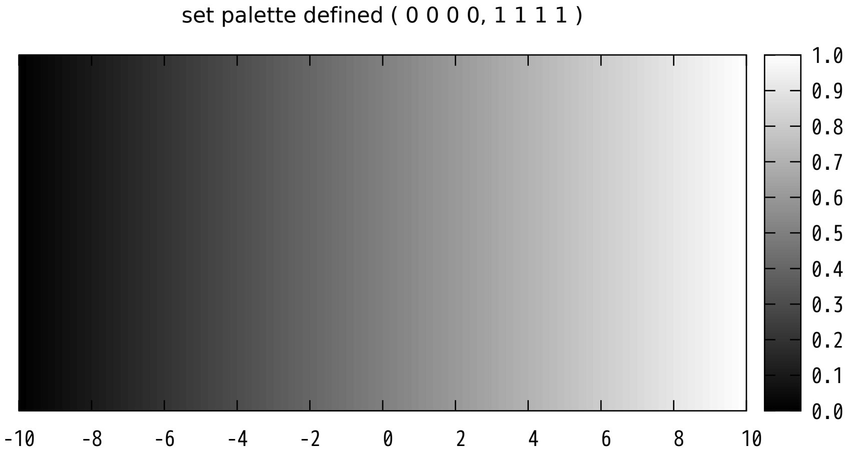

set palette defined
-10
-8
-6
-4
-2
0
2
4
6
8
10
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

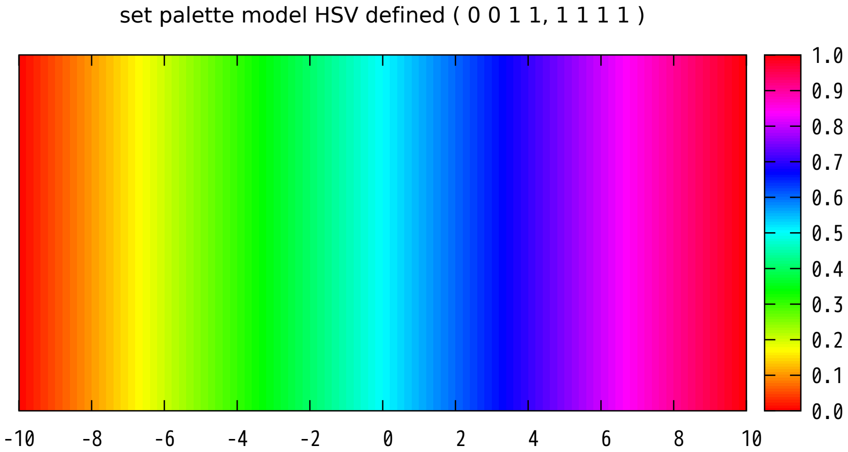


set palette defined (0 0 0 0, 1 0 0 1, 3 0 1 0, 4 1 0 0, 6 1 1 1)
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

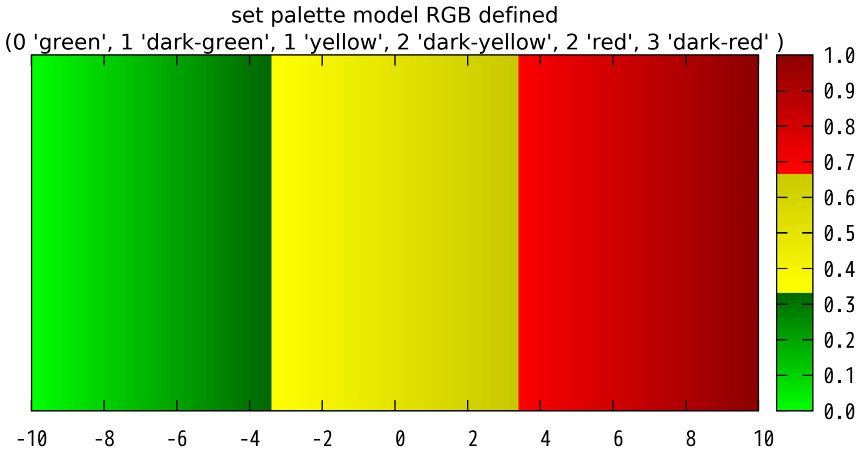

set palette defined (0 "green", 1 "blue", 2 "red", 3 "orange")
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

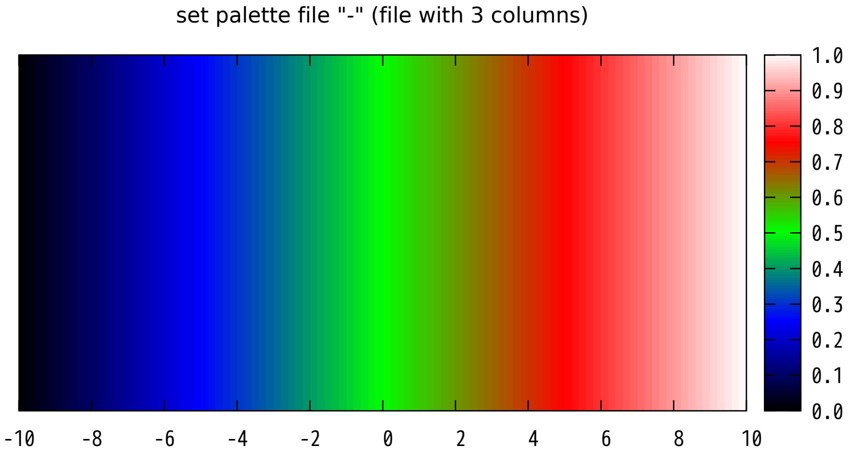

set palette defined (20 "#101010", 30 "#ff0000", 40 "#00ff00", 50 "#e0e0e0")
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0


set palette defined (0 0 0 0, 1 1 1 1)
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

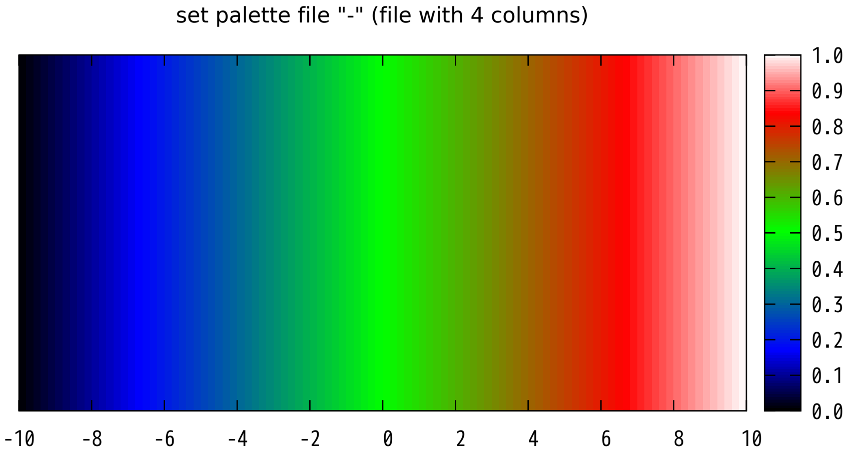


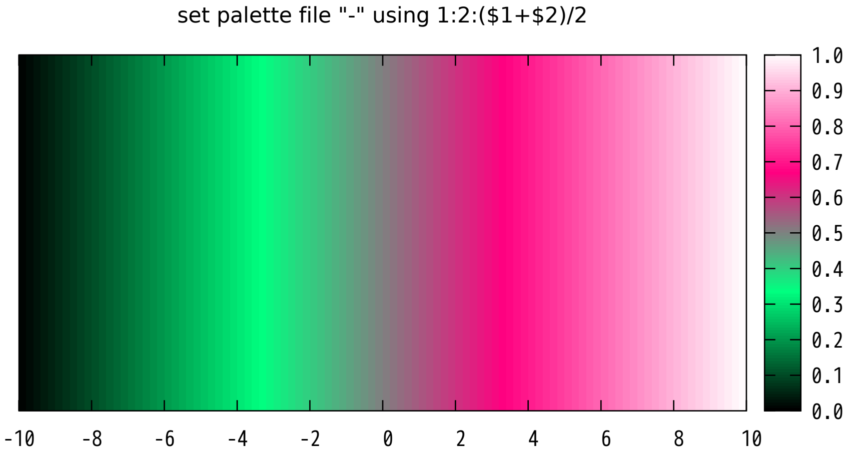
set palette model HSV defined (0 0 1 1, 1 1 1 1)
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

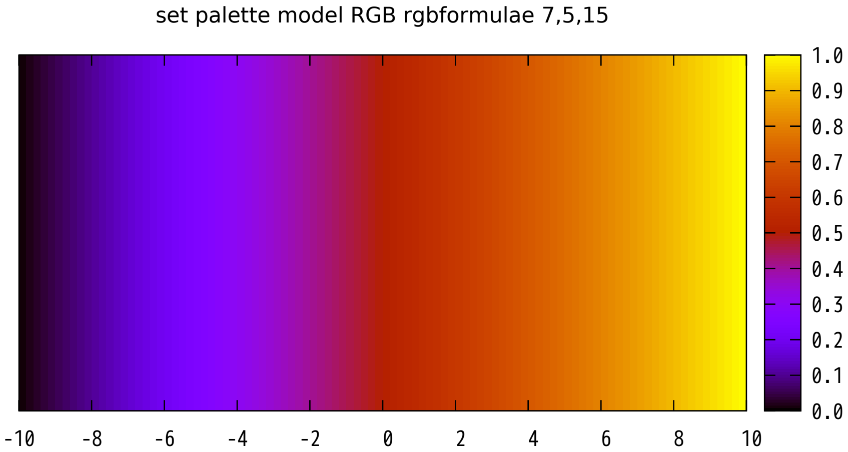

set palette model RGB defined
(0 'green', 1 'dark-green', 1 'yellow', 2 'dark-yellow', 2 'red', 3 'dark-red')
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

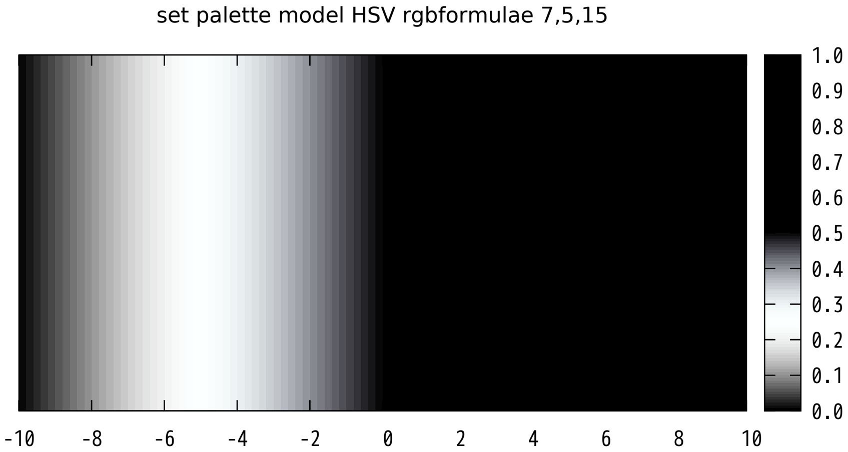


set palette file "-" (file with 3 columns)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-10
-8
-6
-4
-2
0
2
4
6
8
10

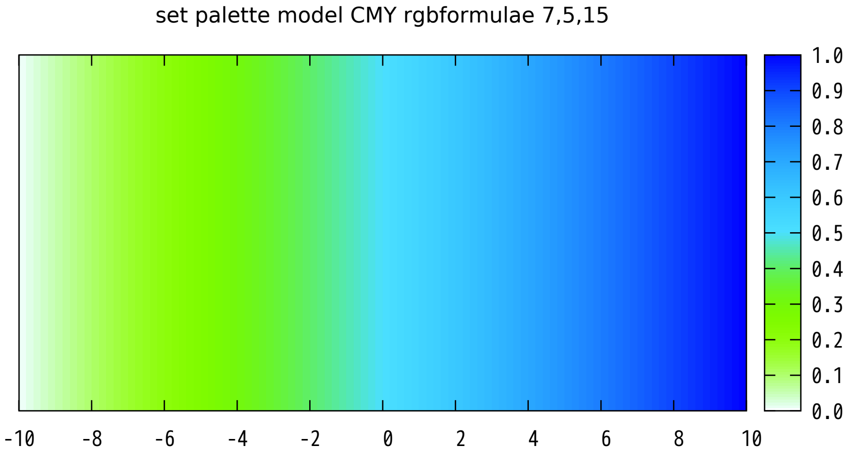

set palette file "-" (file with 4 columns)
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0


set palette file "-" using 1:2:($1+$2)/2
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

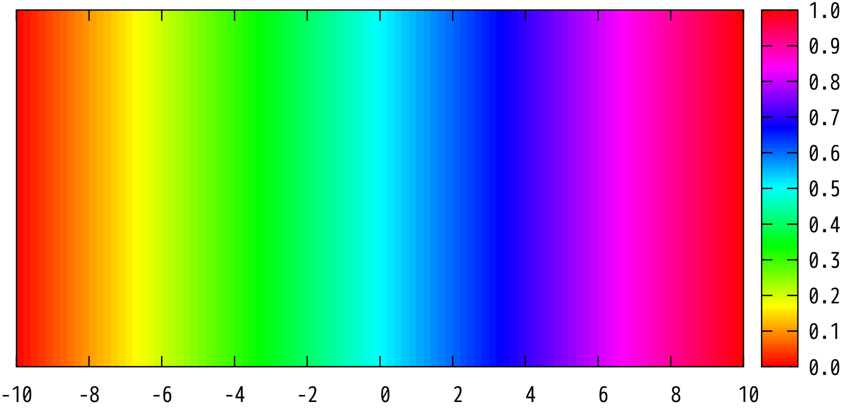

set palette model RGB rgbformulae 7,5,15
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

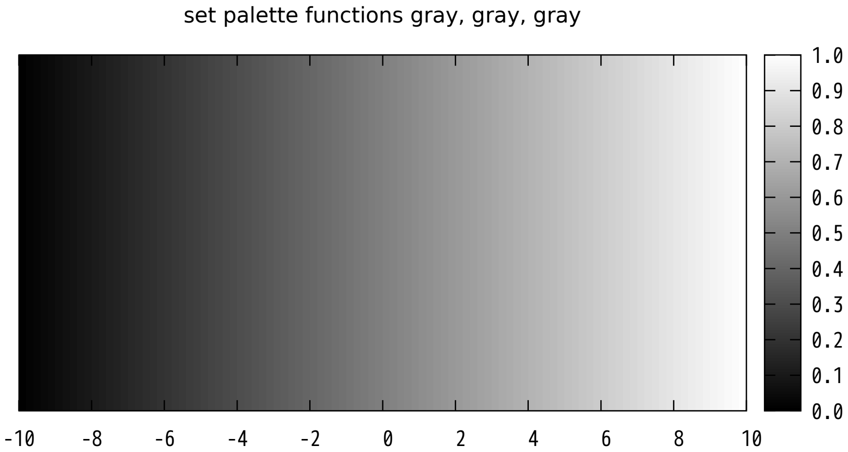


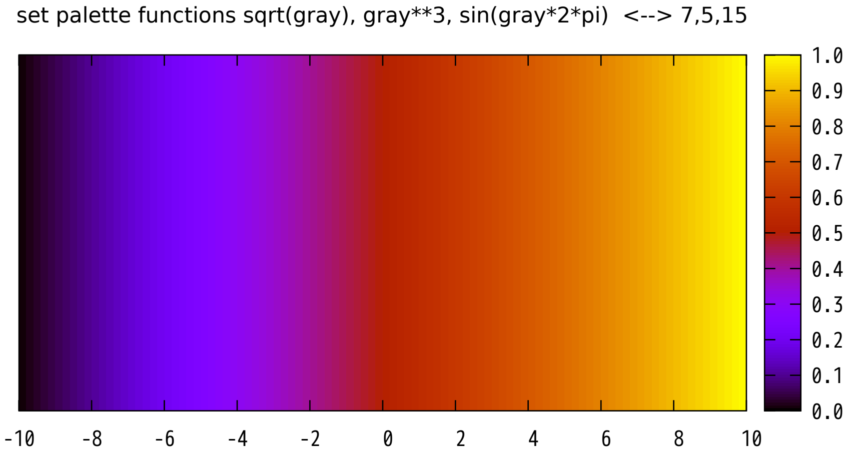
set palette model HSV rgbformulae 7,5,15
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0


set palette model CMY rgbformulae 7,5,15
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

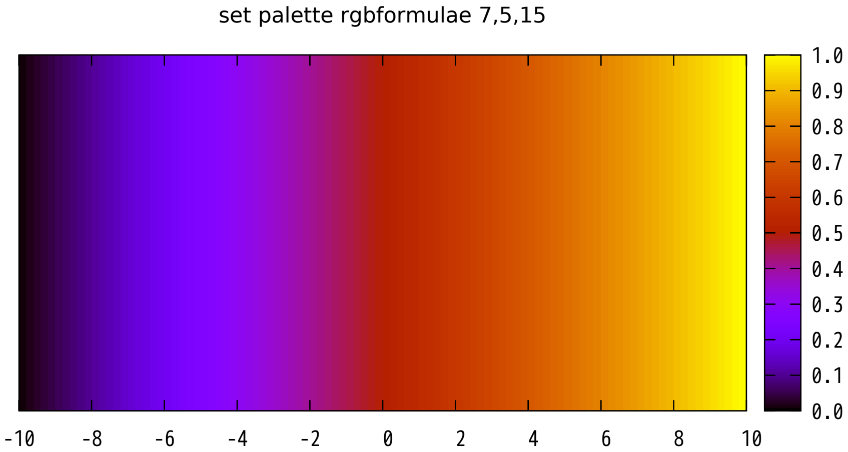
set palette model HSV rrgbformulae 3,2,2

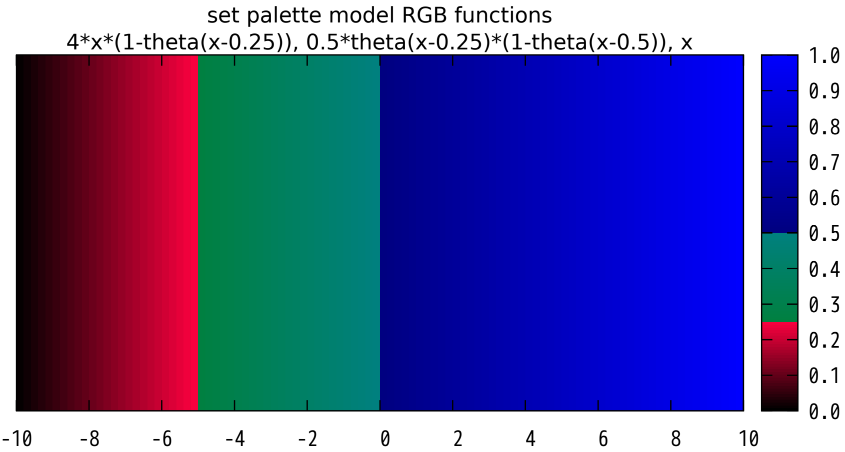



set palette functions gray, gray, gray
-10
-8
-6
-4
-2
0
2
4
6
8
10
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

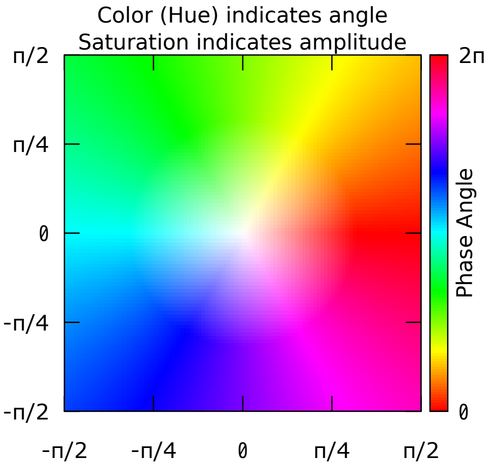


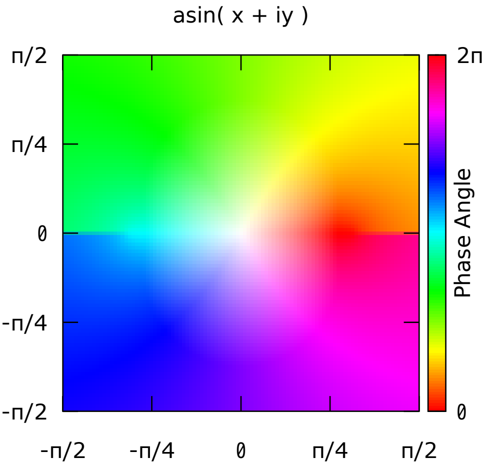
set palette functions sqrt(gray), gray**3, sin(gray*2*pi) <--> 7,5,15
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0


set palette rgbformulae 7,5,15
-10
-8
-6
-4
-2
0
2
4
6
8
10
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

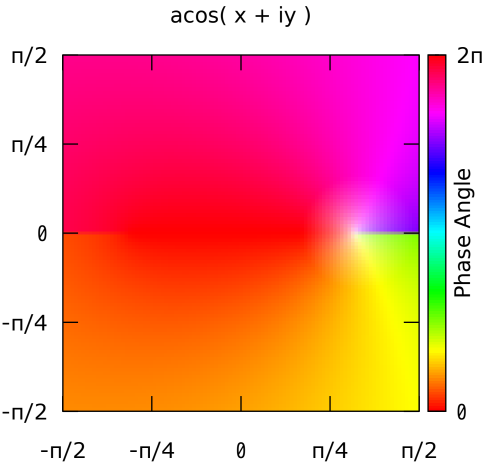


set palette model RGB functions
4*x*(1-theta(x-0.25)), 0.5*theta(x-0.25)*(1-theta(x-0.5)), x
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-10
-8
-6
-4
-2
0
2
4
6
8
10

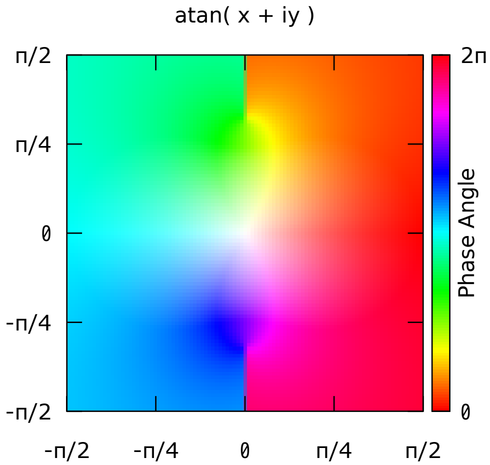

Color (Hue) indicates angle
Saturation indicates amplitude
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

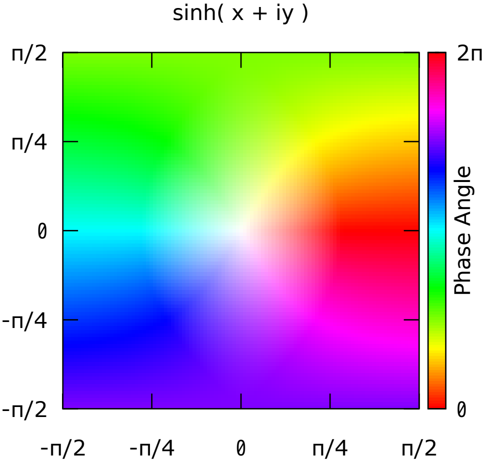


asin(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

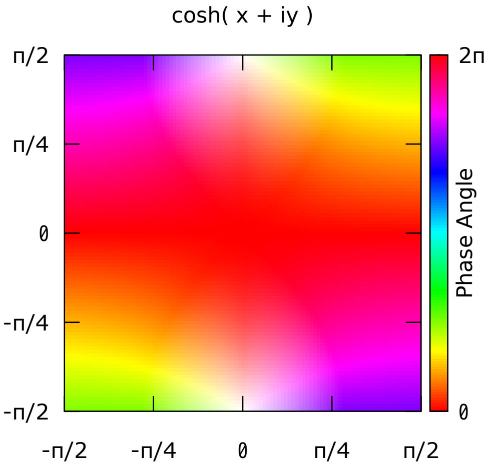


acos(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

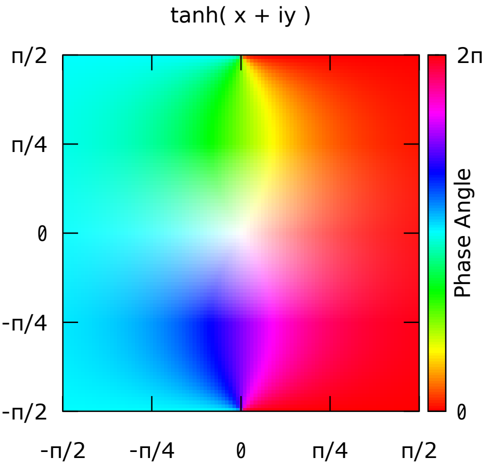

atan(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

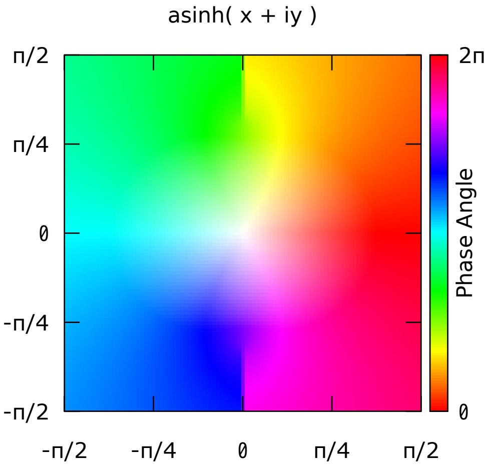


sinh(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

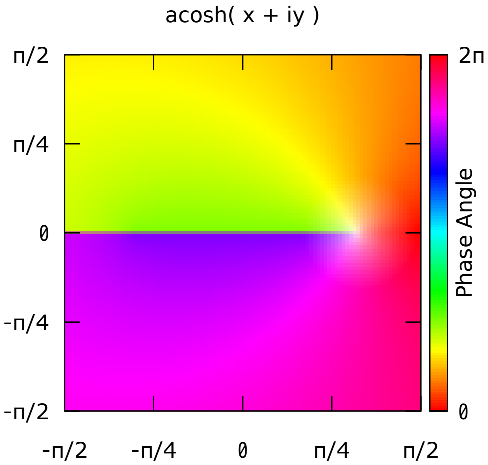


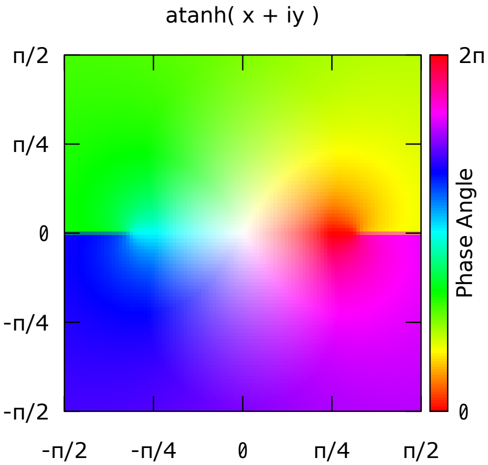
cosh(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle


tanh(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

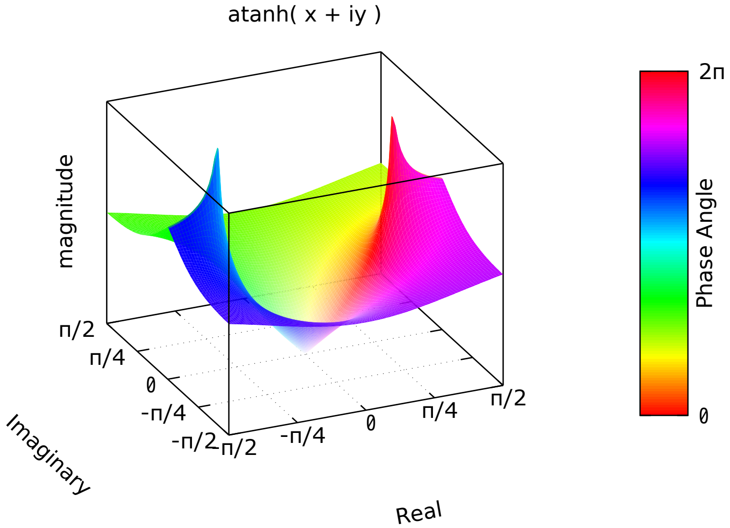


asinh(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle

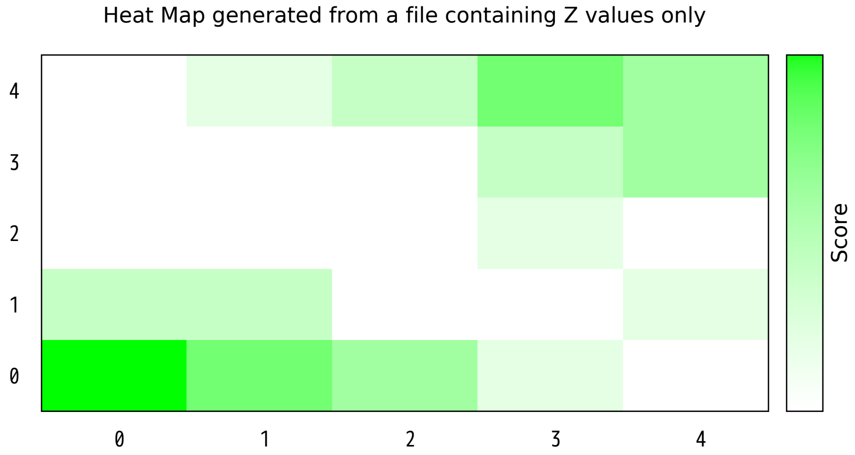

acosh(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle



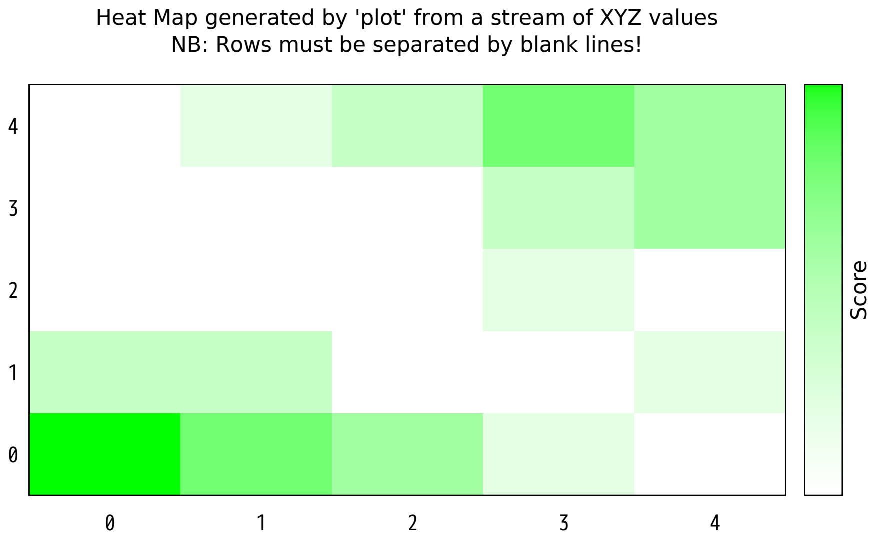
atanh(x + iy)
π/2
π/4
0
-π/4
-π/2
-π/2
-π/4
0
π/4
π/2
2π
0
Phase Angle



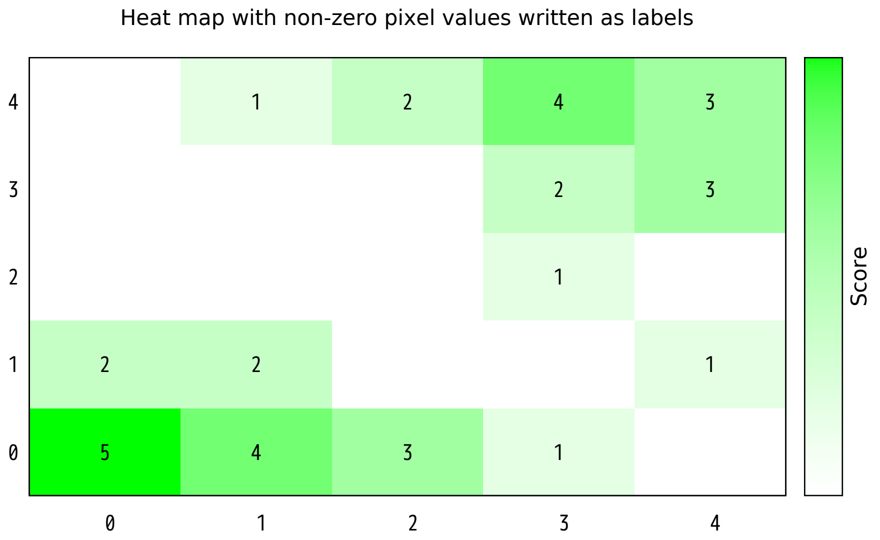
atanh(x + iy)
magnitude
π/2
π/4
0
-π/4
-π/2
Imaginary
-π/2
-π/4
0
π/4
π/2
Real
2π
0
Phase Angle

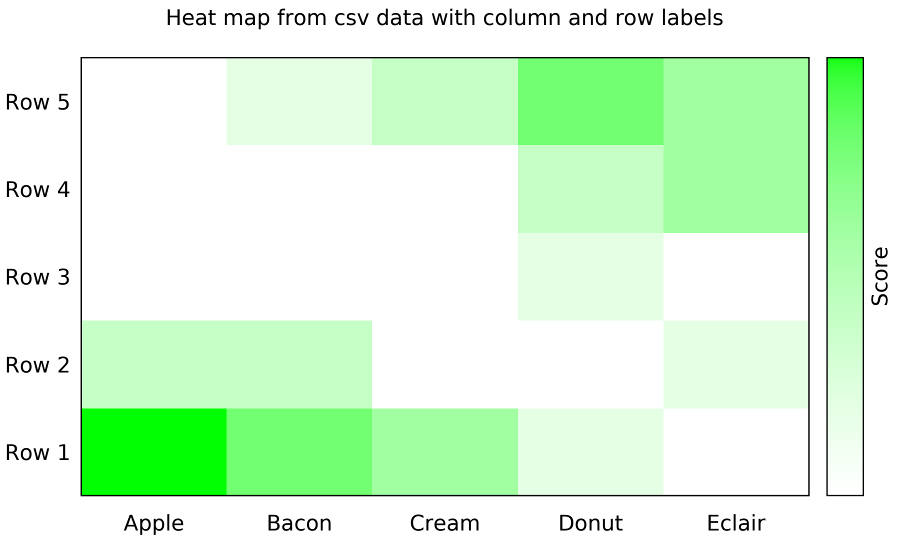


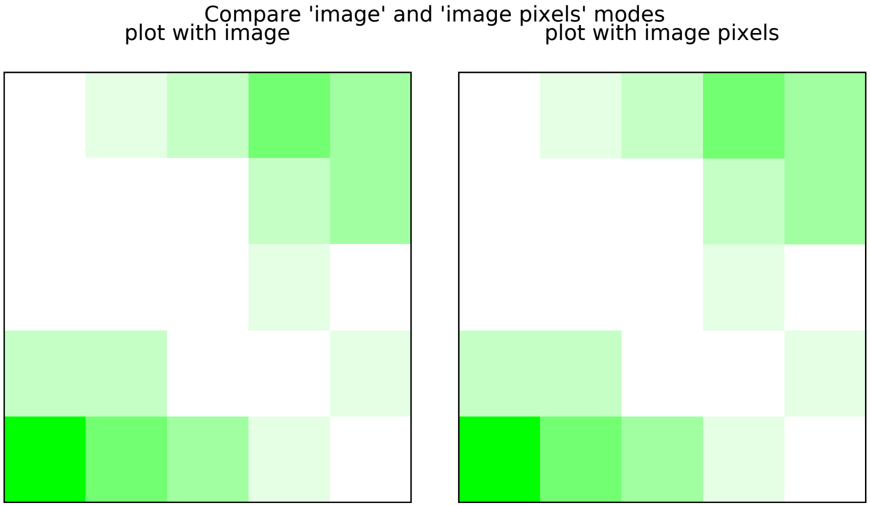
Heat Map generated from a file containing Z values only
4
3
2
1
0
0
1
2
3
4
Score

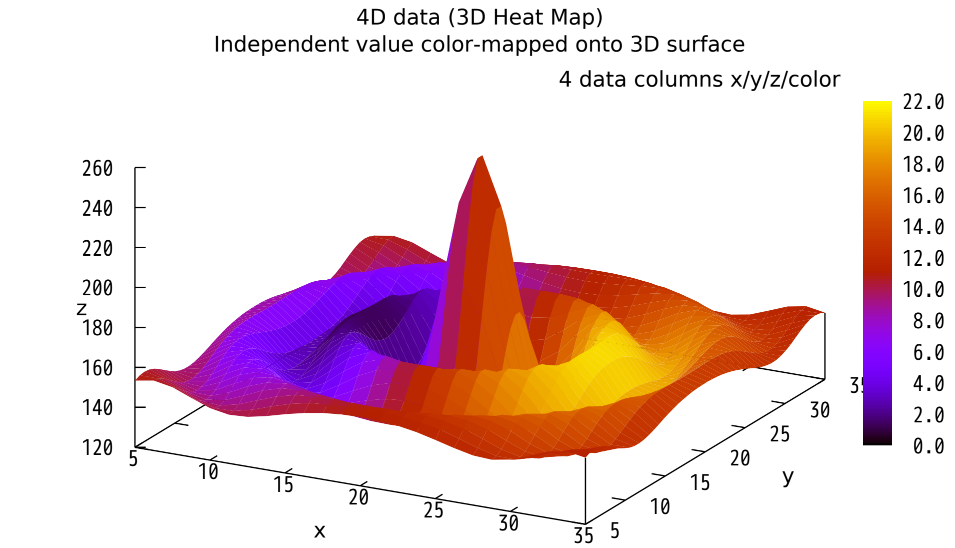


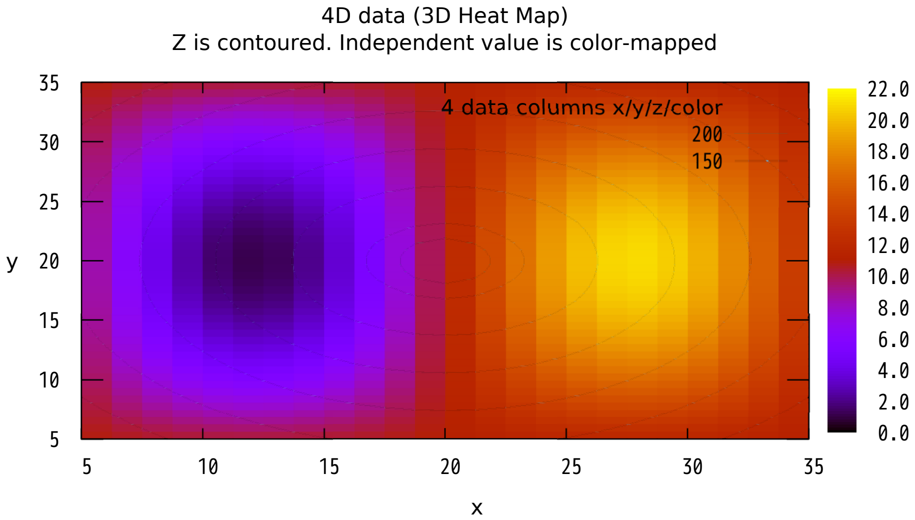
Heat Map generated by 'plot' from a stream of XYZ values
NB: Rows must be separated by blank lines!
4
3
2
1
0
0
1
2
3
4
Score


Heat map with non-zero pixel values written as labels
4
3
2
1
0
1
2
4
3
2
3
1
2
2
1
5
4
3
1
0
1
2
3
4
Score

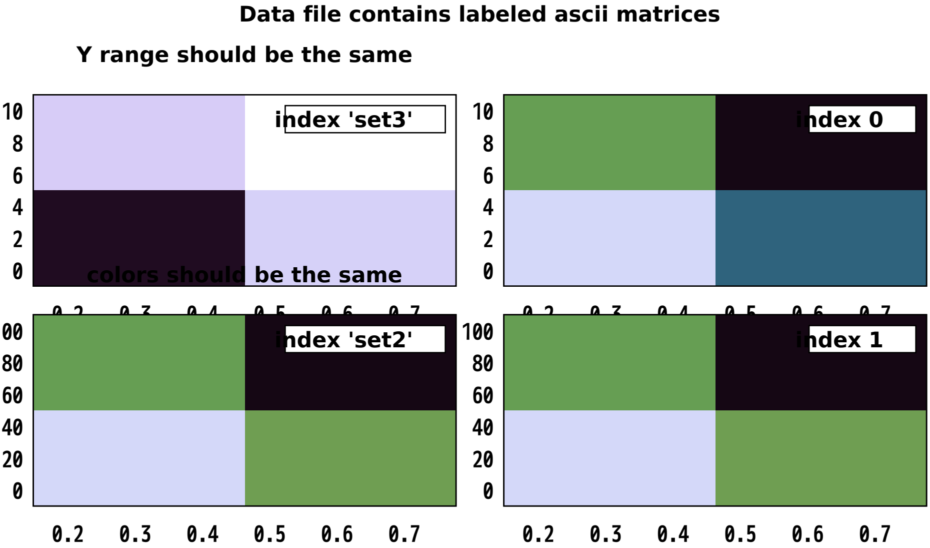

Heat map from csv data with column and row labels
Row 5
Row 4
Row 3
Row 2
Row 1
Apple
Bacon
Cream
Donut
Eclair
Score

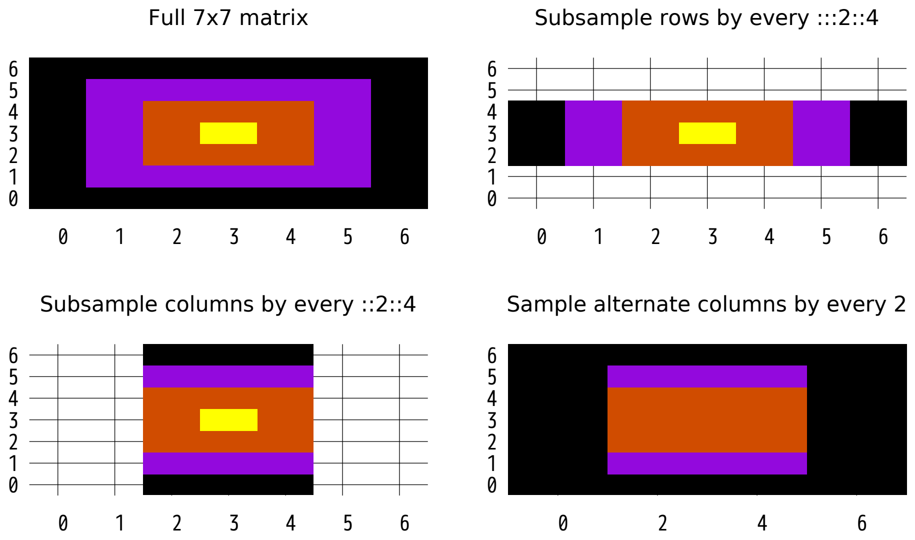

Compare 'image' and 'image pixels' modes
plot with image
plot with image pixels


4D data (3D Heat Map)
Independent value color-mapped onto 3D surface
4 data columns x/y/z/color
z
260
240
220
200
180
160
140
120
x
5
10
15
20
25
30
35
y
5
10
15
20
25
30
35
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0

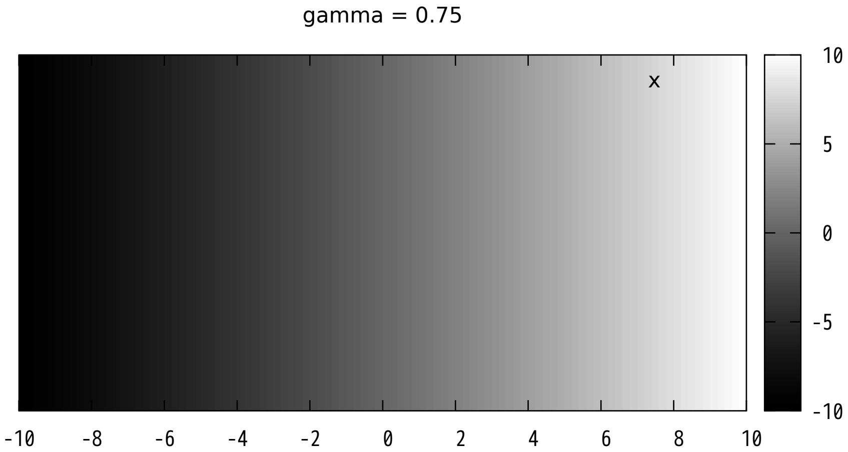


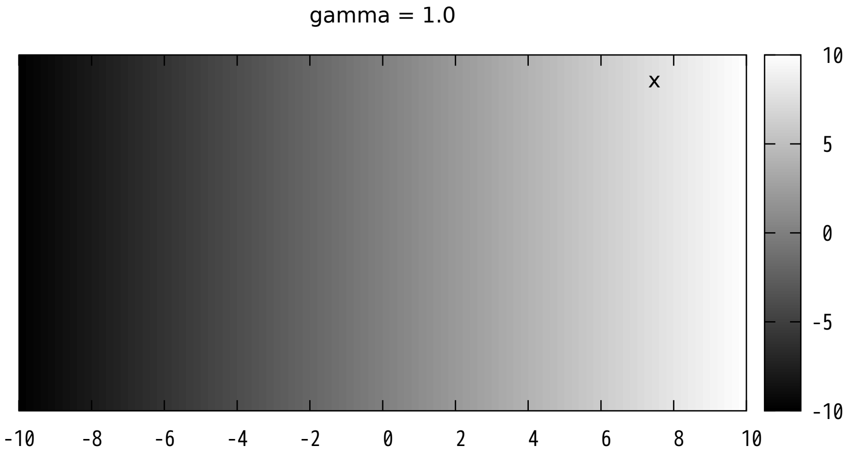
4D data (3D Heat Map)
Z is contoured. Independent value is color-mapped
4 data columns x/y/z/color
200
150
y
x
35
30
25
20
15
10
5
5
10
15
20
25
30
35
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0

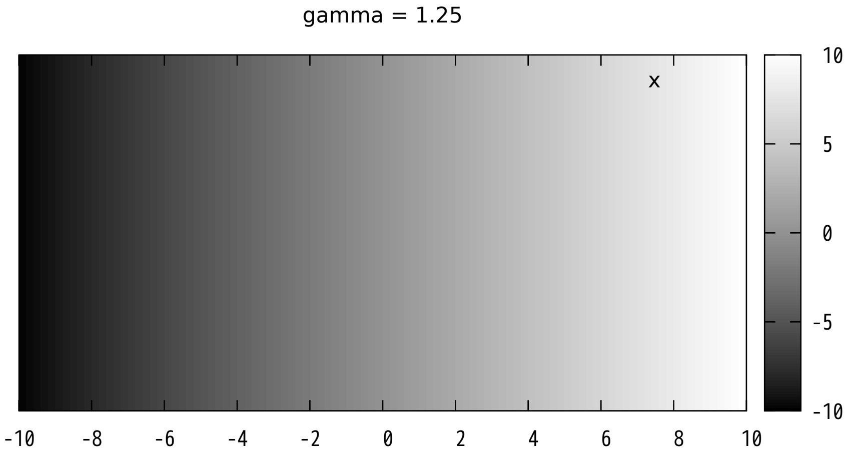

Data file contains labeled ascii matrices
Y range should be the same
index 'set3'
index 0
colors should be the same
index 'set2'
index 1
0.2
0.3
0.4
0.5
0.6
0.7
0
2
4
6
8
10
0
20
40
60
80
100



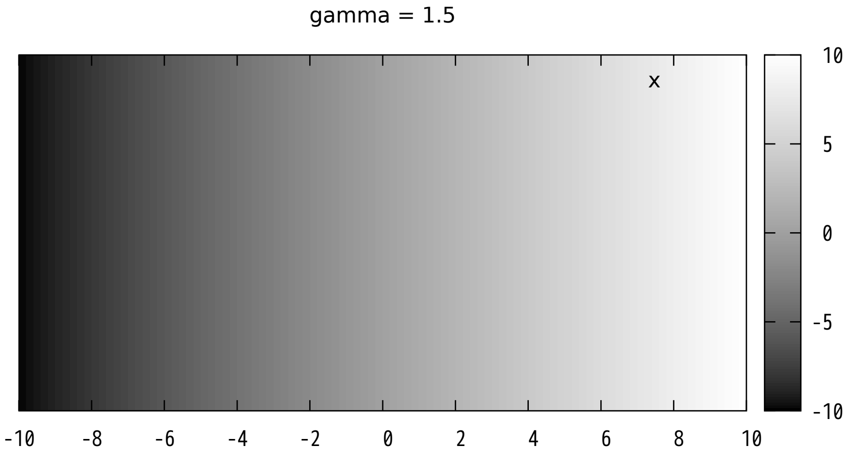
Full 7x7 matrix
Subsample rows by every :::2::4
Subsample columns by every ::2::4
Sample alternate columns by every 2
0 1 2 3 4 5 6
0 2 4 6

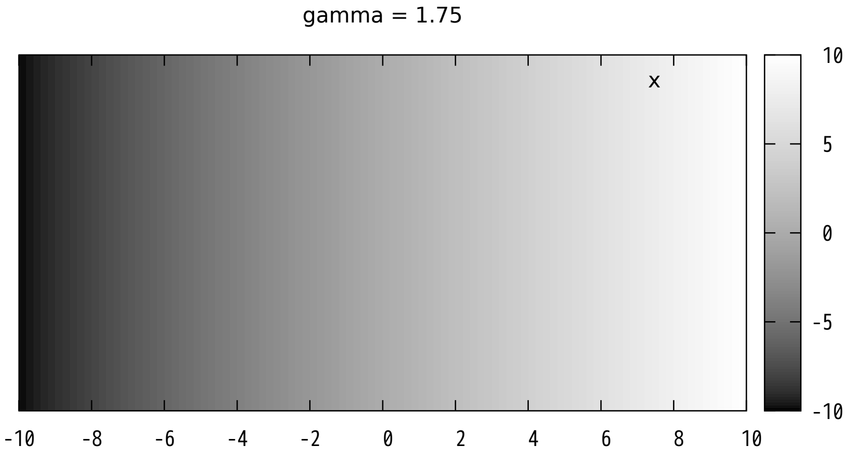

gamma = 0.75
x
-10
-8
-6
-4
-2
0
2
4
6
8
10
10
5
0
-5
-10


gamma = 1.0
x
-10
-8
-6
-4
-2
0
2
4
6
8
10
10
5
0
-5
-10

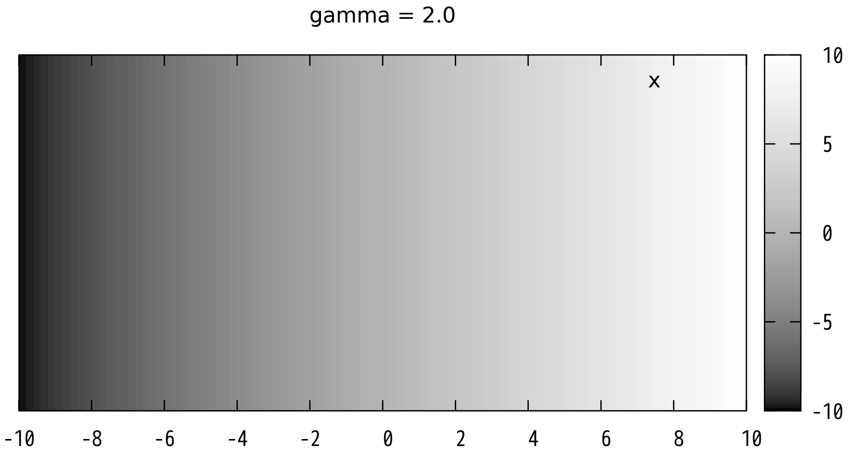


gamma = 1.25
x
-10
-8
-6
-4
-2
0
2
4
6
8
10
10
5
0
-5
-10

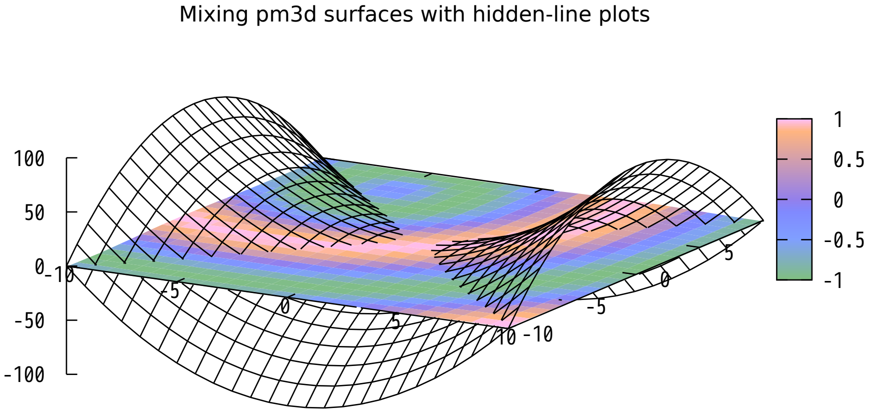

gamma = 1.5
x
10
5
0
-5
-10
-10
-8
-6
-4
-2
0
2
4
6
8
10



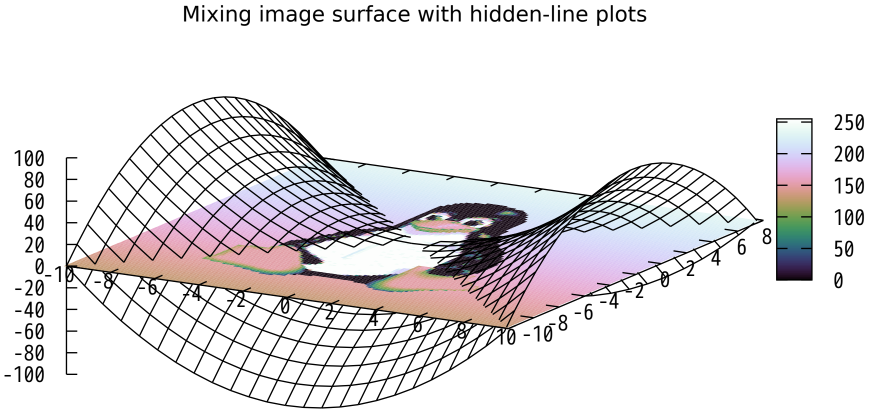
gamma = 1.75
x
10
5
0
-5
-10
-10
-8
-6
-4
-2
0
2
4
6
8
10



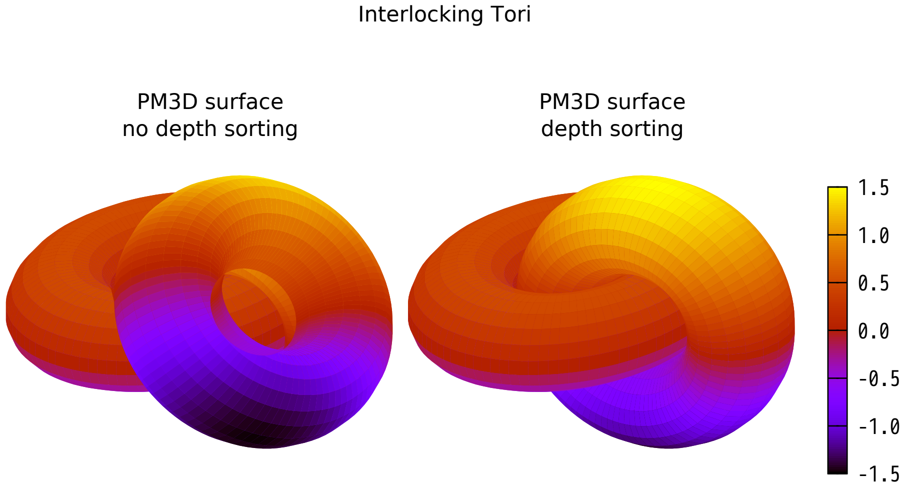
gamma = 2.0
x
10
5
0
-5
-10
-10
-8
-6
-4
-2
0
2
4
6
8
10



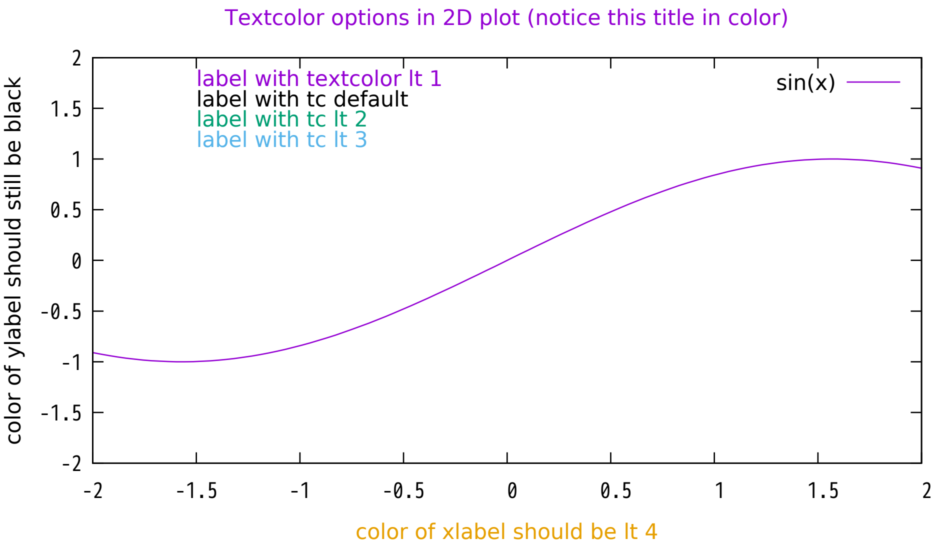
Mixing pm3d surfaces with hidden-line plots
100
50
0
-50
-100
-10
-5
0
5
10
-10
-5
0
5
1
0.5
0
-0.5
-1

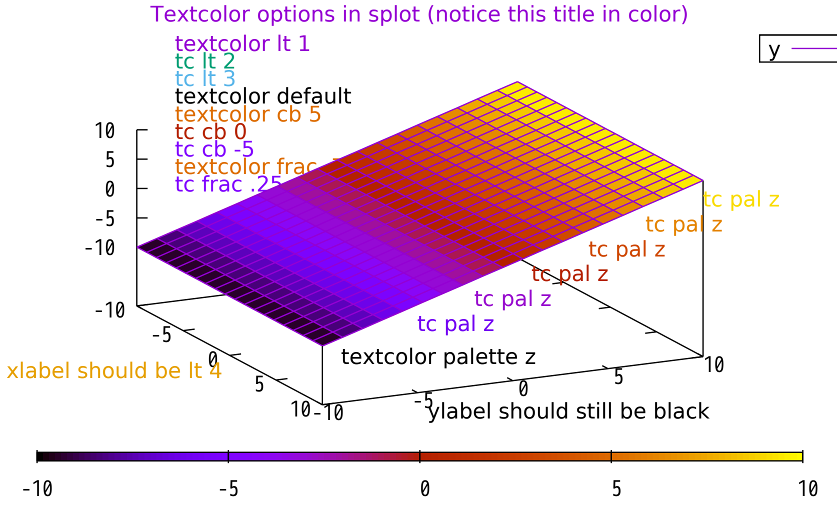


Mixing image surface with hidden-line plots
100
80
60
40
20
0
-20
-40
-60
-80
-100
-10
-8
-6
-4
-2
0
2
4
6
8
10
-10
-8
-6
-4
-2
0
2
4
6
8
250
200
150
100
50
0

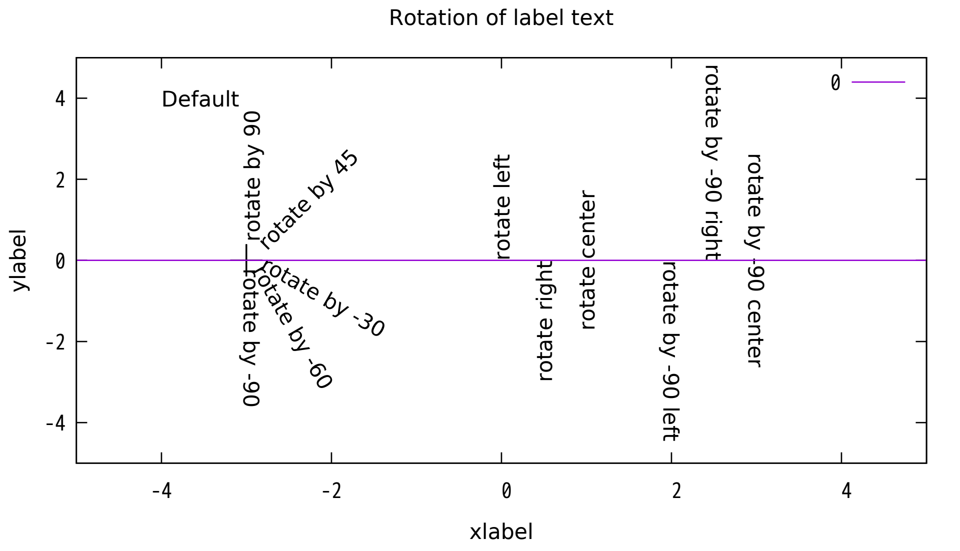


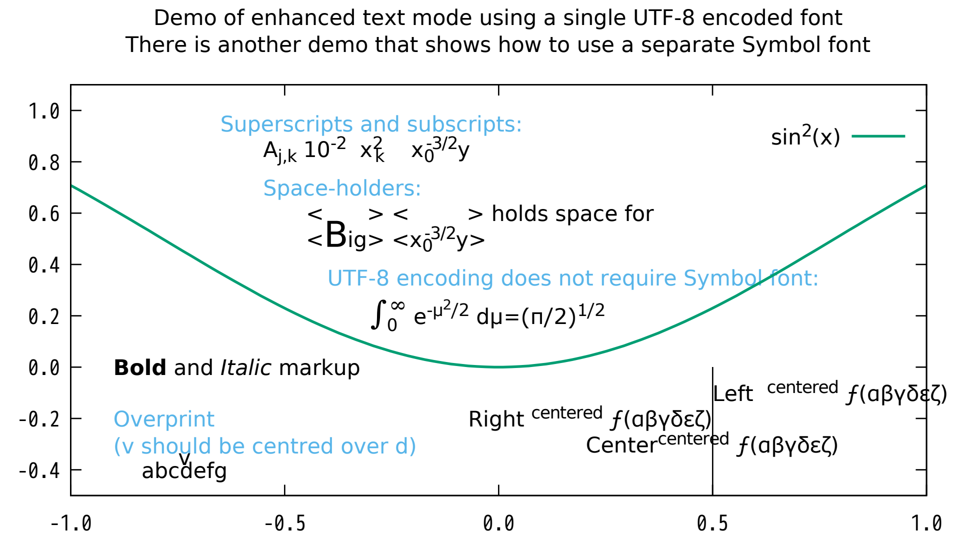
Interlocking Tori
PM3D surface
no depth sorting
PM3D surface
depth sorting
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5

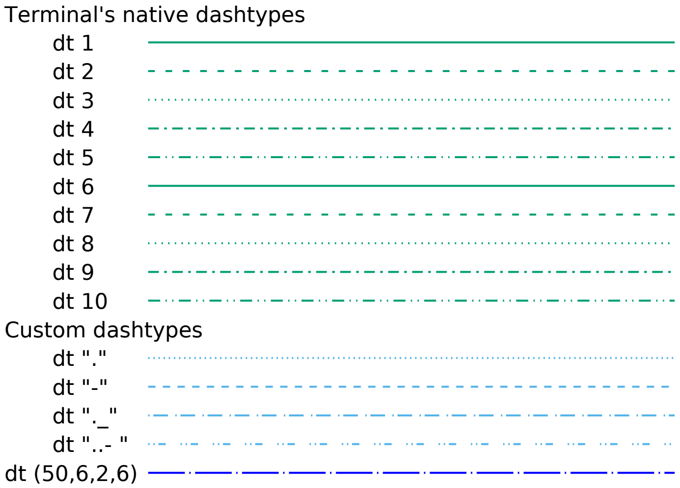

Textcolor options in 2D plot (notice this title in color)
label with textcolor lt 1
label with tc default
label with tc lt 2
label with tc lt 3
sin(x)
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
color of ylabel should still be black
color of xlabel should be lt 4

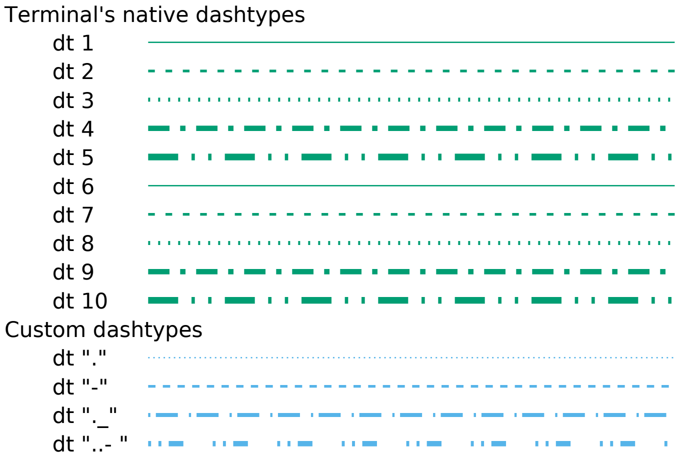


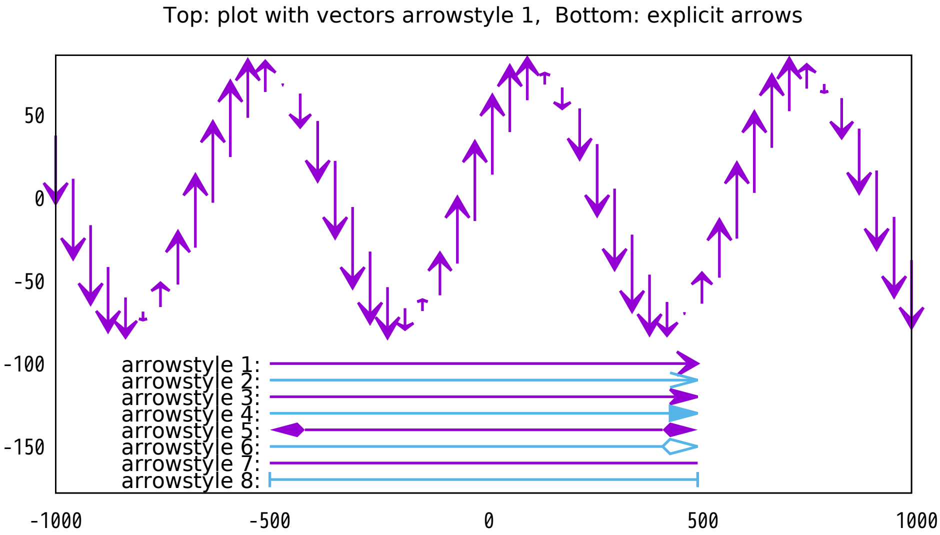
Textcolor options in splot (notice this title in color)
textcolor lt 1
tc lt 2
tc lt 3
textcolor default
textcolor cb 5
tc cb 0
tc cb -5
textcolor frac
tc frac .25
y
tc pal z
tc pal z
tc pal z
tc pal z
tc pal z
tc pal z
textcolor palette z
xlabel should be lt 4
ylabel should still be black
10
5
0
-5
-10
-10
-5
0
5
10
-10
-5
0
5
10
-10
-5
0
5
10


Rotation of label text
Default
rotate by 90
rotate by 45
rotate by -30
rotate by -60
rotate by -90
rotate left
rotate right
rotate center
rotate by -90 left
rotate by -90 right
rotate by -90 center
0
-4
-2
0
2
4
-4
-2
0
2
4
xlabel
ylabel

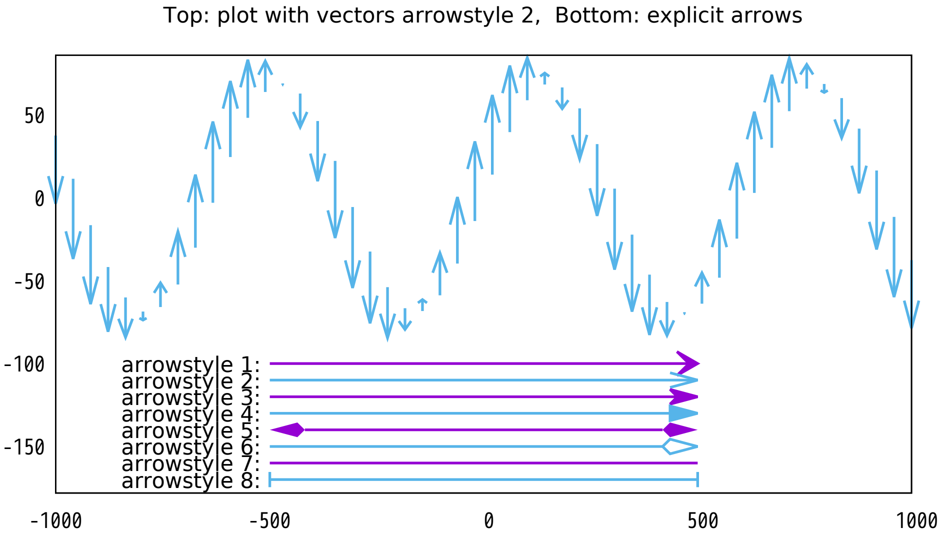

Demo of enhanced text mode using a single UTF-8 encoded font
There is another demo that shows how to use a separate Symbol font
Superscripts and subscripts:
A j,k 10 -2 x 2 k x 0 -3/2 y
Space-holders:
< > < > holds space for
<Big> <x 0 -3/2 y>
UTF-8 encoding does not require Symbol font:
∫ 0 ∞ e -μ 2 /2 dμ=(π/2) 1/2
sin 2 (x)
Bold and Italic markup
Overprint
(v should be centred over d)
abcdefg
Left centered ƒ(αβγδεζ)
Right centered ƒ(αβγδεζ)
Center centered ƒ(αβγδεζ)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-1.0
-0.5
0.0
0.5
1.0

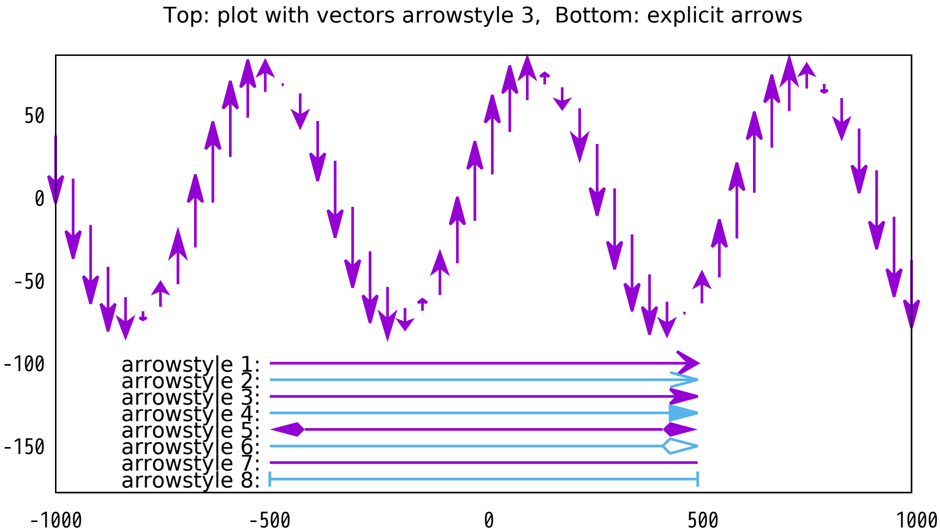

Terminal's native dashtypes
dt 1
dt 2
dt 3
dt 4
dt 5
dt 6
dt 7
dt 8
dt 9
dt 10
Custom dashtypes
dt "."
dt "-"
dt "._"
dt "..- "
dt (50,6,2,6)


Terminal's native dashtypes
dt 1
dt 2
dt 3
dt 4
dt 5
dt 6
dt 7
dt 8
dt 9
dt 10
Custom dashtypes
dt "."
dt "-"
dt "._"
dt "..- "

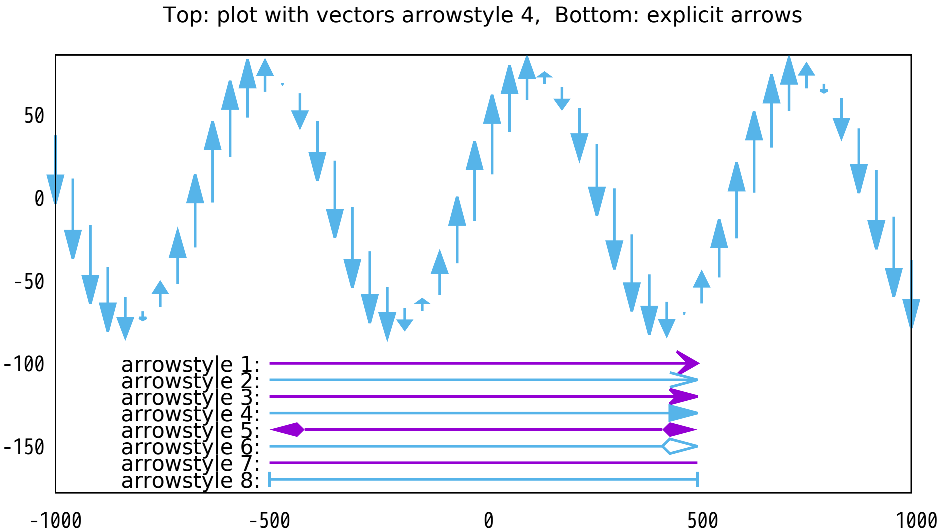


Top: plot with vectors arrowstyle 1, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:

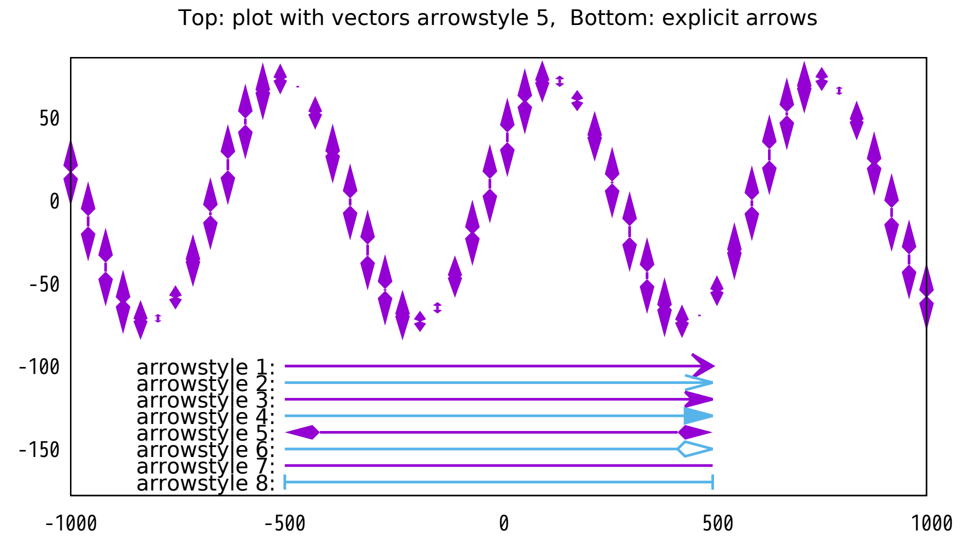

Top: plot with vectors arrowstyle 2, Bottom: explicit arrows
50
0
-50
-100
-150
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:
-1000
-500
0
500
1000



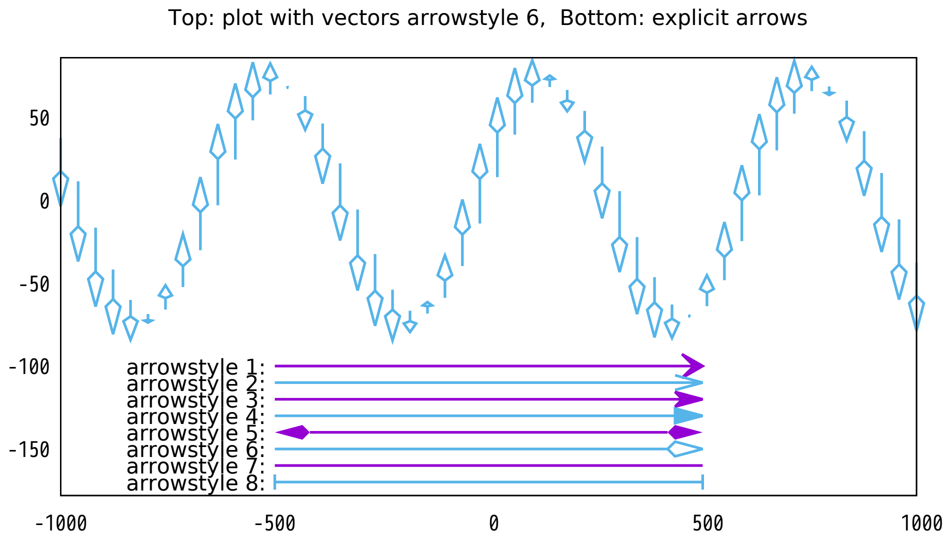
Top: plot with vectors arrowstyle 3, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:

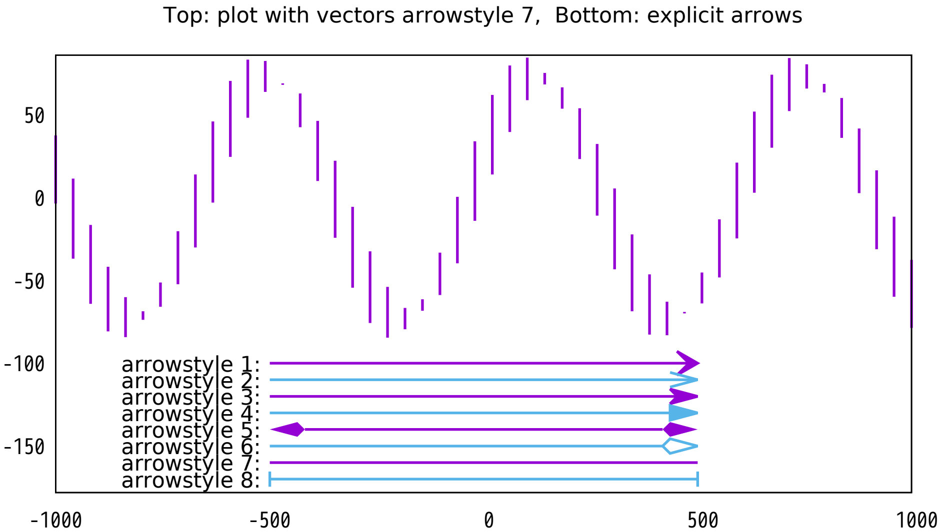


Top: plot with vectors arrowstyle 4, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:

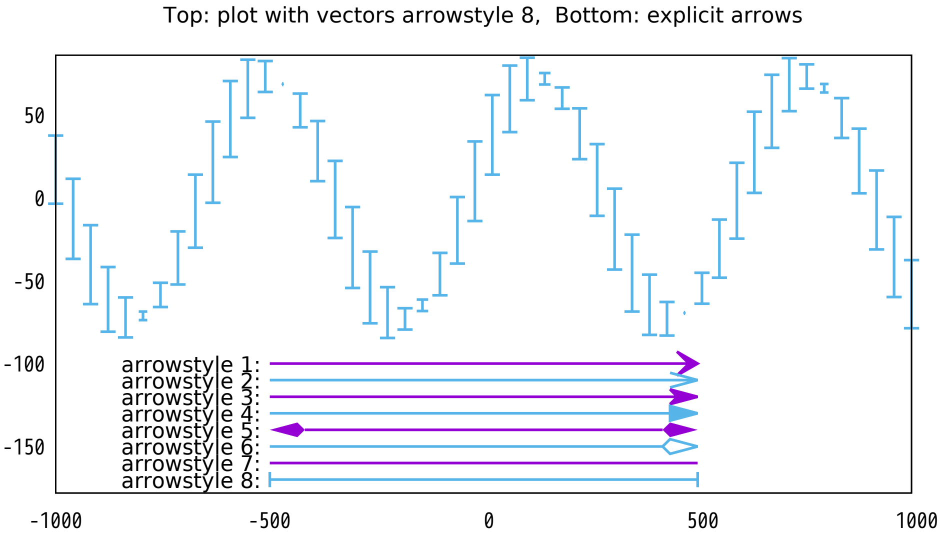


Top: plot with vectors arrowstyle 5, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:

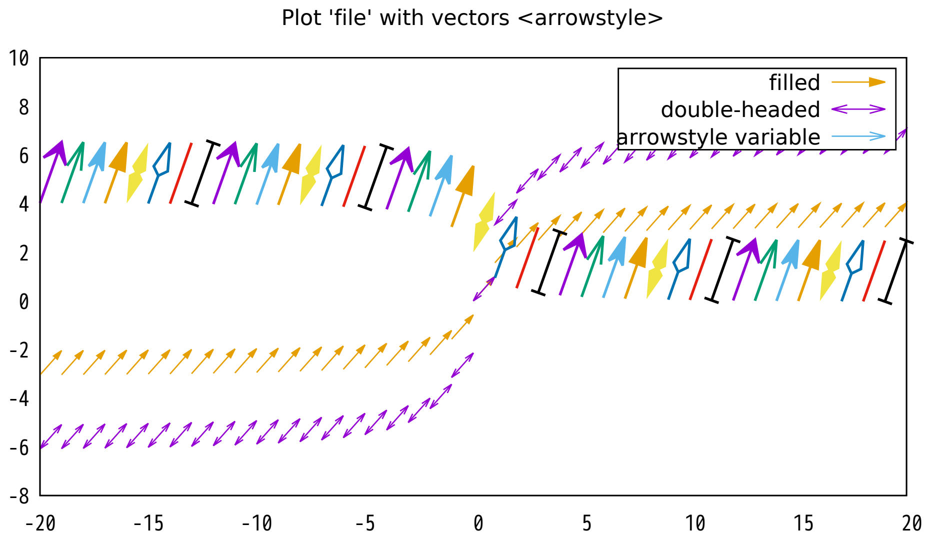

Top: plot with vectors arrowstyle 6, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:



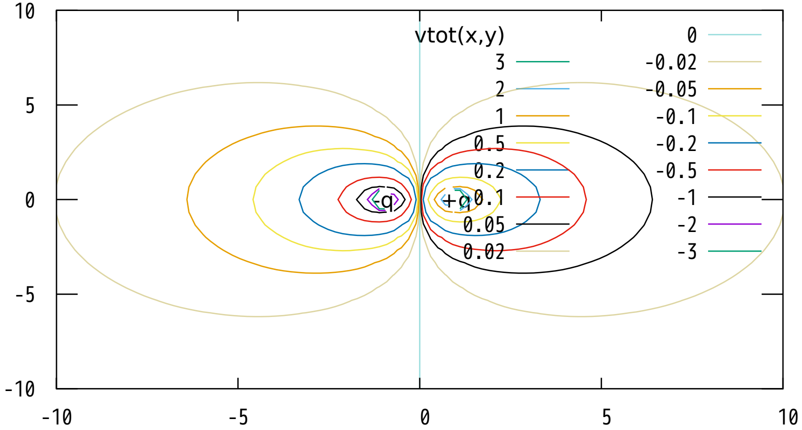
Top: plot with vectors arrowstyle 7, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:

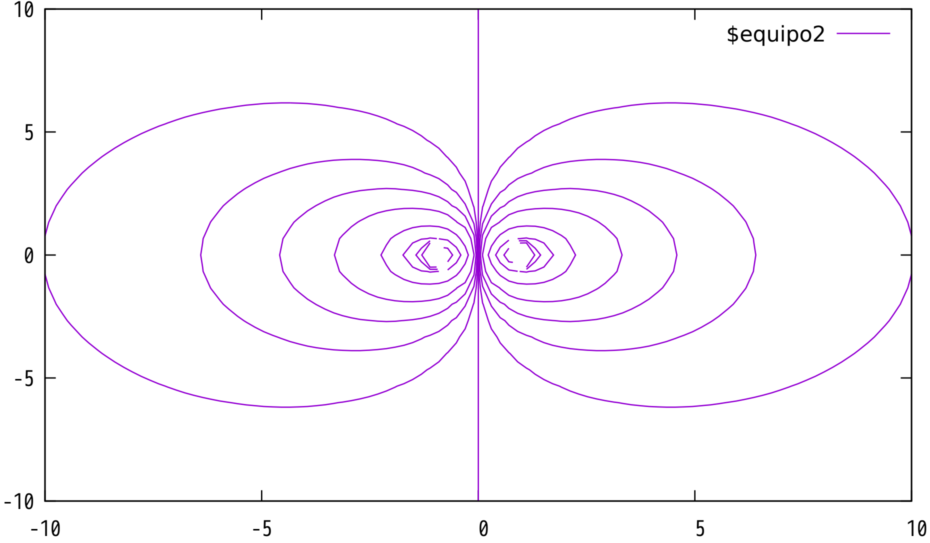


Top: plot with vectors arrowstyle 8, Bottom: explicit arrows
50
0
-50
-100
-150
-1000
-500
0
500
1000
arrowstyle 1:
arrowstyle 2:
arrowstyle 3:
arrowstyle 4:
arrowstyle 5:
arrowstyle 6:
arrowstyle 7:
arrowstyle 8:

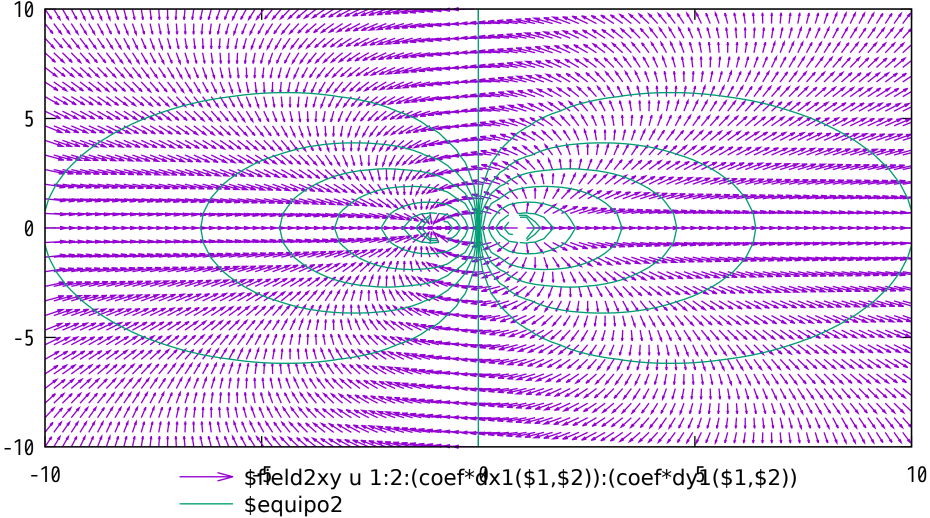


Plot 'file' with vectors <arrowstyle>
filled
double-headed
arrowstyle variable
10
8
6
4
2
0
-2
-4
-6
-8
-20
-15
-10
-5
0
5
10
15
20

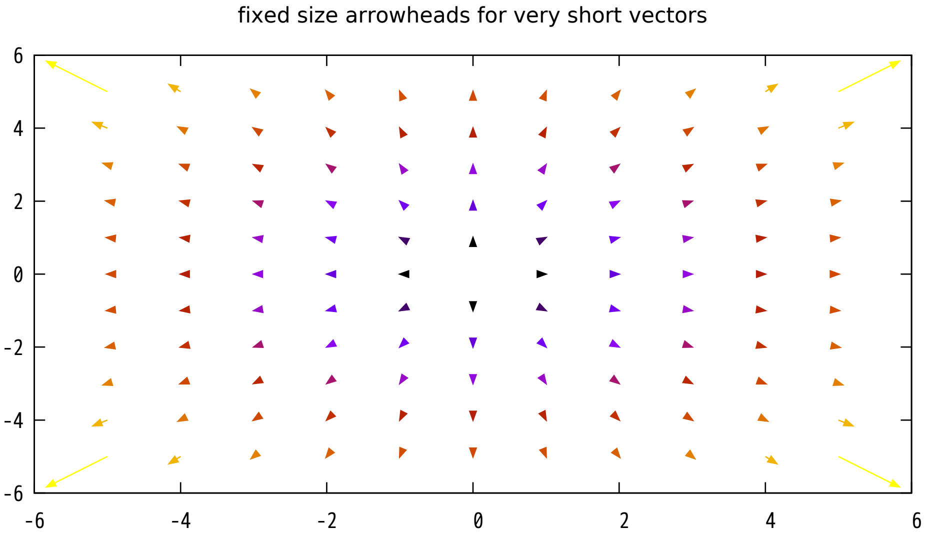

vtot(x,y)
3
2
1
0.5
0.2
0.1
0.05
0.02
0
-0.02
-0.05
-0.1
-0.2
-0.5
-1
-2
-3
-q
+q
10
5
0
-5
-10
-10
-5
0
5
10

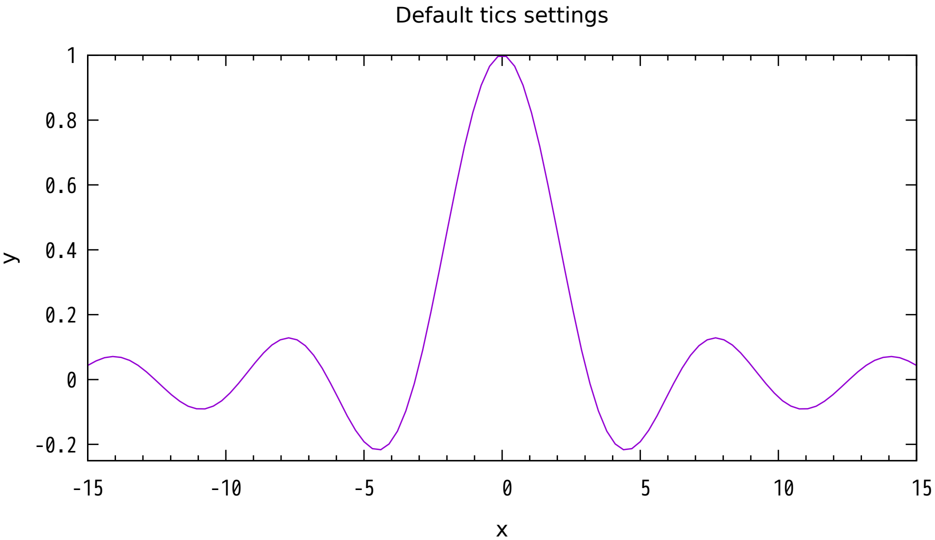


$equipo2
10
5
0
-5
-10
-10
-5
0
5
10

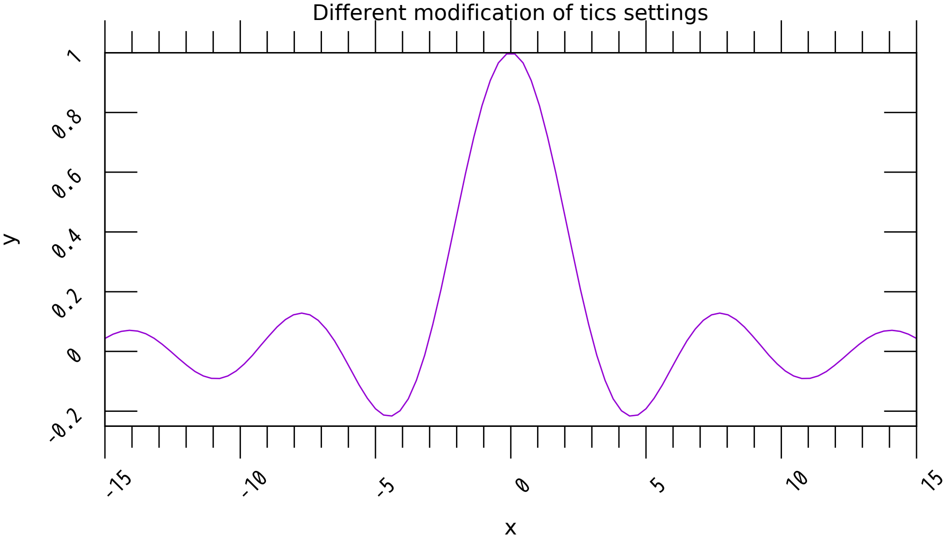


10
5
0
-5
-10
-10
-5
0
5
10
$field2xy u 1:2:(coef*dx1($1,$2)):(coef*dy1($1,$2))
$equipo2

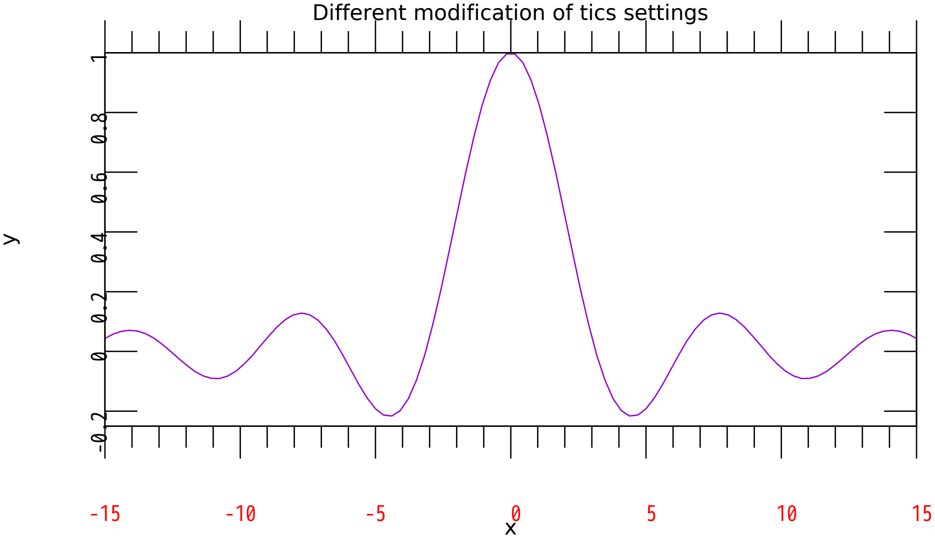

fixed size arrowheads for very short vectors
6
4
2
0
-2
-4
-6
-6
-4
-2
0
2
4
6



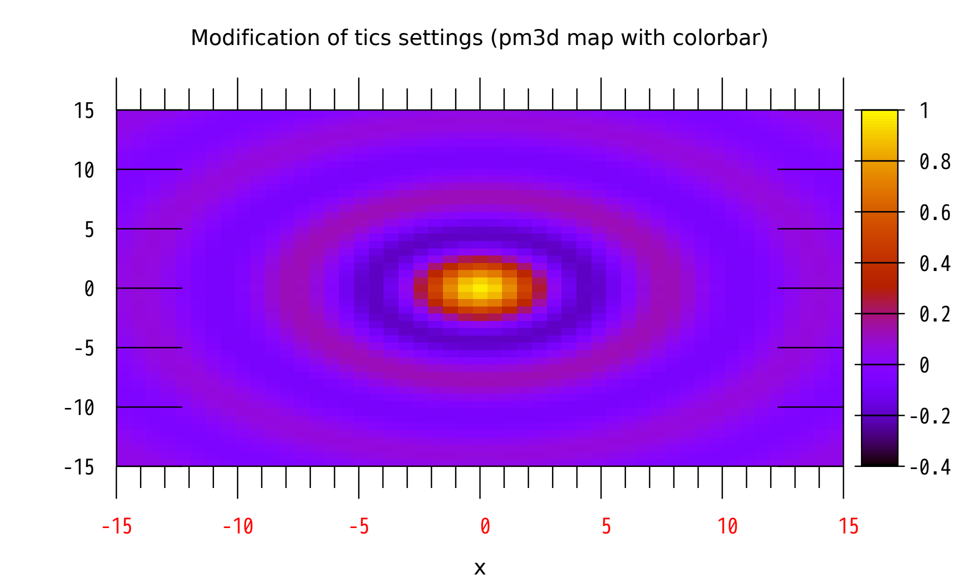
Default tics settings
1
0.8
0.6
0.4
0.2
0
-0.2
y
-15
-10
-5
0
5
10
15
x

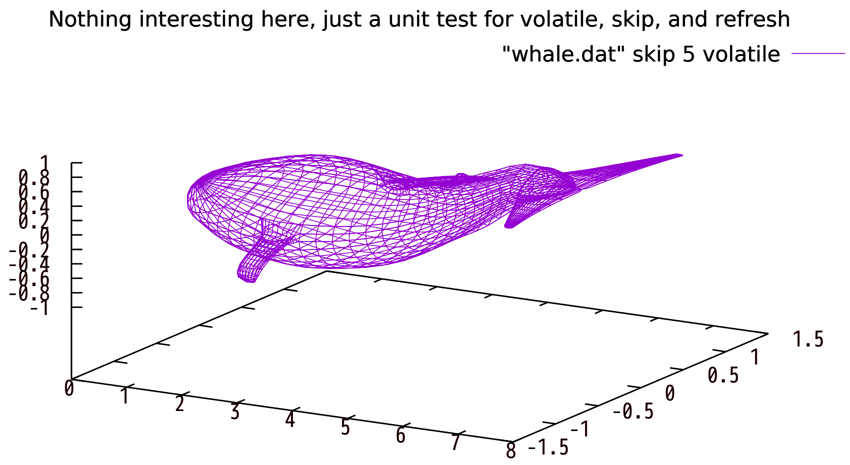


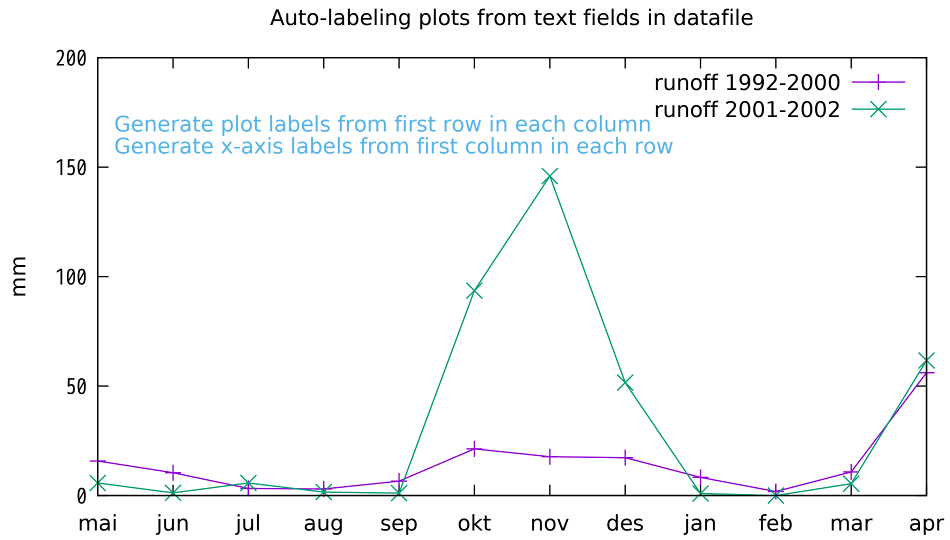
Different modification of tics settings
1
0.8
0.6
0.4
0.2
0
-0.2
y
-15
-10
-5
0
5
10
15
x

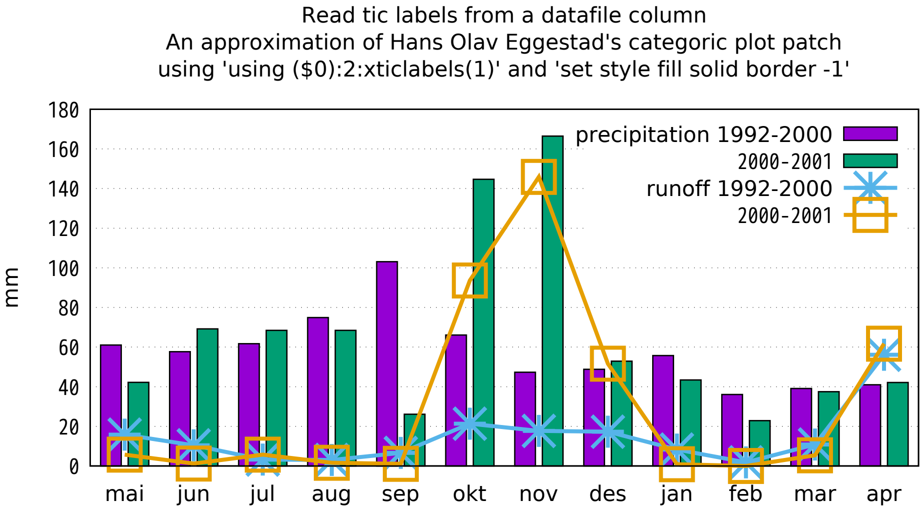


Different modification of tics settings
y
x
1
0.8
0.6
0.4
0.2
0
-0.2
-15
-10
-5
0
5
10
15

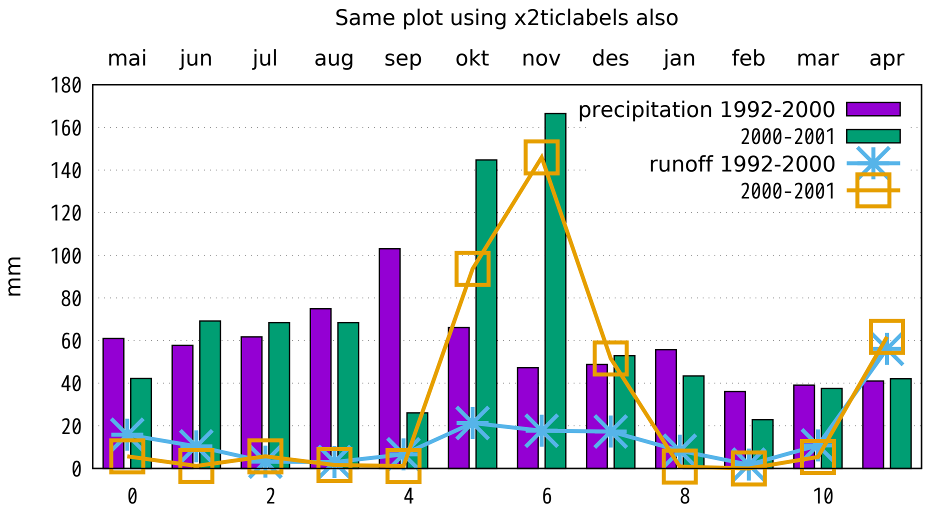

Modification of tics settings (pm3d map with colorbar)
15
10
5
0
-5
-10
-15
-15
-10
-5
0
5
10
15
x
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4


Nothing interesting here, just a unit test for volatile, skip, and refresh
"whale.dat" skip 5 volatile
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
1
2
3
4
5
6
7
8
-1.5
-1
-0.5
0
0.5
1
1.5

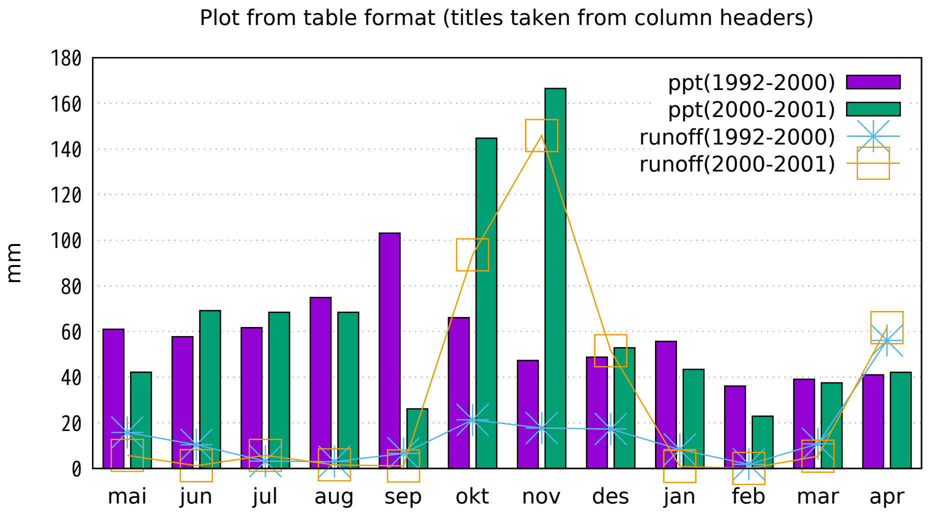

Auto-labeling plots from text fields in datafile
runoff 1992-2000
runoff 2001-2002
Generate plot labels from first row in each column
Generate x-axis labels from first column in each row
mm
0
50
100
150
200
mai
jun
jul
aug
sep
okt
nov
des
jan
feb
mar
apr



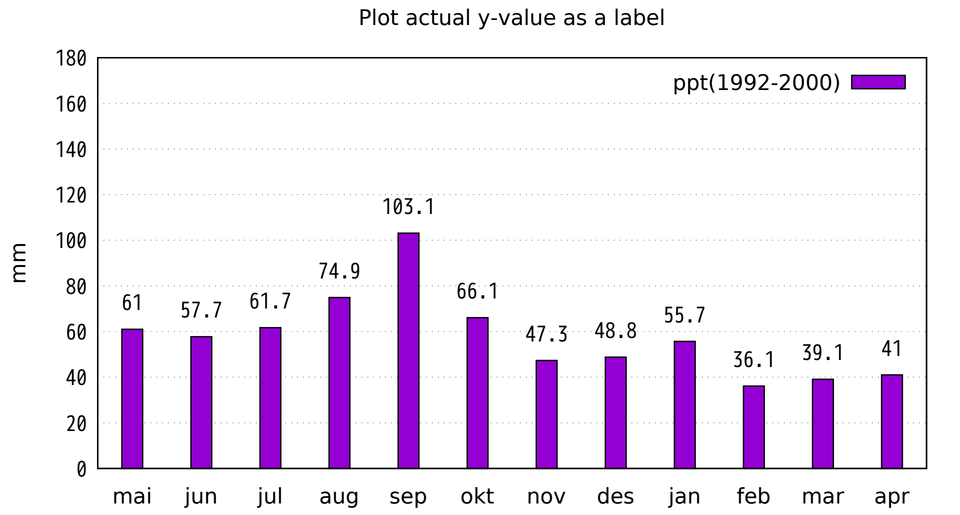
Read tic labels from a datafile column
An approximation of Hans Olav Eggestad's categoric plot patch
using 'using ($0):2:xticlabels(1)' and 'set style fill solid border -1'
mm
0
20
40
60
80
100
120
140
160
180
precipitation 1992-2000
2000-2001
runoff 1992-2000
2000-2001
mai
jun
jul
aug
sep
okt
nov
des
jan
feb
mar
apr

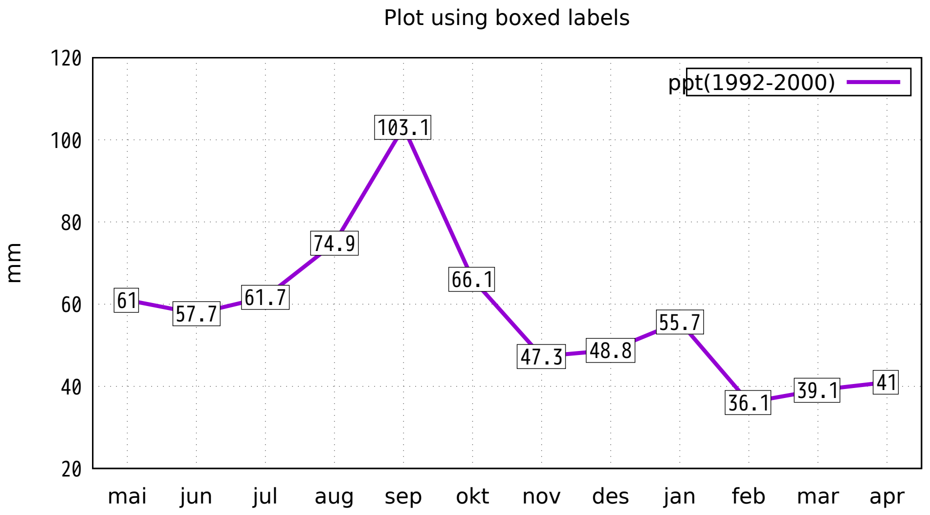


Same plot using x2ticlabels also
mai
jun
jul
aug
sep
okt
nov
des
jan
feb
mar
apr
180
160
140
120
100
80
60
40
20
0
mm
0
2
4
6
8
10
precipitation 1992-2000
2000-2001
runoff 1992-2000
2000-2001

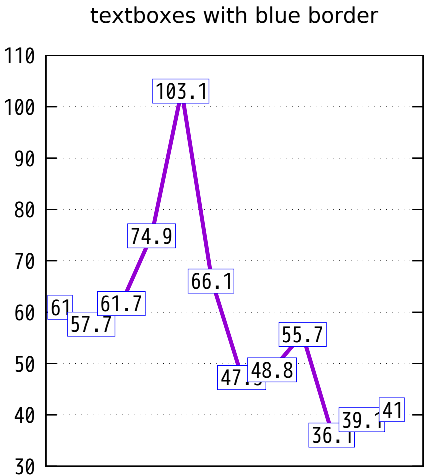


Plot from table format (titles taken from column headers)
mm
180
160
140
120
100
80
60
40
20
0
mai
jun
jul
aug
sep
okt
nov
des
jan
feb
mar
apr
ppt(1992-2000)
ppt(2000-2001)
runoff(1992-2000)
runoff(2000-2001)

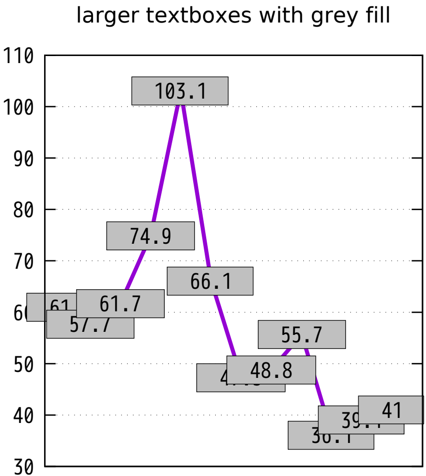

Plot actual y-value as a label
ppt(1992-2000)
mm
180
160
140
120
100
80
60
40
20
0
61
57.7
61.7
74.9
103.1
66.1
47.3
48.8
55.7
36.1
39.1
41
mai
jun
jul
aug
sep
okt
nov
des
jan
feb
mar
apr



Plot using boxed labels
mm
120
100
80
60
40
20
ppt(1992-2000)
61
57.7
61.7
74.9
103.1
66.1
47.3
48.8
55.7
36.1
39.1
41
mai
jun
jul
aug
sep
okt
nov
des
jan
feb
mar
apr

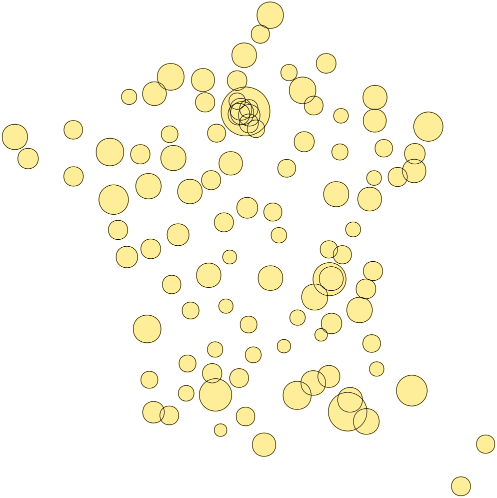


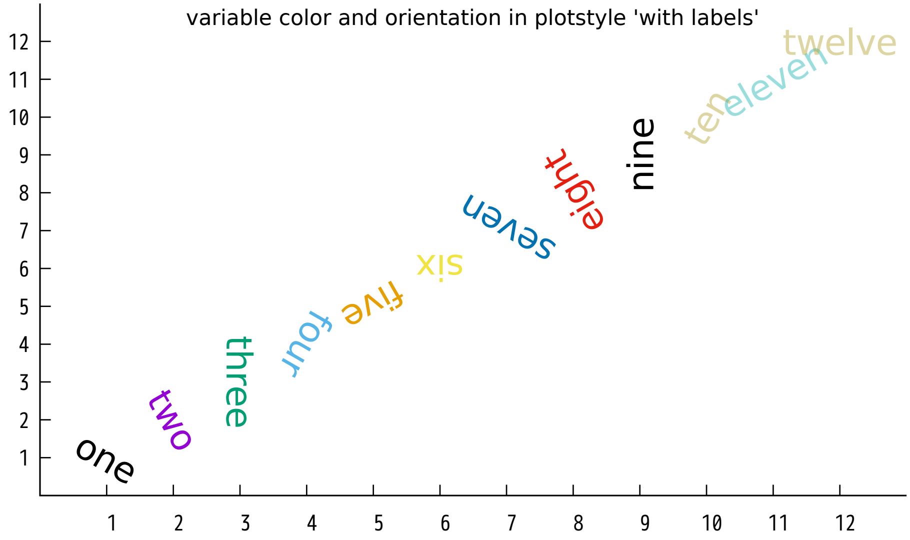
textboxes with blue border
110
100
90
80
70
60
50
40
30
103.1
74.9
66.1
61
57.7
61.7
55.7
48.8
41

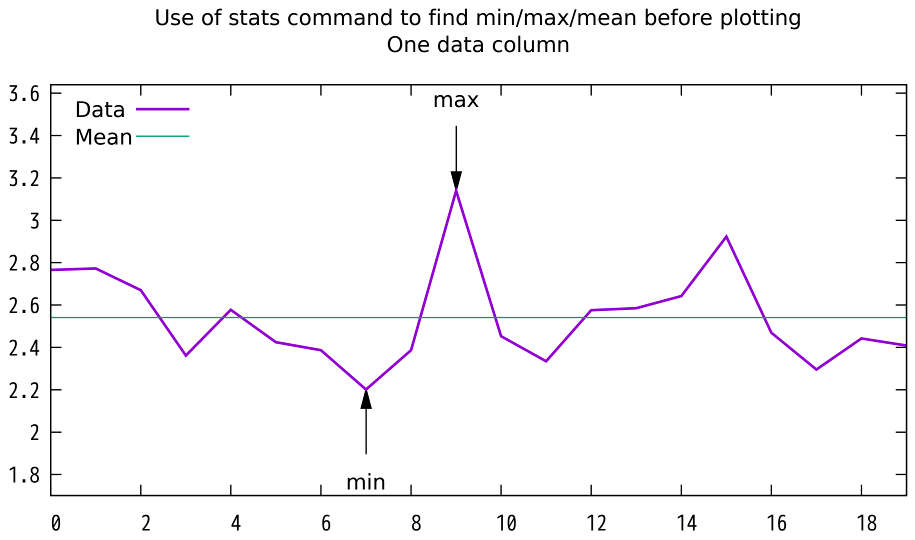


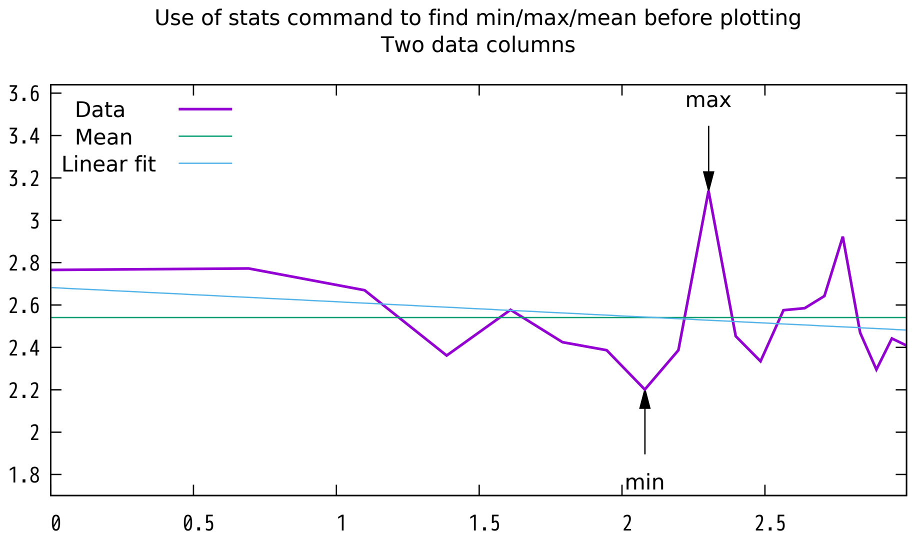
larger textboxes with grey fill
110
100
90
80
70
60
50
40
30
103.1
74.9
66.1
61.7
55.7
48.8
41

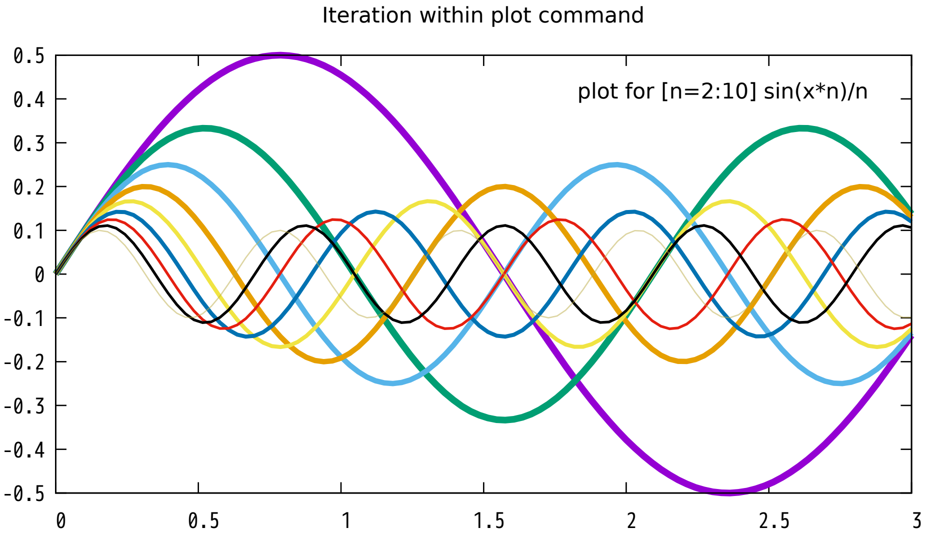
Hypertext is shown when the mouse is over a point



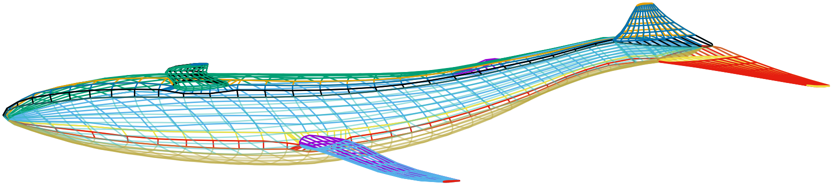

variable color and orientation in plotstyle 'with labels'
one
two
three
four
five
six
seven
eight
nine
ten
eleven
twelve
1
2
3
4
5
6
7
8
9
10
11
12


Use of stats command to find min/max/mean before plotting
One data column
Data
Mean
max
min
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
0
2
4
6
8
10
12
14
16
18

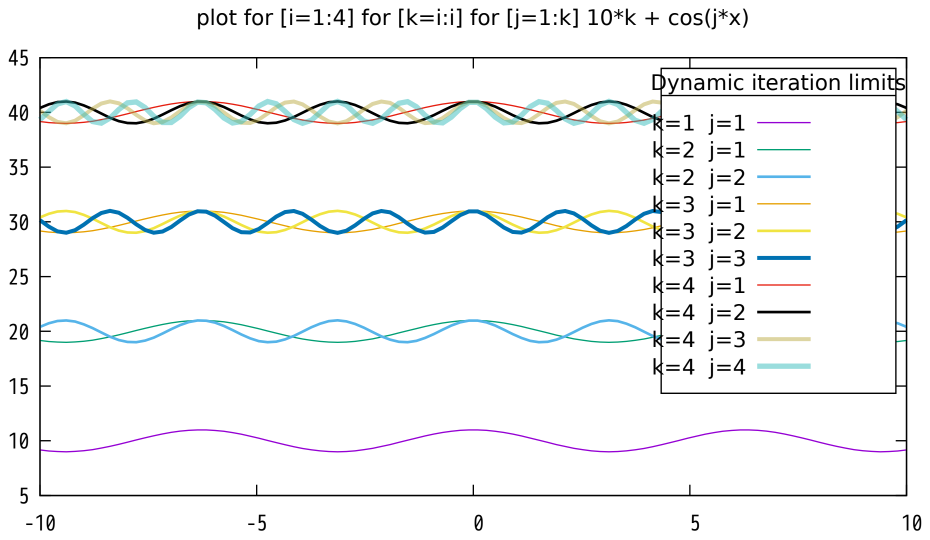

Use of stats command to find min/max/mean before plotting
Two data columns
Data
Mean
Linear fit
max
min
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
0
0.5
1
1.5
2
2.5

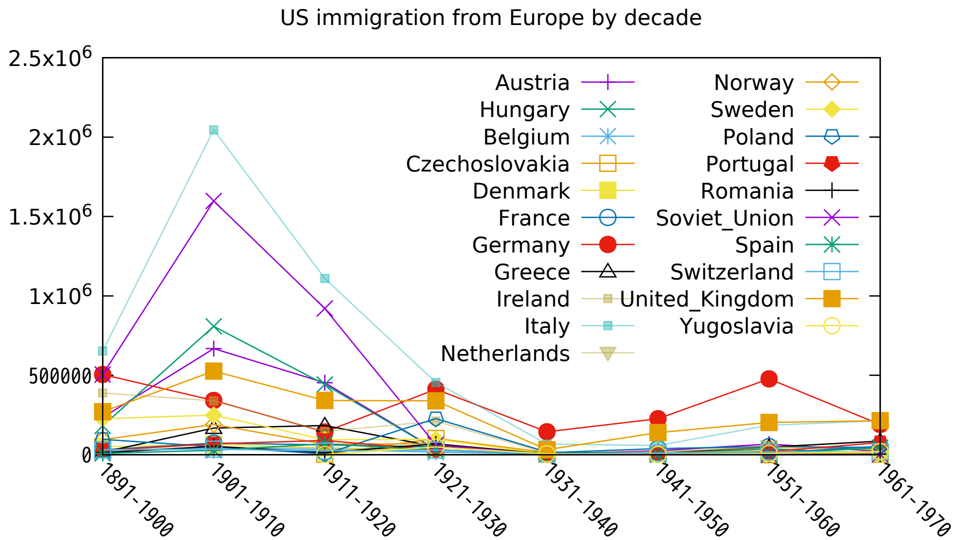

Iteration within plot command
plot for [n=2:10] sin(x*n)/n
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
0
0.5
1
1.5
2
2.5
3

Iteration over all available data in a file

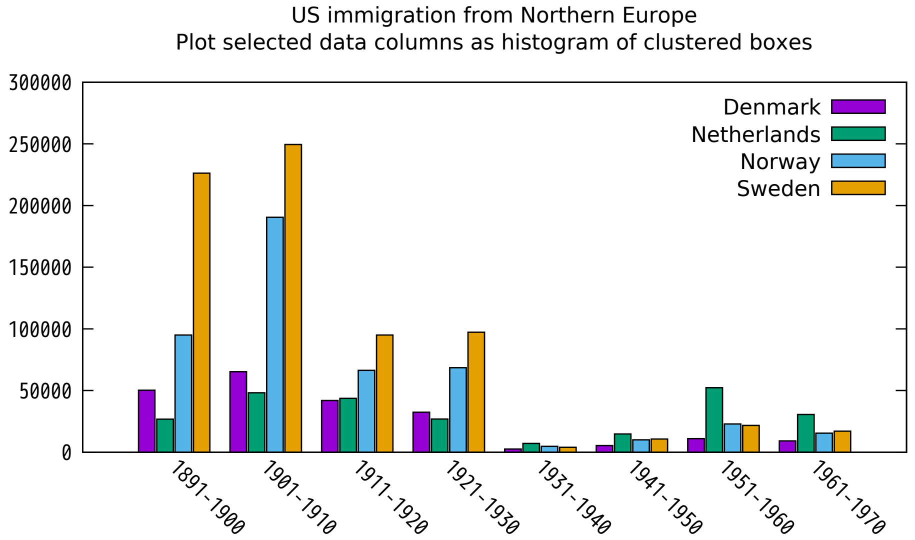


splot for [scan=1:*] 'whale.dat' index scan

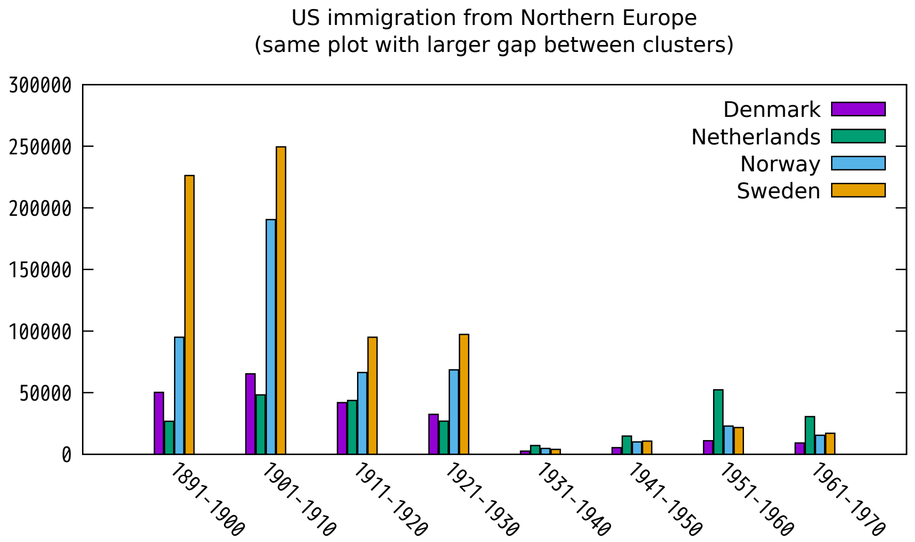

plot for [i=1:4] for [k=i:i] for [j=1:k] 10*k + cos(j*x)
Dynamic iteration limits
k=1 j=1
k=2 j=1
k=2 j=2
k=3 j=1
k=3 j=2
k=3 j=3
k=4 j=1
k=4 j=2
k=4 j=3
k=4 j=4
45
40
35
30
25
20
15
10
5
-10
-5
0
5
10



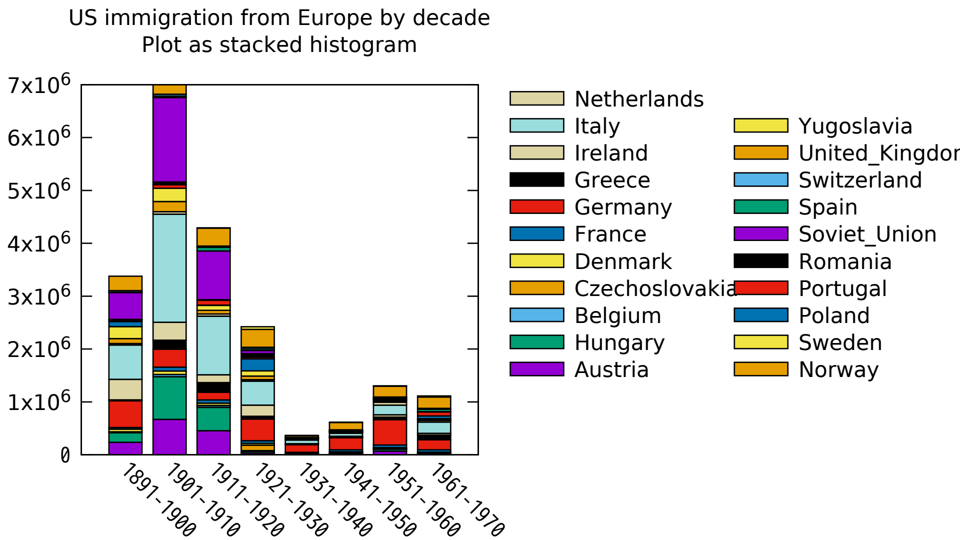
US immigration from Europe by decade
2.5x10^6
2x10^6
1.5x10^6
1x10^6
500000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Austria
Hungary
Belgium
Czechoslovakia
Denmark
France
Germany
Greece
Ireland
Italy
Netherlands
Norway
Sweden
Poland
Portugal
Romania
Soviet_Union
Spain
Switzerland
United_Kingdom
Yugoslavia



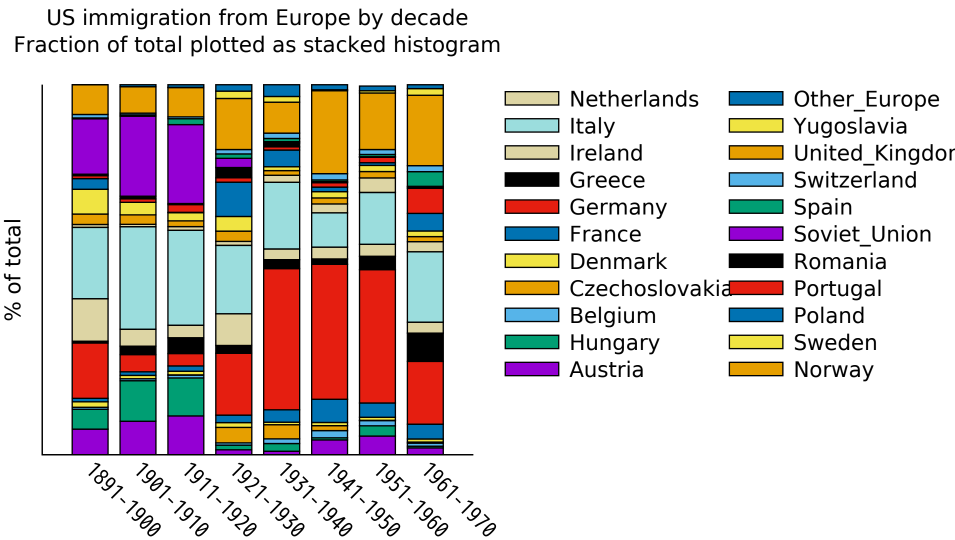
US immigration from Northern Europe
Plot selected data columns as histogram of clustered boxes
300000
250000
200000
150000
100000
50000
0
Denmark
Netherlands
Norway
Sweden
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970

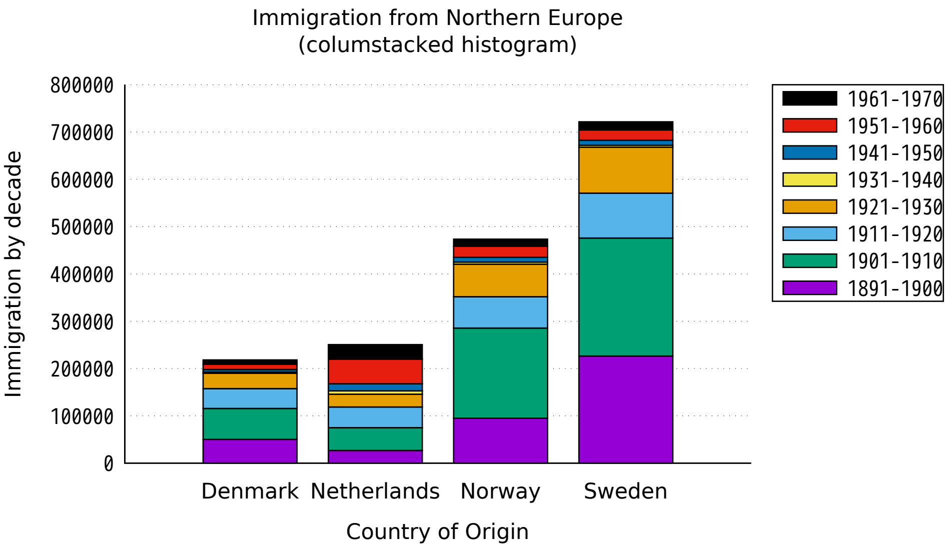


US immigration from Northern Europe
(same plot with larger gap between clusters)
300000
250000
200000
150000
100000
50000
0
Denmark
Netherlands
Norway
Sweden
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970

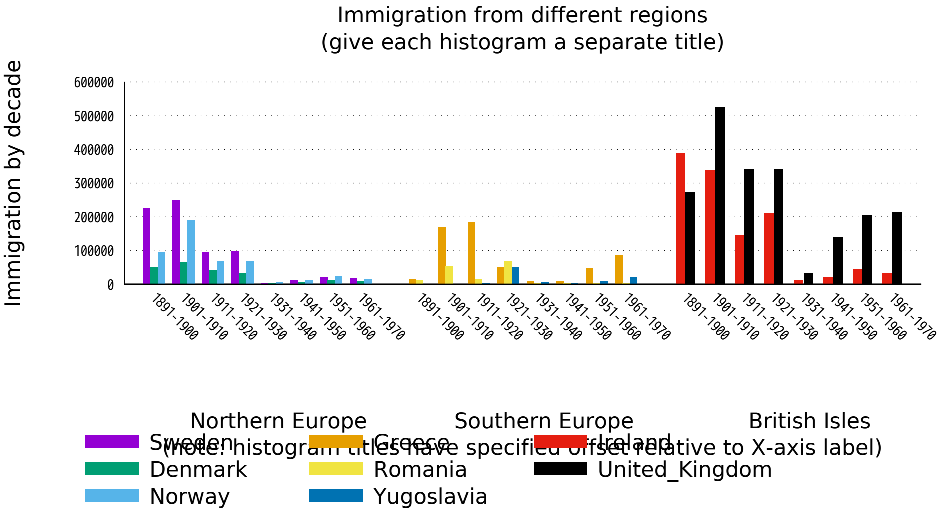


US immigration from Europe by decade
Plot as stacked histogram
7x10^6
6x10^6
5x10^6
4x10^6
3x10^6
2x10^6
1x10^6
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Netherlands
Italy
Ireland
Greece
Germany
France
Denmark
Czechoslovakia
Belgium
Hungary
Austria
Yugoslavia
United_Kingdom
Switzerland
Spain
Soviet_Union
Romania
Portugal
Poland
Sweden
Norway

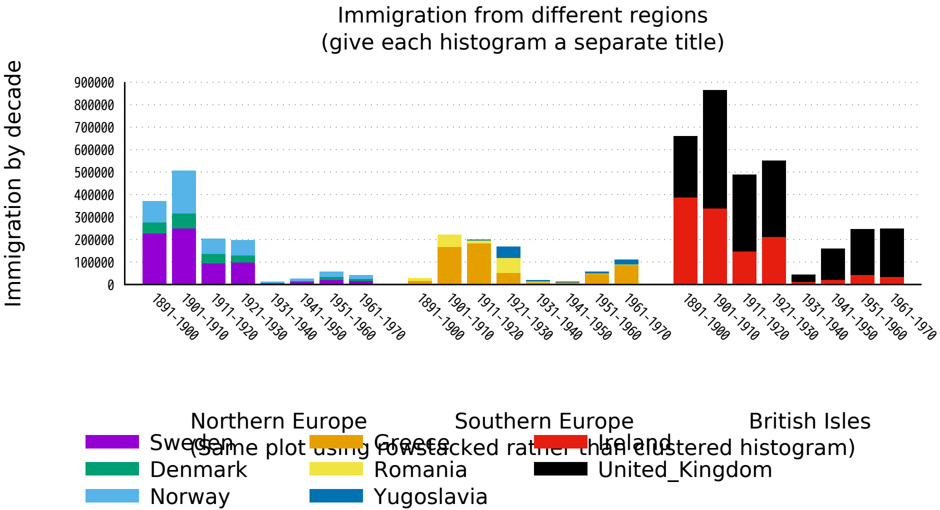

US immigration from Europe by decade
Fraction of total plotted as stacked histogram
% of total
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Netherlands
Italy
Ireland
Greece
Germany
France
Denmark
Czechoslovakia
Belgium
Hungary
Austria
Other_Europe
Yugoslavia
United_Kingdom
Switzerland
Spain
Soviet_Union
Romania
Portugal
Poland
Sweden
Norway



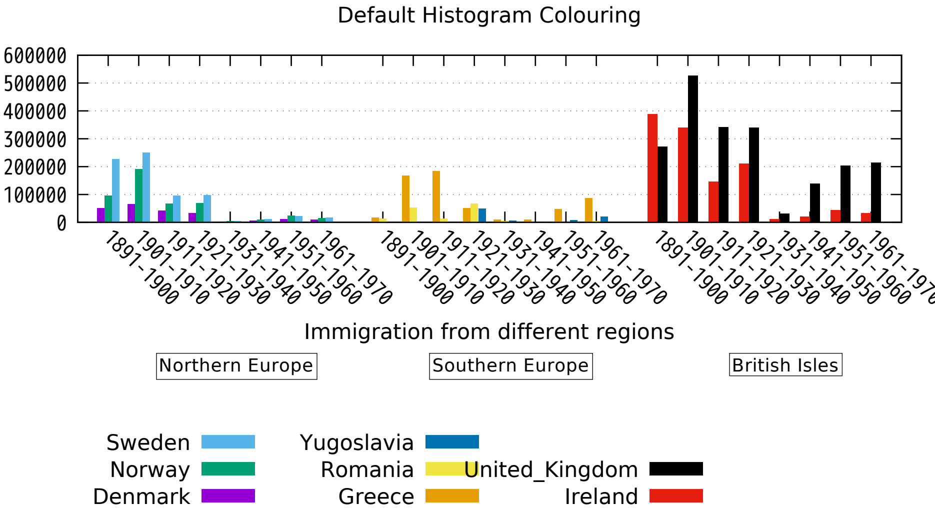
Immigration from Northern Europe
(columstacked histogram)
Immigration by decade
800000
700000
600000
500000
400000
300000
200000
100000
0
Denmark
Netherlands
Norway
Sweden
Country of Origin
1961-1970
1951-1960
1941-1950
1931-1940
1921-1930
1911-1920
1901-1910
1891-1900



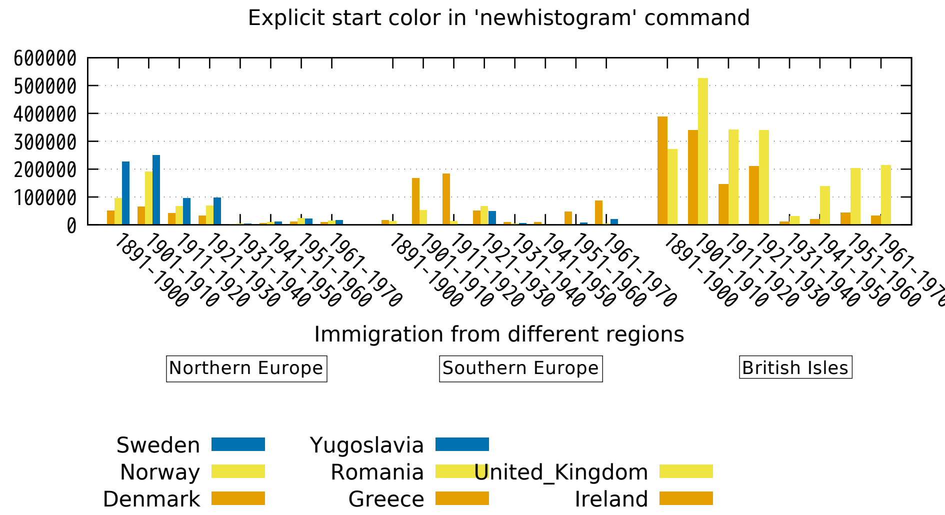
Immigration from different regions
(give each histogram a separate title)
Immigration by decade
600000
500000
400000
300000
200000
100000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Northern Europe
Southern Europe
British Isles
(note: histogram titles have specified offset relative to X-axis label)
Sweden
Denmark
Norway
Greece
Romania
Yugoslavia
Ireland
United_Kingdom

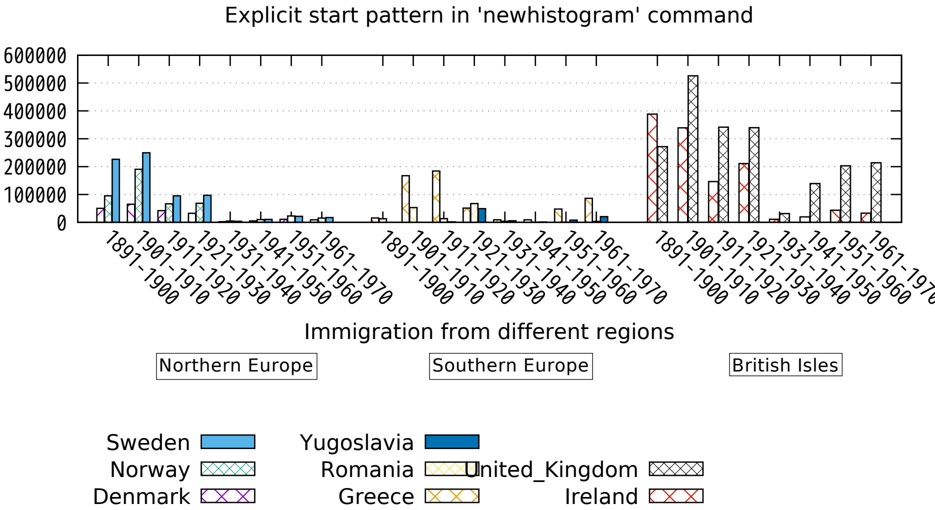


Immigration from different regions
(give each histogram a separate title)
Immigration by decade
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Northern Europe
Southern Europe
British Isles
(Same plot using rowstacked rather than clustered histogram)
Sweden
Denmark
Norway
Greece
Romania
Yugoslavia
Ireland
United_Kingdom

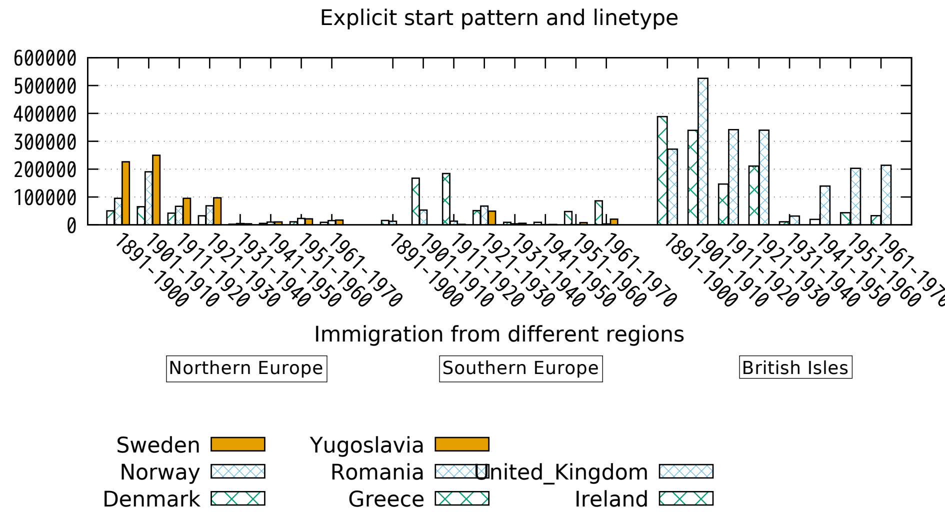


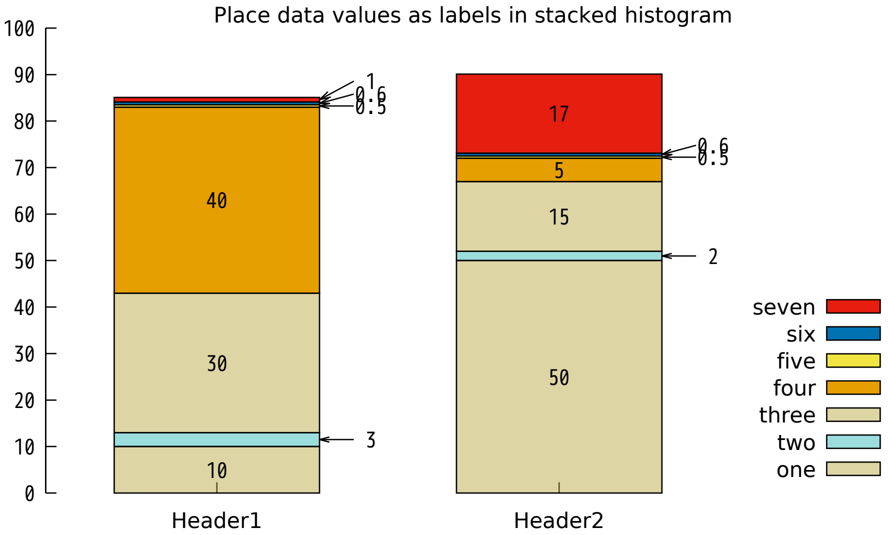
Default Histogram Colouring
600000
500000
400000
300000
200000
100000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Immigration from different regions
Northern Europe
Southern Europe
British Isles
Sweden
Norway
Denmark
Yugoslavia
Romania
Greece
United_Kingdom
Ireland


Explicit start color in 'newhistogram' command
600000
500000
400000
300000
200000
100000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Immigration from different regions
Northern Europe
Southern Europe
British Isles
Sweden
Norway
Denmark
Yugoslavia
Romania
Greece
United_Kingdom
Ireland

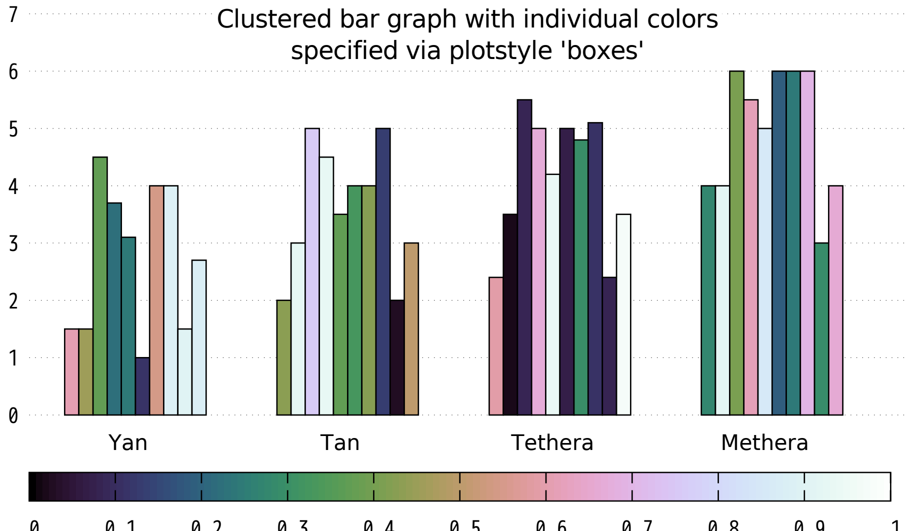


Explicit start pattern in 'newhistogram' command
600000
500000
400000
300000
200000
100000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Immigration from different regions
Northern Europe
Southern Europe
British Isles
Sweden
Norway
Denmark
Yugoslavia
Romania
Greece
United_Kingdom
Ireland

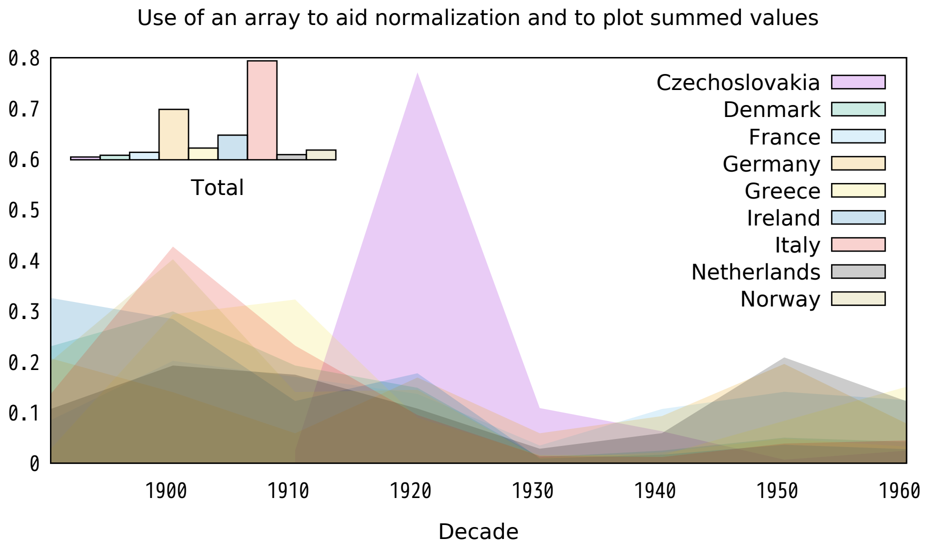

Explicit start pattern and linetype
600000
500000
400000
300000
200000
100000
0
1891-1900
1901-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
Immigration from different regions
Northern Europe
Southern Europe
British Isles
Sweden
Norway
Denmark
Yugoslavia
Romania
Greece
United_Kingdom
Ireland

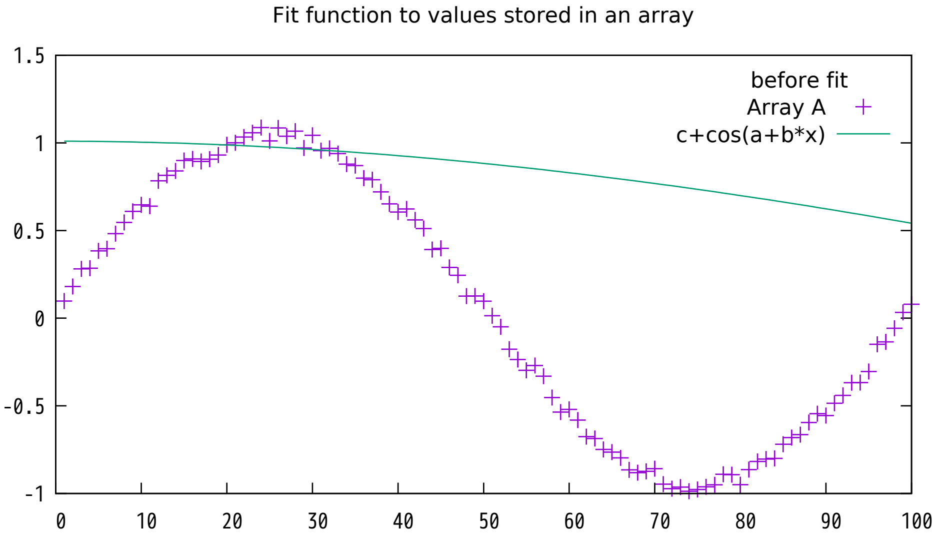


Place data values as labels in stacked histogram
100
90
80
70
60
50
40
30
20
10
0
1
0.6
0.5
40
30
3
10
17
0.6
0.5
5
15
2
50
seven
six
five
four
three
two
one
Header1
Header2

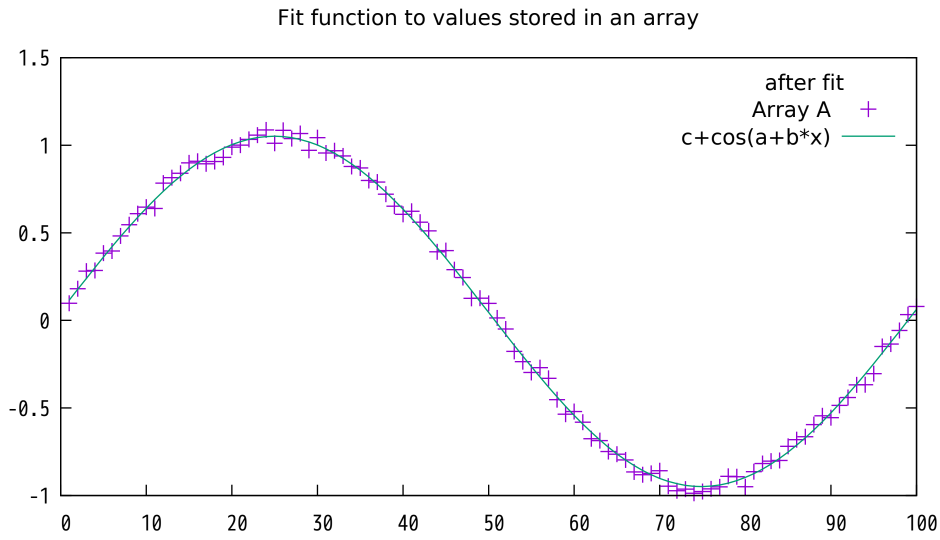


Clustered bar graph with individual colors
specified via plotstyle 'boxes'
0
1
2
3
4
5
6
7
Yan
Tan
Tethera
Methera
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

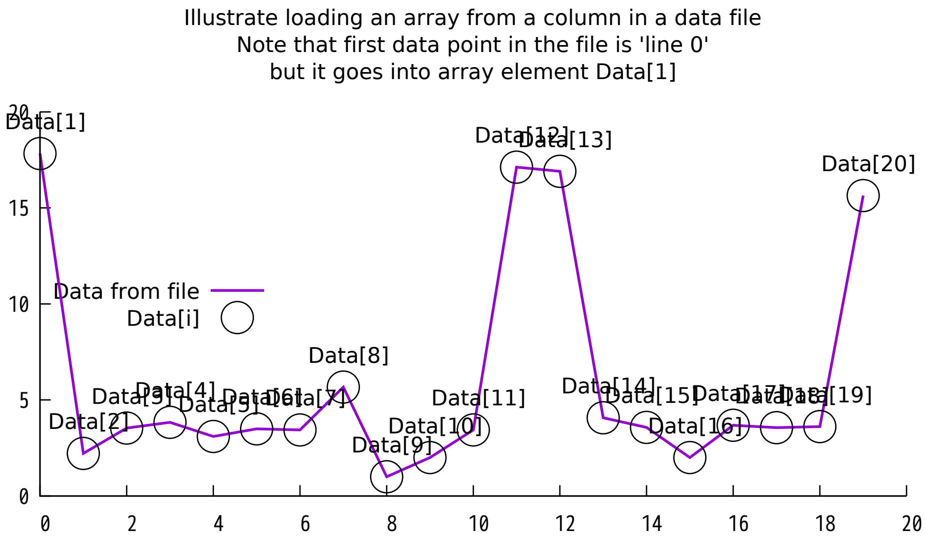

Use of an array to aid normalization and to plot summed values
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Total
Czechoslovakia
Denmark
France
Germany
Greece
Ireland
Italy
Netherlands
Norway
1900
1910
1920
1930
1940
1950
1960
Decade



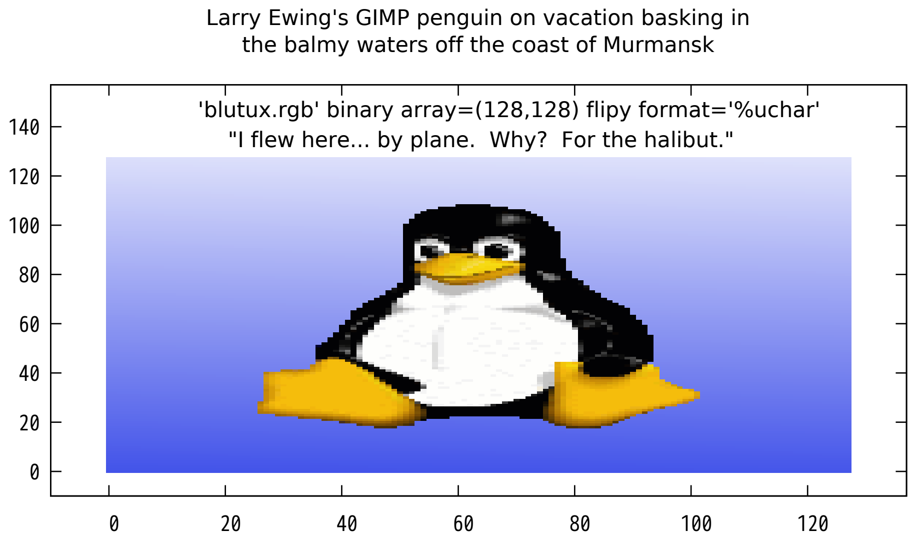
Fit function to values stored in an array
before fit
Array A
c+cos(a+b*x)
1.5
1
0.5
0
-0.5
-1
0
10
20
30
40
50
60
70
80
90
100

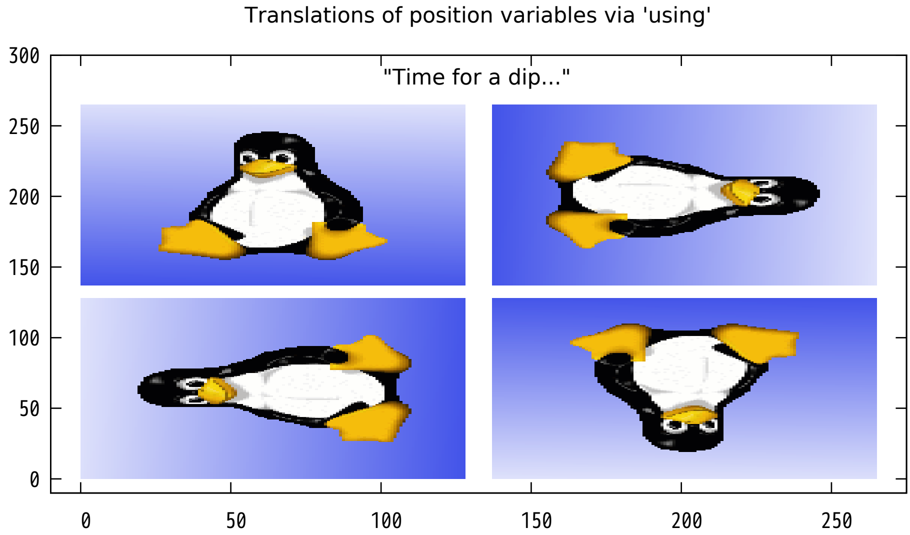


Fit function to values stored in an array
after fit
Array A
c+cos(a+b*x)
1.5
1
0.5
0
-0.5
-1
0
10
20
30
40
50
60
70
80
90
100



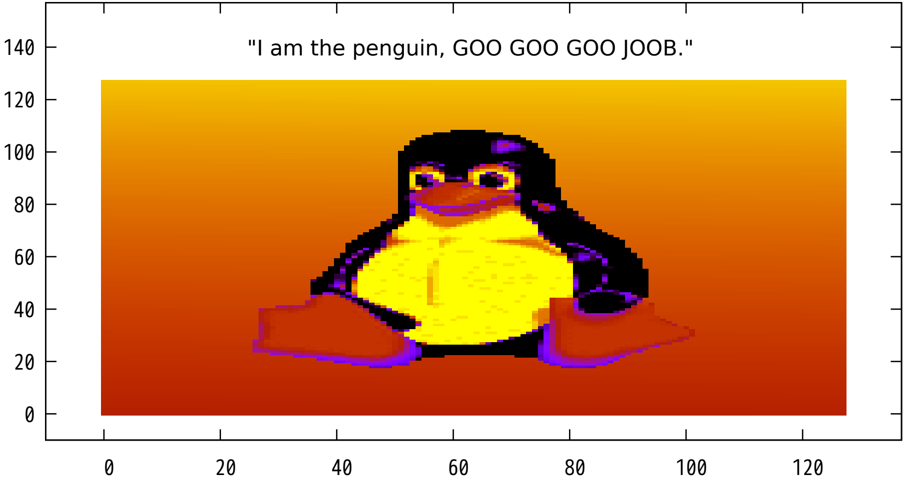
Illustrate loading an array from a column in a data file
Note that first data point in the file is 'line 0'
but it goes into array element Data[1]
Data from file
Data[i]
Data[1]
Data[2]
Data[3]
Data[4]
Data[5]
Data[6]
Data[7]
Data[8]
Data[9]
Data[10]
Data[11]
Data[12]
Data[13]
Data[14]
Data[15]
Data[16]
Data[17]
Data[18]
Data[19]
Data[20]
0
5
10
15
20
0
2
4
6
8
10
12
14
16
18
20

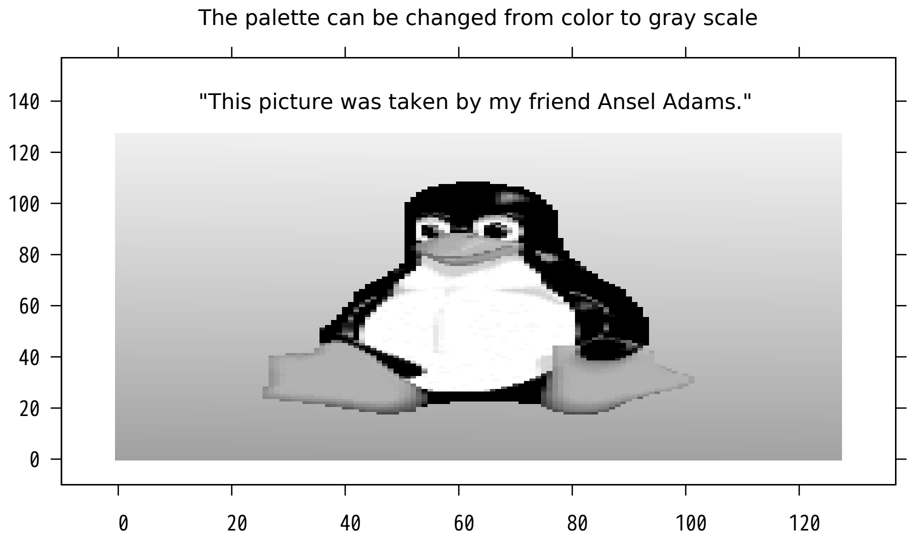

Larry Ewing's GIMP penguin on vacation basking in
the balmy waters off the coast of Murmansk
'blutux.rgb' binary array=(128,128) flipy format='%uchar'
"I flew here... by plane. Why? For the halibut."
140
120
100
80
60
40
20
0
0
20
40
60
80
100
120



Translations of position variables via 'using'
"Time for a dip..."
300
250
200
150
100
50
0
0
50
100
150
200
250

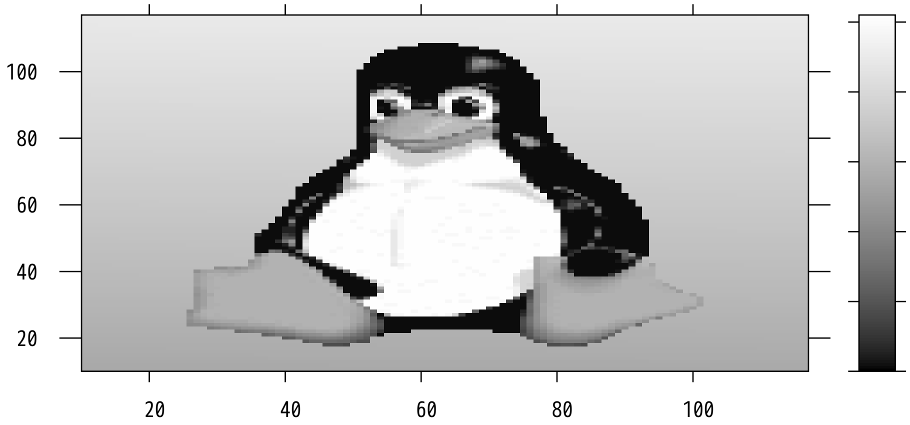
Palette mode 'image' used to produce psychedelic bird



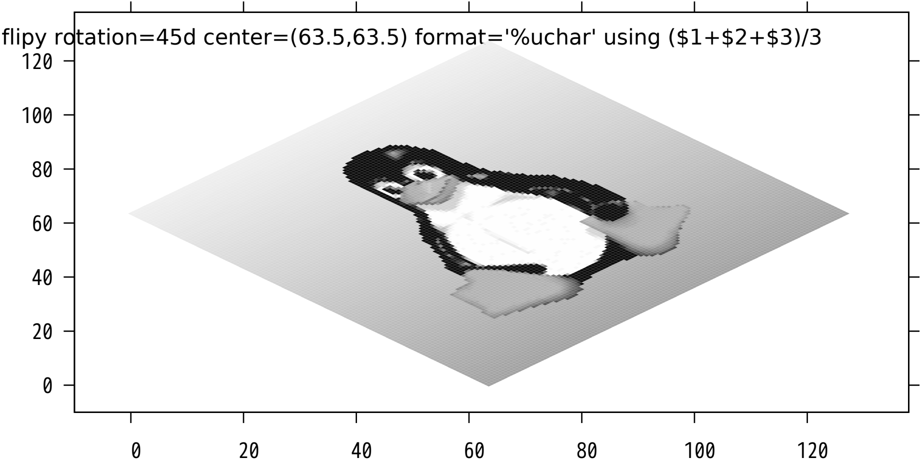


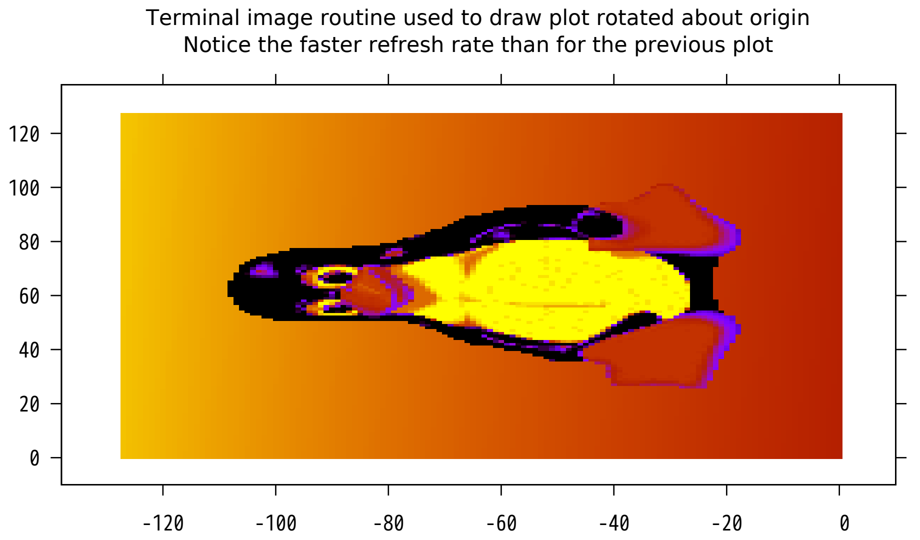
The palette can be changed from color to gray scale
"This picture was taken by my friend Ansel Adams."
0
20
40
60
80
100
120
140

As with 3d color surfaces, a color box may be added to the plot

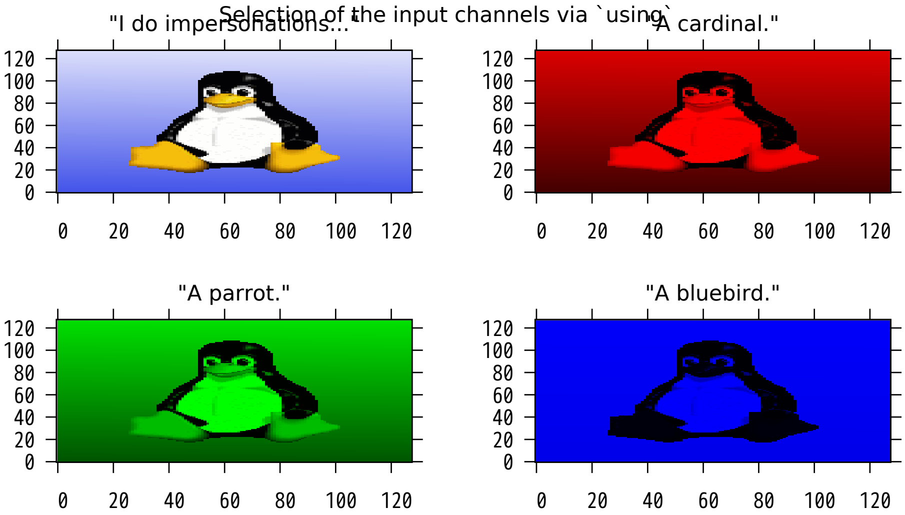


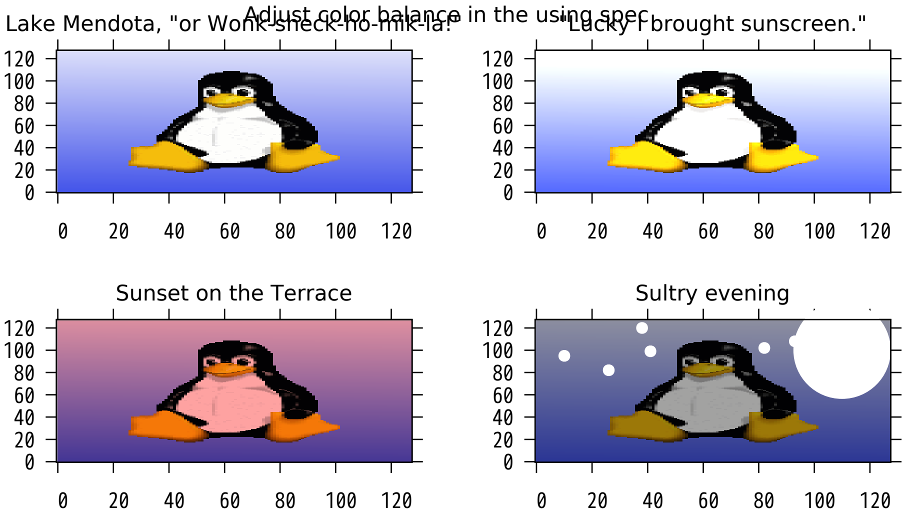
Polygons used to draw pixels for rotated images
Notice the slower refresh rate than for the next plot

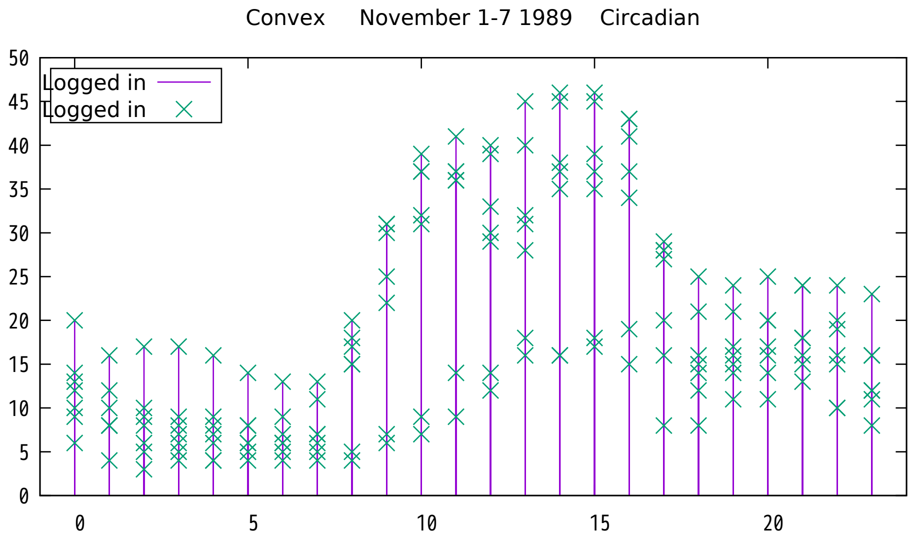




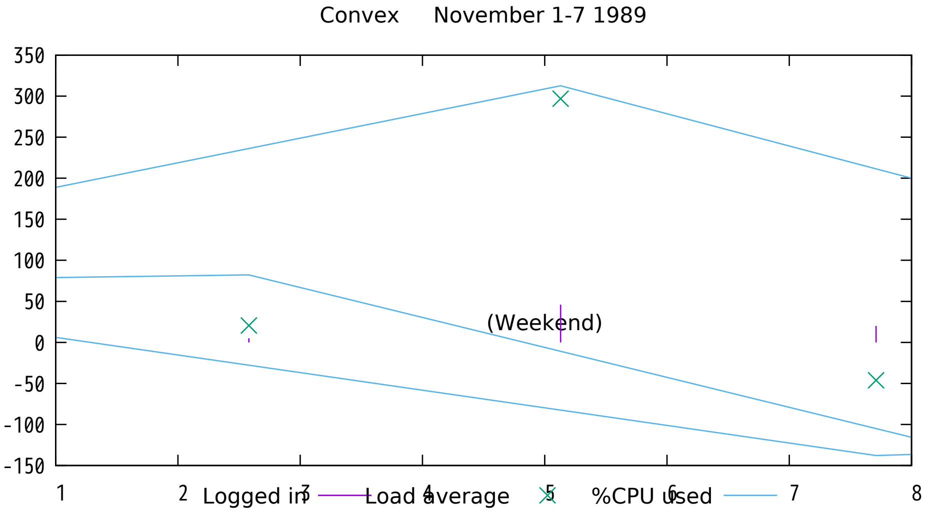
Terminal image routine used to draw plot rotated about origin
Notice the faster refresh rate than for the previous plot
120
100
80
60
40
20
0
-120
-100
-80
-60
-40
-20
0


Selection of the input channels via `using`
"I do impersonations..."
"A cardinal."
"A parrot."
"A bluebird."
0
20
40
60
80
100
120

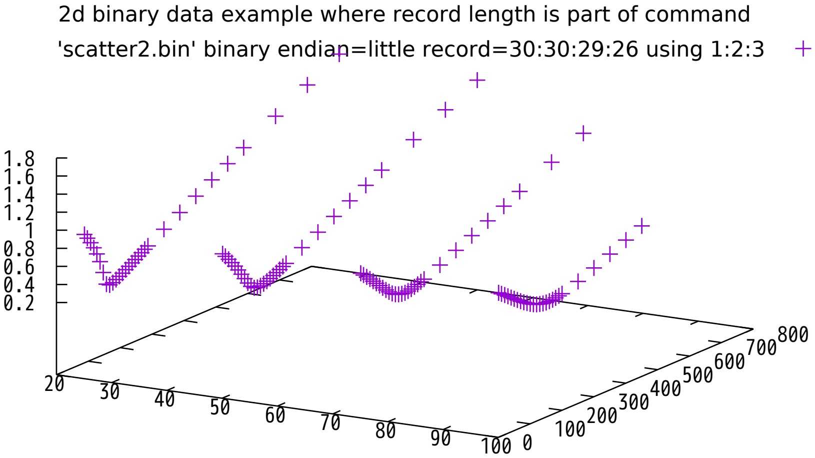

Adjust color balance in the using spec
Lake Mendota, "or Wonk-sheck-ho-mik-la!"
"Lucky I brought sunscreen."
Sunset on the Terrace
Sultry evening
0
20
40
60
80
100
120

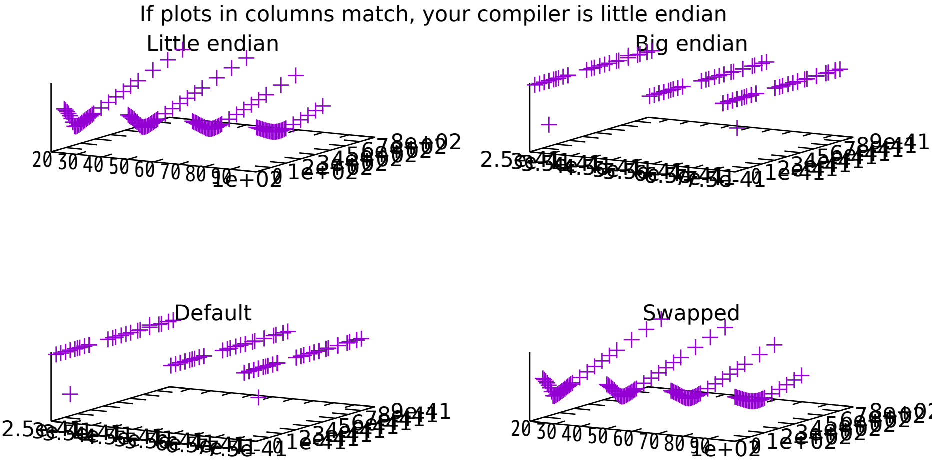


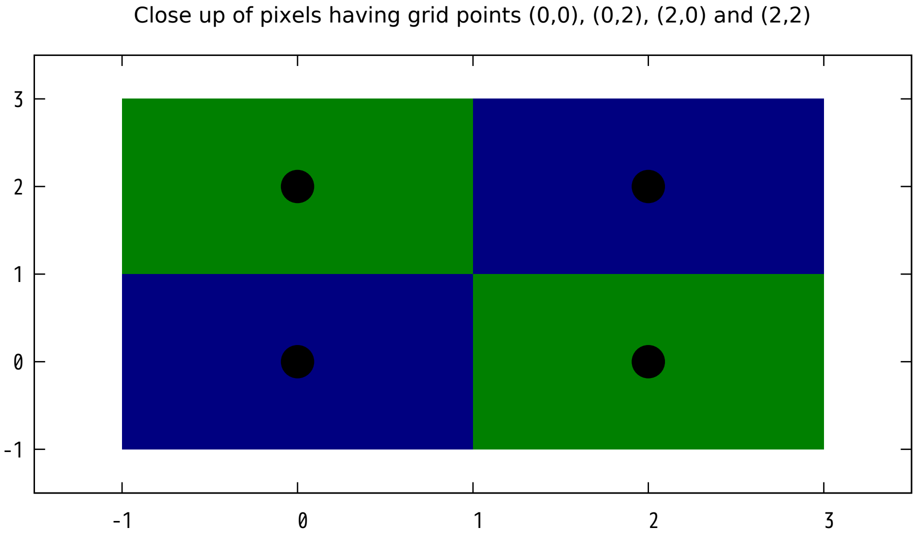
Convex November 1-7 1989 Circadian
Logged in
Logged in
0
5
10
15
20
25
30
35
40
45
50
0
5
10
15
20



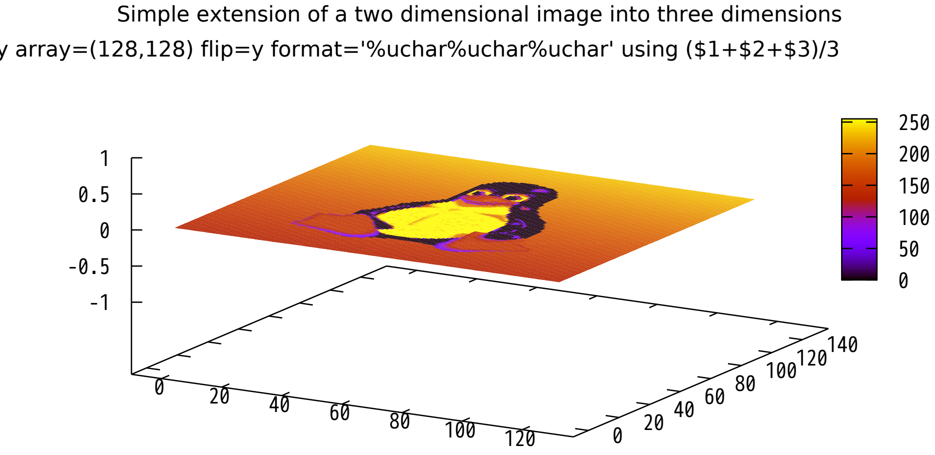
Convex November 1-7 1989
350
300
250
200
150
100
50
0
-50
-100
-150
1
2
3
4
5
6
7
8
(Weekend)
Logged in
Load average
%CPU used

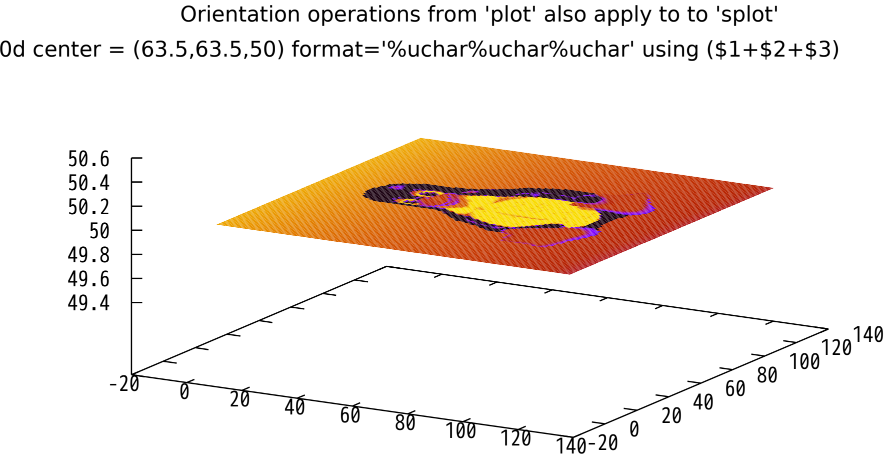

2d binary data example where record length is part of command
'scatter2.bin' binary endian=little record=30:30:29:26 using 1:2:3
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800


If plots in columns match, your compiler is little endian
Little endian
Big endian
Default
Swapped

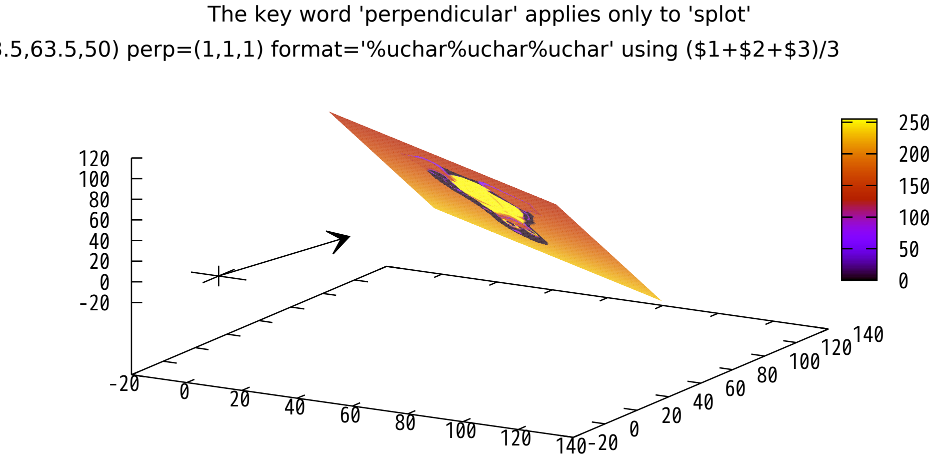


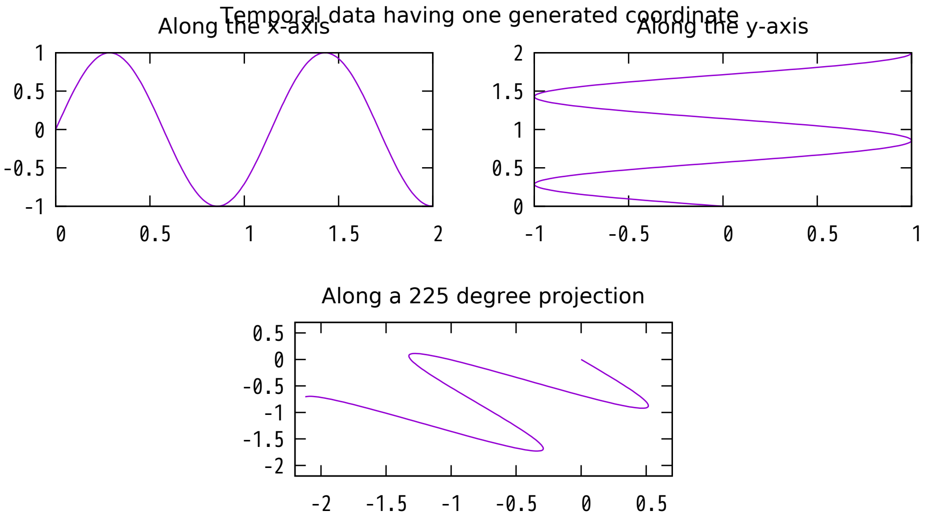
Close up of pixels having grid points (0,0), (0,2), (2,0) and (2,2)
3
2
1
0
-1
-1
0
1
2
3


Simple extension of a two dimensional image into three dimensions
y array=(128,128) flip=y format='%uchar%uchar%uchar' using ($1+$2+$3)/3
1
0.5
0
-0.5
-1
0
20
40
60
80
100
120
0
20
40
60
80
100
120
140
250
200
150
100
50
0

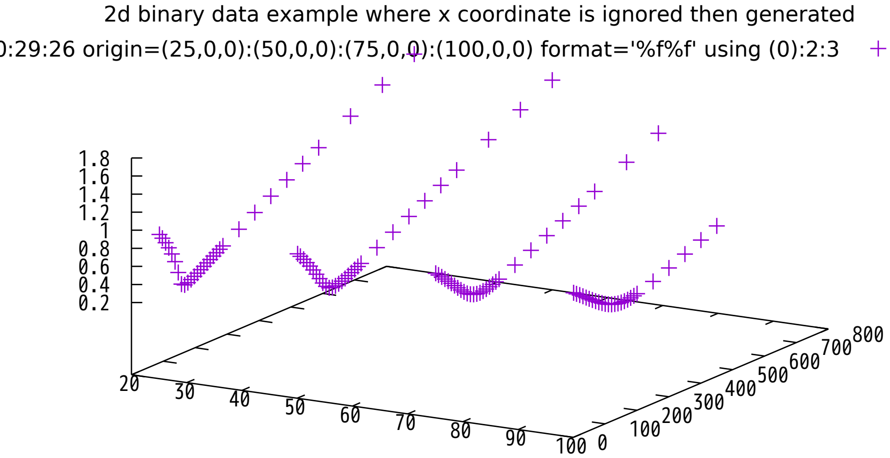


Orientation operations from 'plot' also apply to to 'splot'
0d center = (63.5,63.5,50) format='%uchar%uchar%uchar' using ($1+$2+$3)
50.6
50.4
50.2
50
49.8
49.6
49.4
-20
0
20
40
60
80
100
120
140
-20
0
20
40
60
80
100
120
140

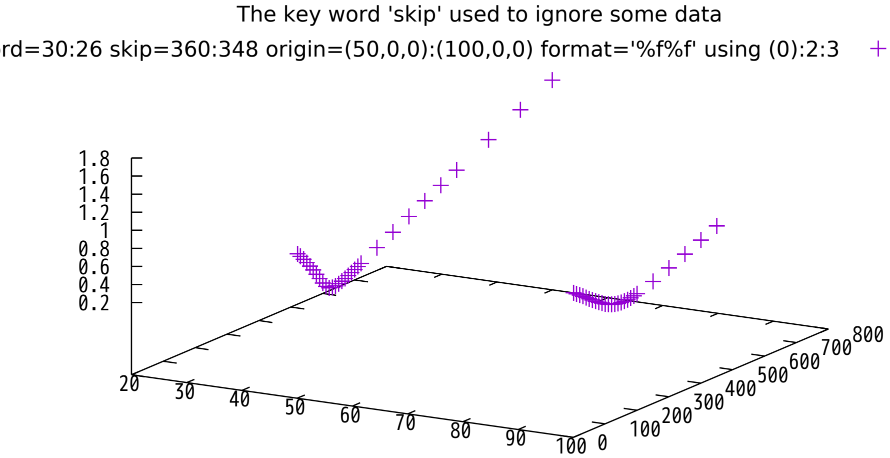

The key word 'perpendicular' applies only to 'splot'
.5,63.5,50) perp=(1,1,1) format='%uchar%uchar%uchar' using ($1+$2+$3)/3
120
100
80
60
40
20
0
-20
-20
0
20
40
60
80
100
120
140
-20
0
20
40
60
80
100
120
140
250
200
150
100
50
0



Temporal data having one generated coordinate
Along the x-axis
1
0.5
0
-0.5
-1
0
0.5
1
1.5
2
Along the y-axis
2
1.5
1
0.5
0
-1
-0.5
0
0.5
1
Along a 225 degree projection
0.5
0
-0.5
-1
-1.5
-2
-2
-1.5
-1
-0.5
0
0.5

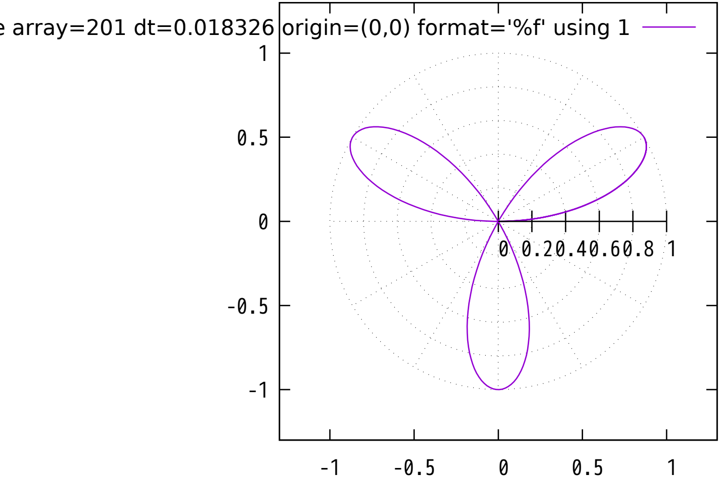


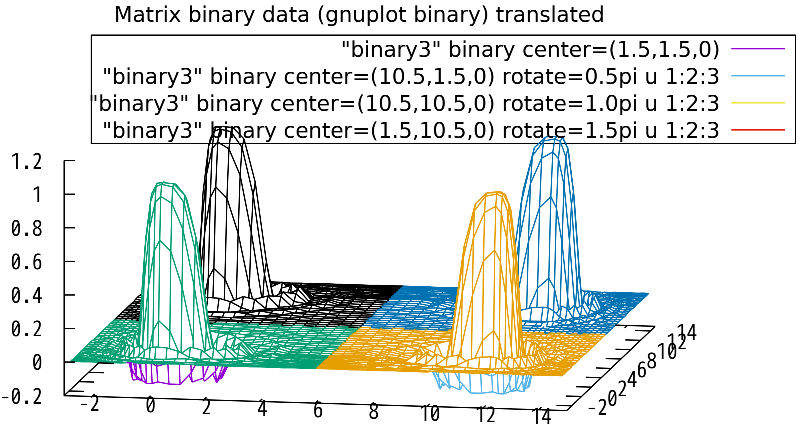
2d binary data example where x coordinate is ignored then generated
0:29:26 origin=(25,0,0):(50,0,0):(75,0,0):(100,0,0) format='%f%f' using (0):2:3
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800



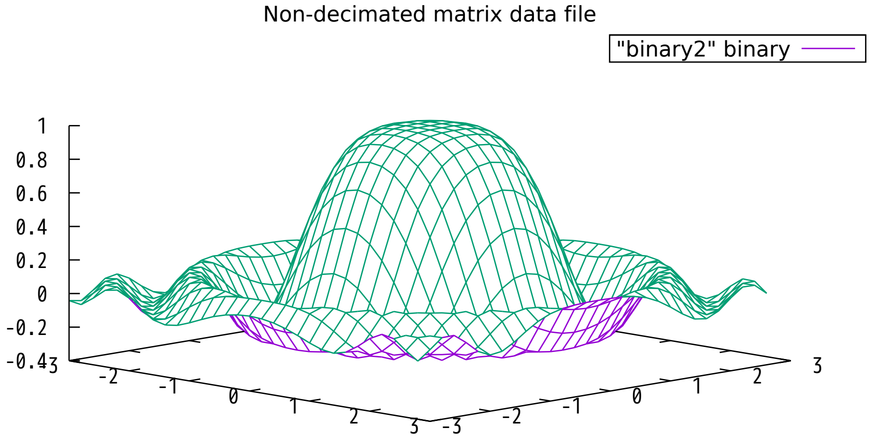
The key word 'skip' used to ignore some data
rd=30:26 skip=360:348 origin=(50,0,0):(100,0,0) format='%f%f' using (0):2:3
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800

Uniform sampling in the polar coordinate system

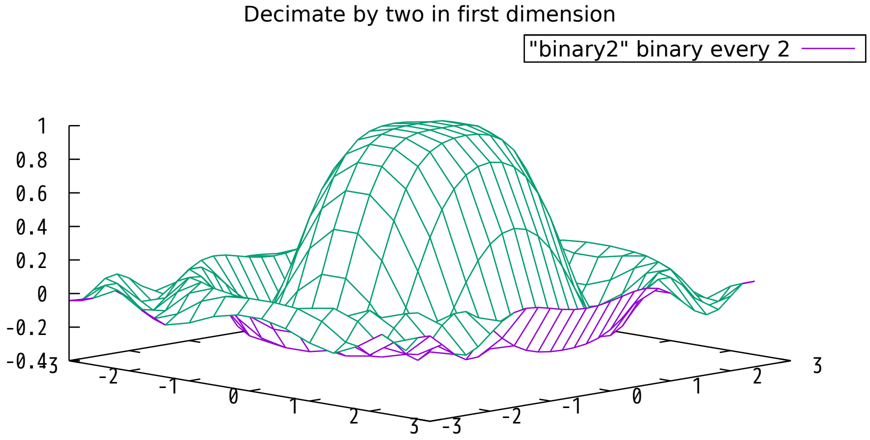




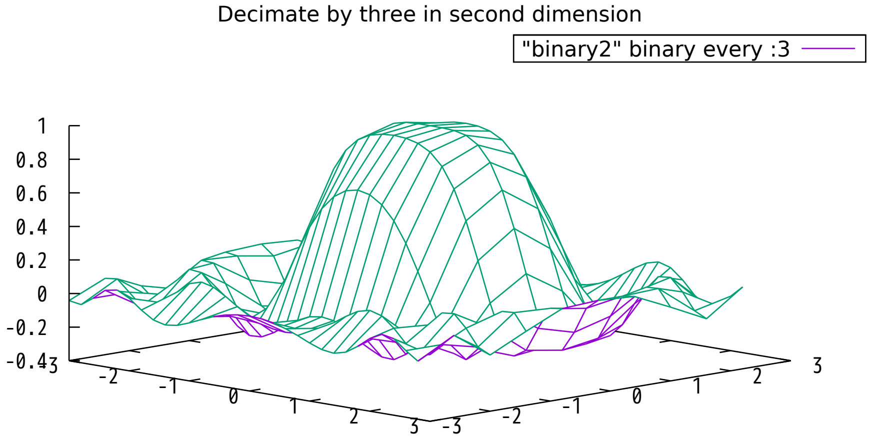
Matrix binary data (gnuplot binary) translated
"binary3" binary center=(1.5,1.5,0)
"binary3" binary center=(10.5,1.5,0) rotate=0.5pi u 1:2:3
"binary3" binary center=(10.5,10.5,0) rotate=1.0pi u 1:2:3
"binary3" binary center=(1.5,10.5,0) rotate=1.5pi u 1:2:3
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-2
0
2
4
6
8
10
12
14



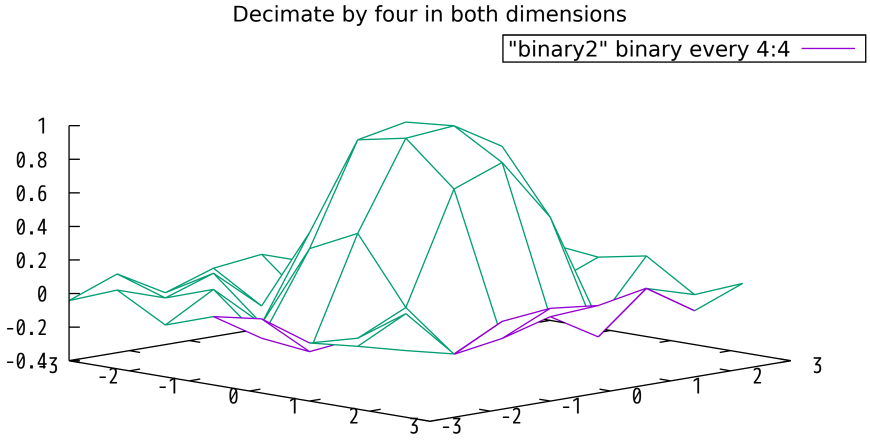
Non-decimated matrix data file
"binary2" binary
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3



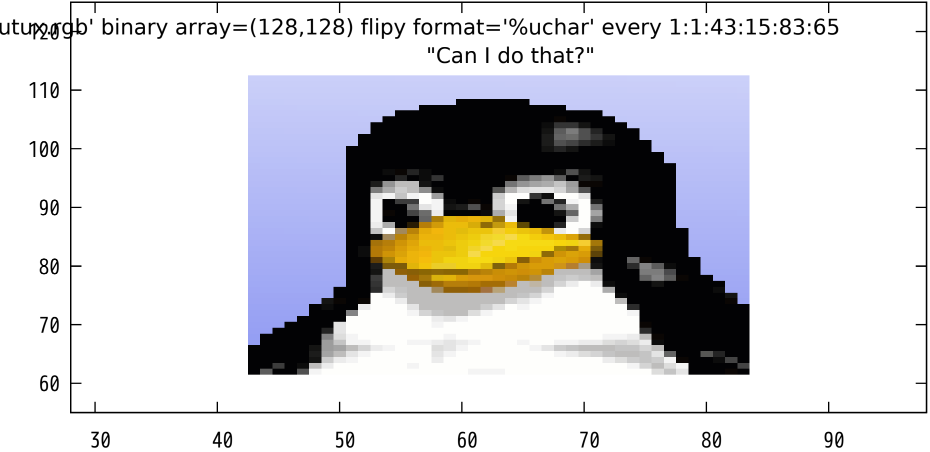
Decimate by two in first dimension
"binary2" binary every 2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3



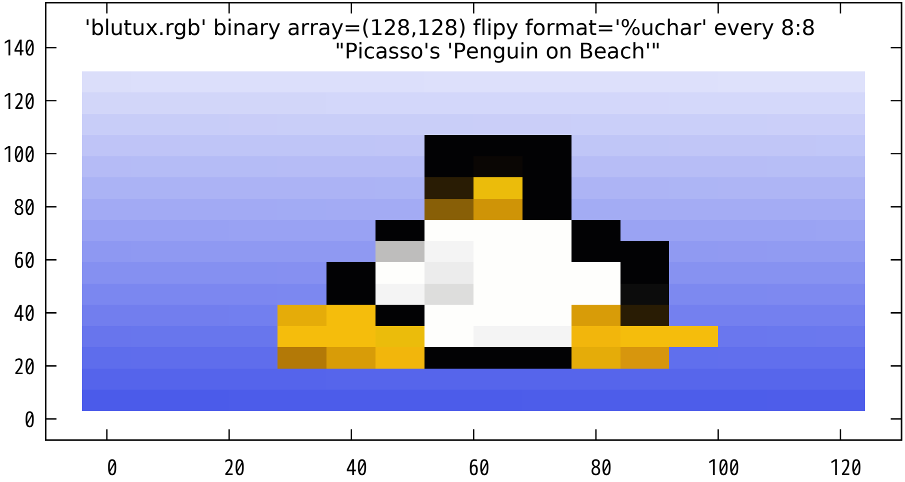
Decimate by three in second dimension
"binary2" binary every :3
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3

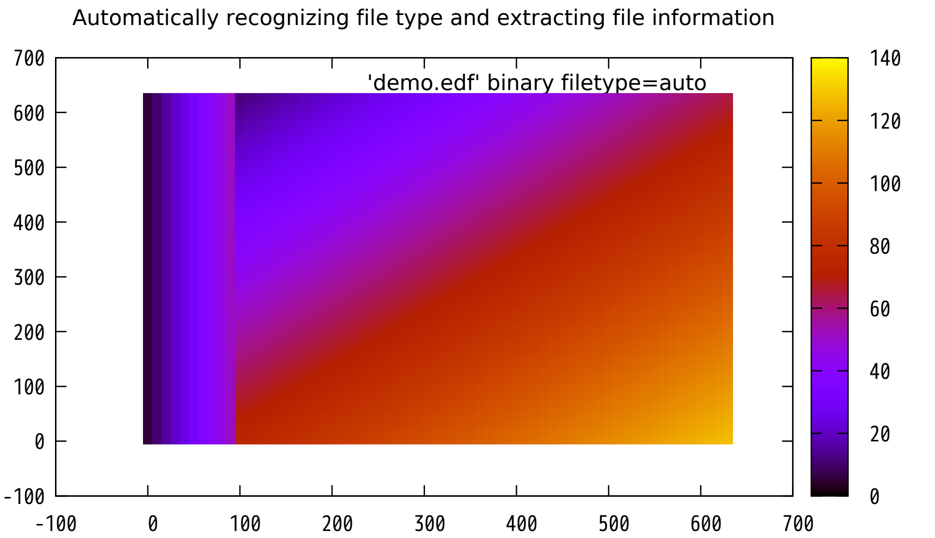

Decimate by four in both dimensions
"binary2" binary every 4:4
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-3
-2
-1
0
1
2
3
-3
-2
-1
0
1
2
3

Decimation works on general binary data files as well.
Let Tux have his fun...

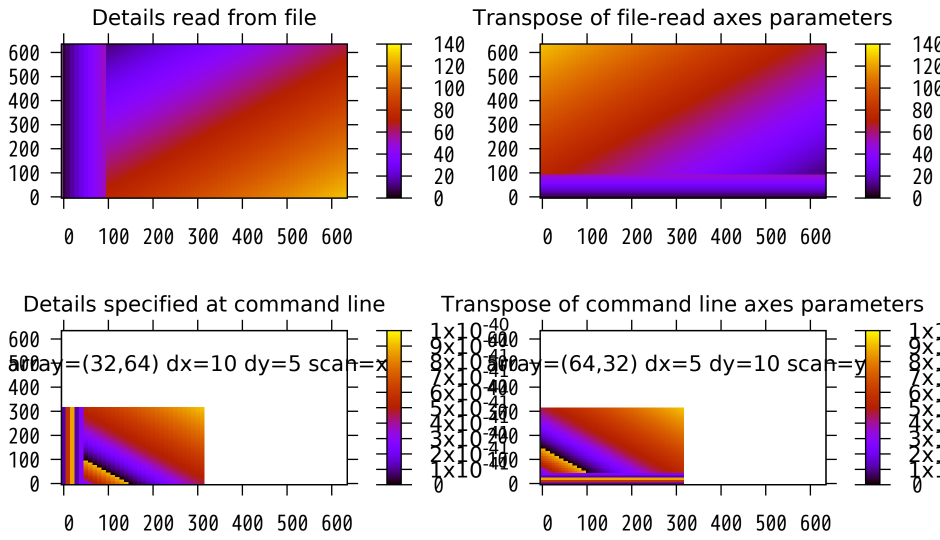


... Sure, go ahead.



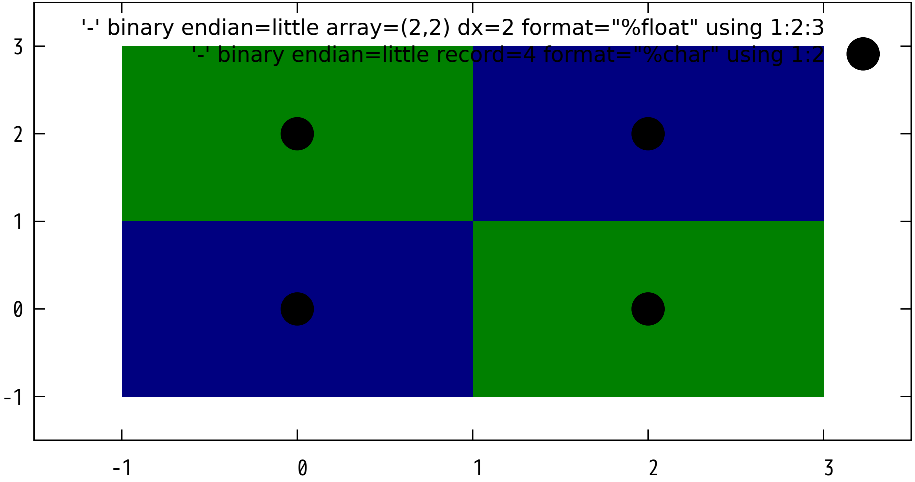


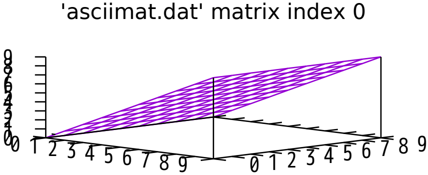
Automatically recognizing file type and extracting file information
'demo.edf' binary filetype=auto
700
600
500
400
300
200
100
0
-100
-100
0
100
200
300
400
500
600
700
140
120
100
80
60
40
20
0

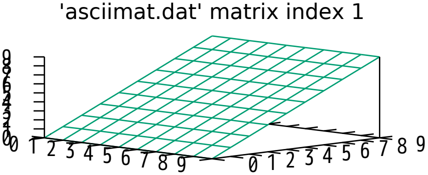


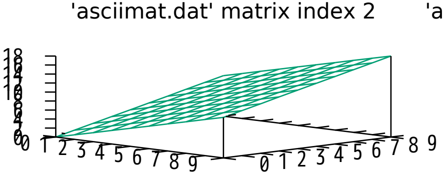
Details read from file
Transpose of file-read axes parameters
Details specified at command line
array=(32,64) dx=10 dy=5 scan=x
Transpose of command line axes parameters
array=(64,32) dx=5 dy=10 scan=y

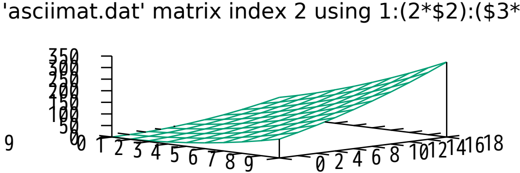
Binary data specified at the command line, intended for use through pipe

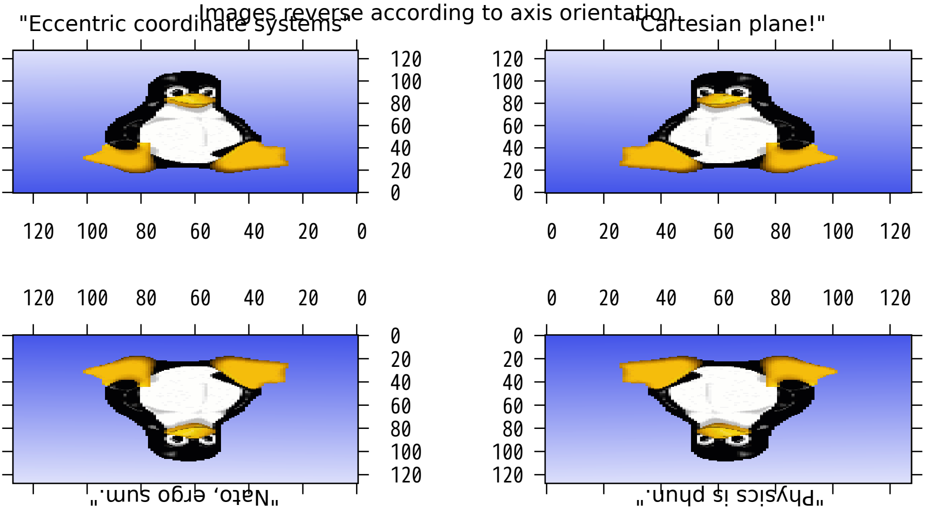



'asciimat.dat' matrix index 0

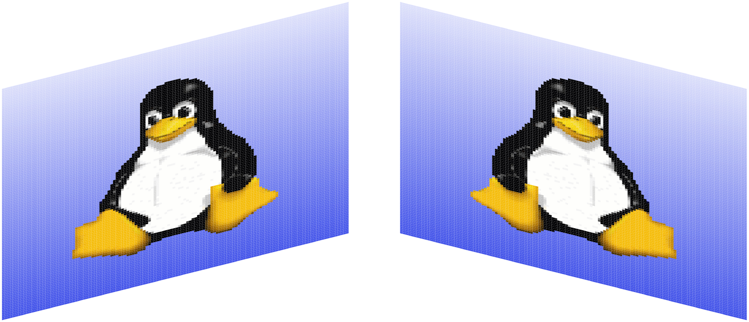

'asciimat.dat' matrix index 1


'asciimat.dat' matrix index 2

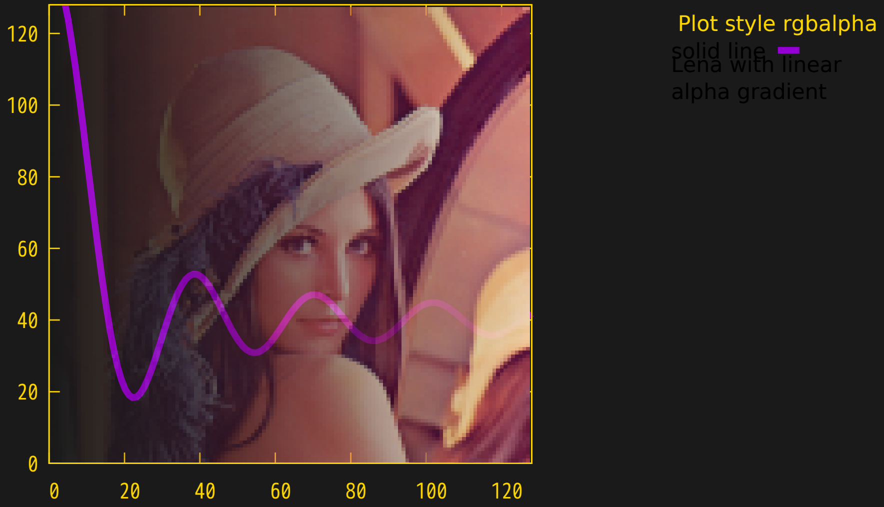

'asciimat.dat' matrix index 2 using 1:(2*$2):($3*



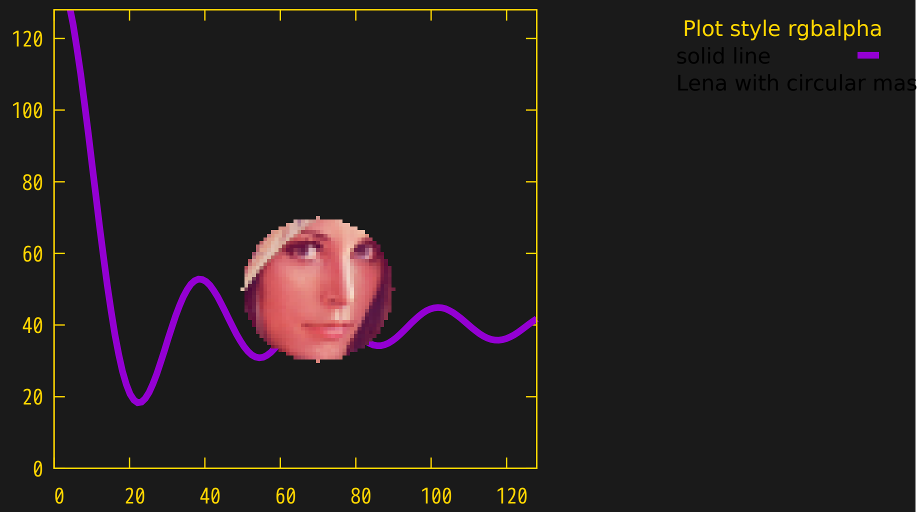
Images reverse according to axis orientation
"Eccentric coordinate systems"
"Cartesian plane!"
"Nato, ergo sum."
"Physics is phun."
0
20
40
60
80
100
120



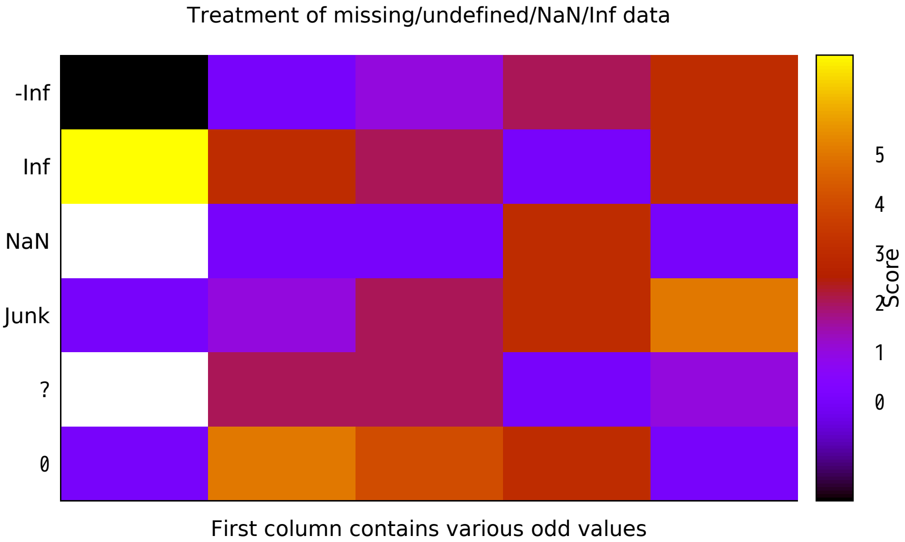
Tux in a reflective mood



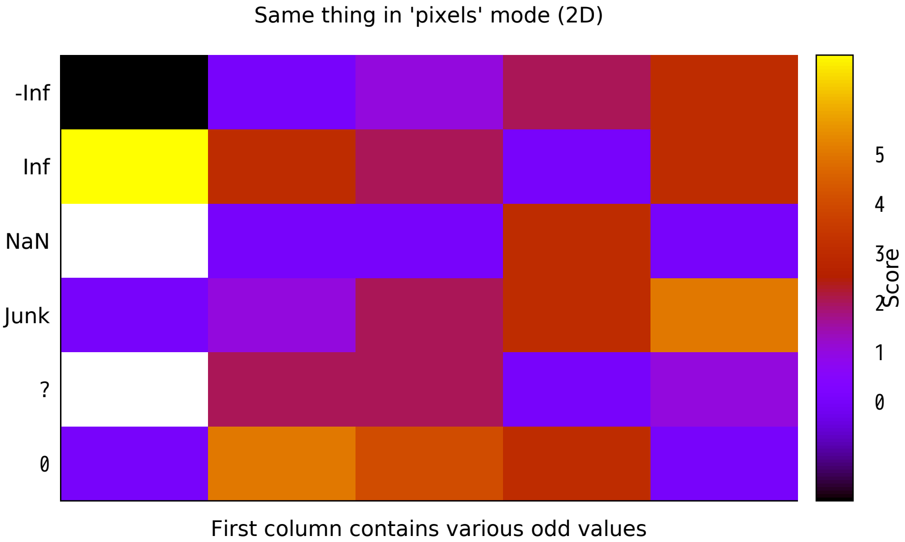
Plot style rgbalpha
solid line
Lena with linear alpha gradient
0
20
40
60
80
100
120



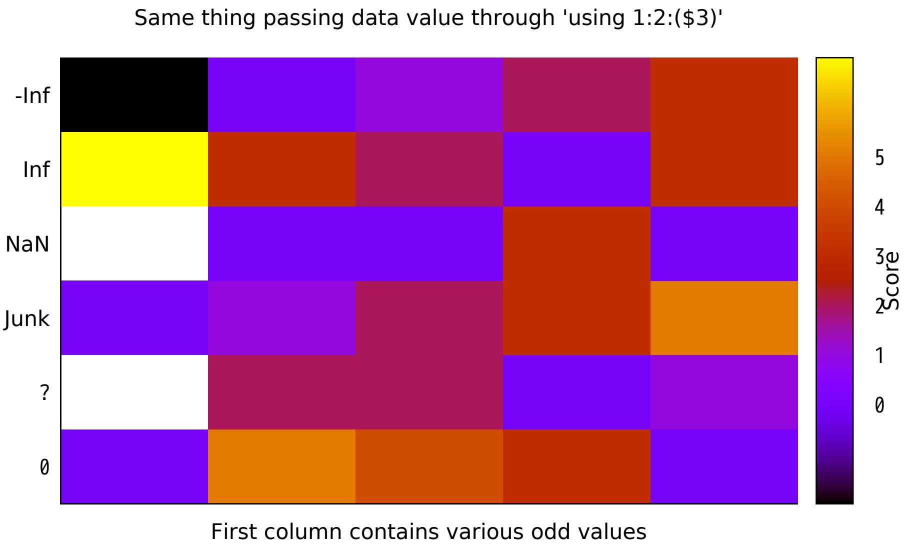
Plot style rgbalpha
solid line
Lena with circular mas
120
100
80
60
40
20
0
0
20
40
60
80
100
120



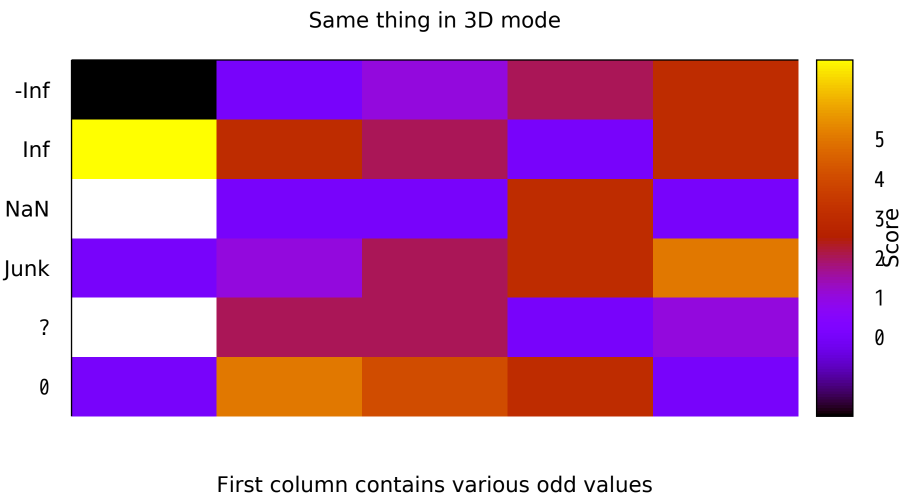
Treatment of missing/undefined/NaN/Inf data
-Inf
Inf
NaN
Junk
?
0
5
4
3
2
1
0
Score
First column contains various odd values



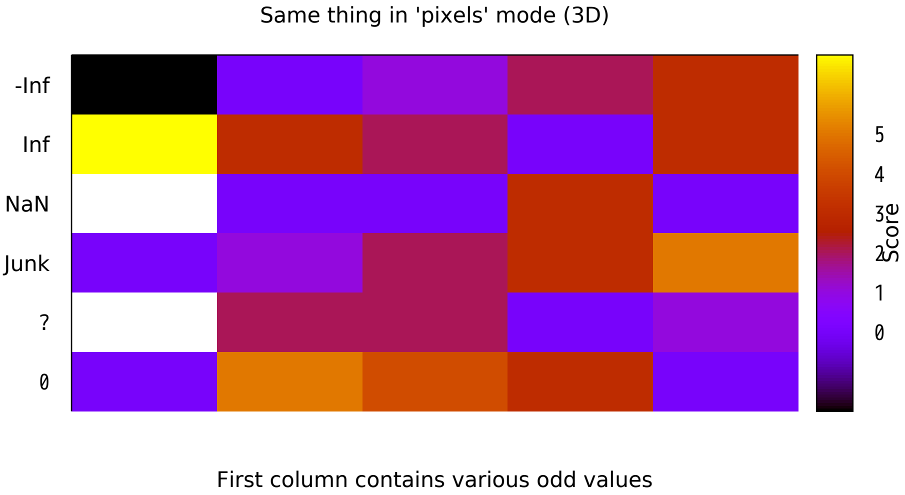
Same thing in 'pixels' mode (2D)
-Inf
Inf
NaN
Junk
?
0
5
4
3
2
1
0
Score
First column contains various odd values

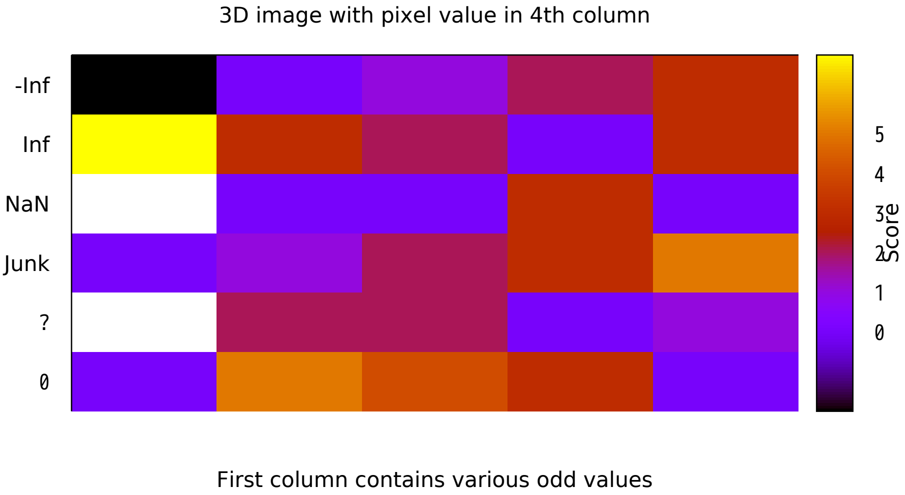


Same thing passing data value through 'using 1:2:($3)'
-Inf
Inf
NaN
Junk
?
0
5
4
3
2
1
0
Score
First column contains various odd values



Same thing in 3D mode
-Inf
Inf
NaN
Junk
?
0
5
4
3
2
1
0
Score
First column contains various odd values


Same thing in 'pixels' mode (3D)
-Inf
Inf
NaN
Junk
?
0
5
4
3
2
1
0
Score
First column contains various odd values


3D image with pixel value in 4th column
-Inf
Inf
NaN
Junk
?
0
5
4
3
2
1
0
Score
First column contains various odd values

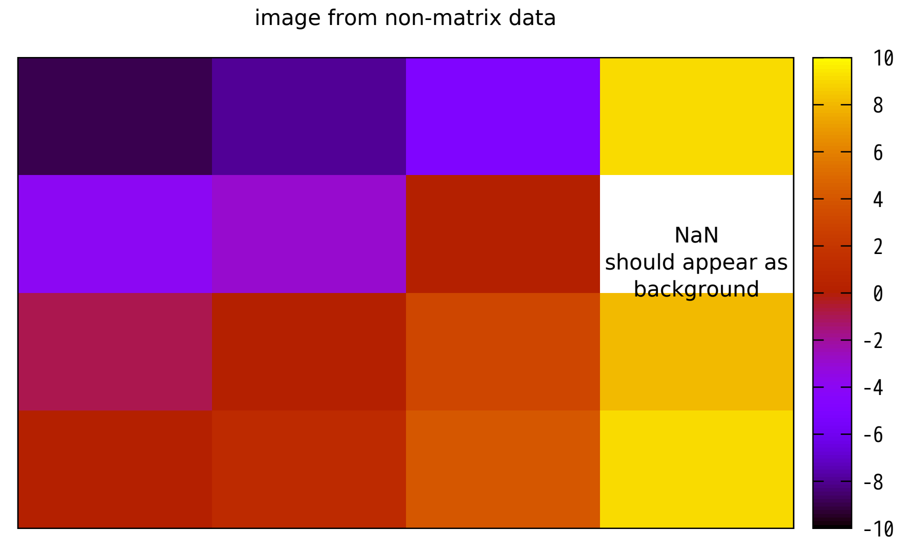
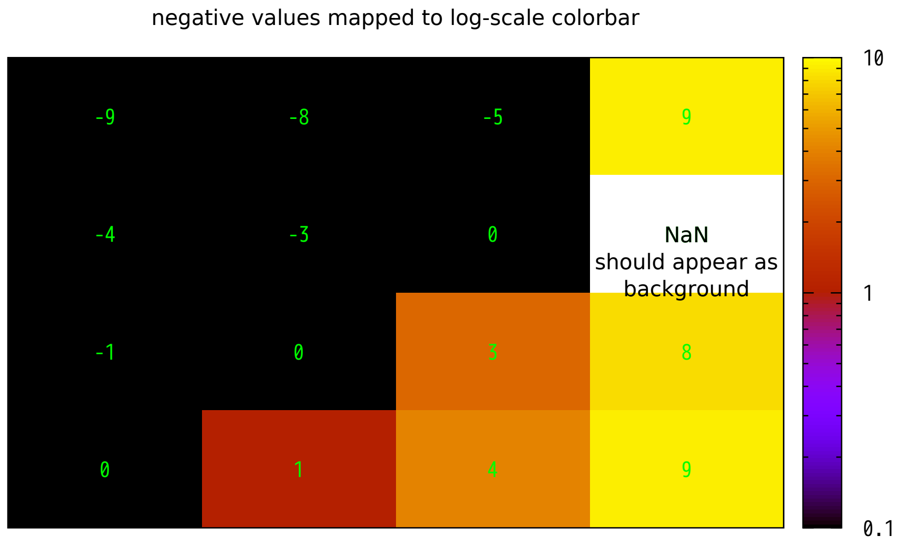


image from non-matrix data
NaN
should appear as
background
10
8
6
4
2
0
-2
-4
-6
-8
-10


negative values mapped to log-scale colorbar
-9
-8
-5
9
-4
-3
0
NaN
should appear as
background
-1
0
3
8
0
1
4
9
10
1
0.1


Building Code Height Limits
200
150
100
50
0
NE
S
Downtown
Suburbs

Exercise substring handling

```
beg = 2 end = 4
foo           = ABCDEF
foo[3:5]      = CDE
foo[1:1]      = A
foo[5:3]      =
foo[beg:end]  = BCD
foo[end:beg]  =
foo[5:]       = EF
foo[5:*]      = EF
foo[:]        = ABCDEF
foo[*:*]      = ABCDEF
foo.foo[2:2]  = ABCDEFB
(foo.foo)[2:2]= B

foo[1:1] eq 'A'   foo[2:2] ne 'X' = true
```

Exercise string handling functions

```
foo          = ABCDEF
strlen(foo)  = 6
substr(foo,3,4) = CD

haystack     = `date`
haystack     = Fri Nov 30 11:51:50 JST 2018
needle       = :
S = strstrt(haystack,needle) = 14
haystack[S-2:S+2] = 11:51
It is now 11:51

words(haystack)   = 6
word(haystack,5)  = JST
```

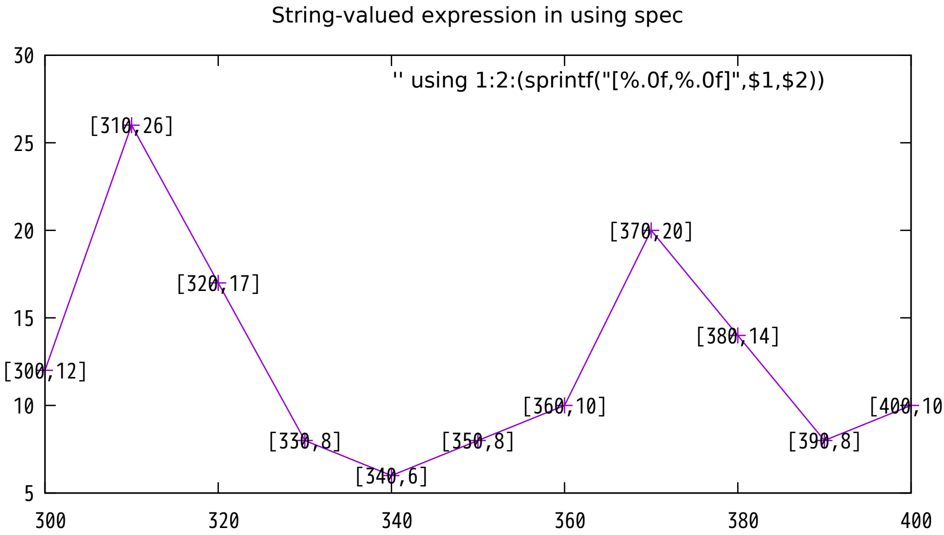
sprintf output of long strings works OK

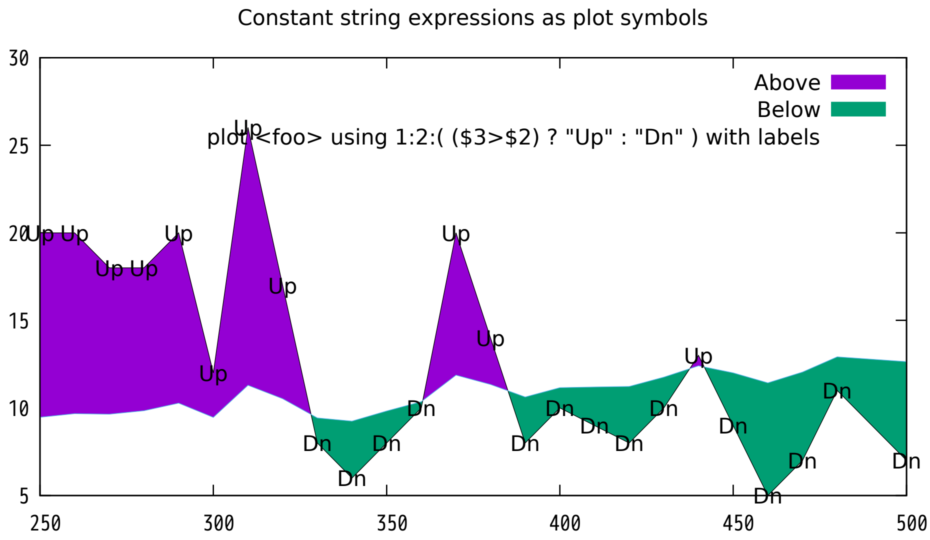
Exercise word and words functions

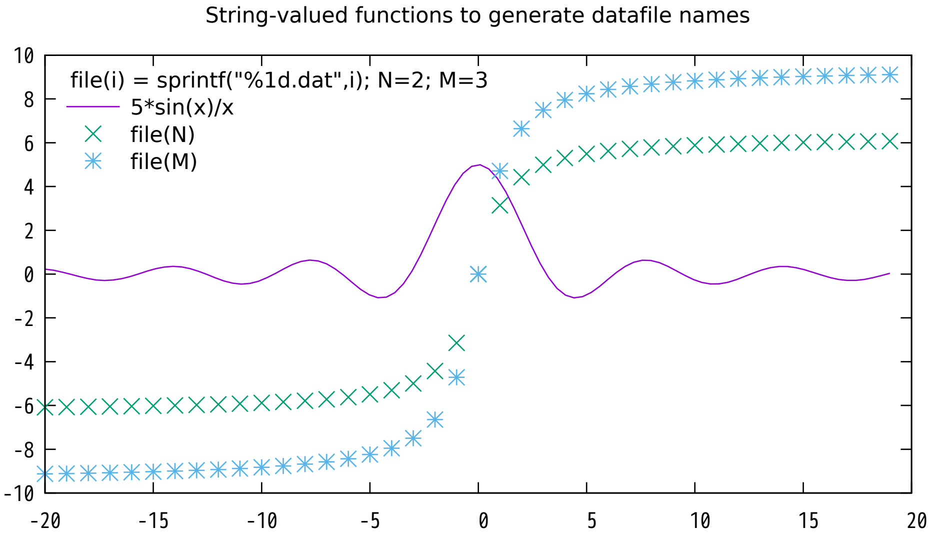
foo = word and words can handle 'quoted string'
words(foo) = 6
word(foo, 6) = quoted string

foo = "double quotes" or 'single quotes'
words(foo) = 3

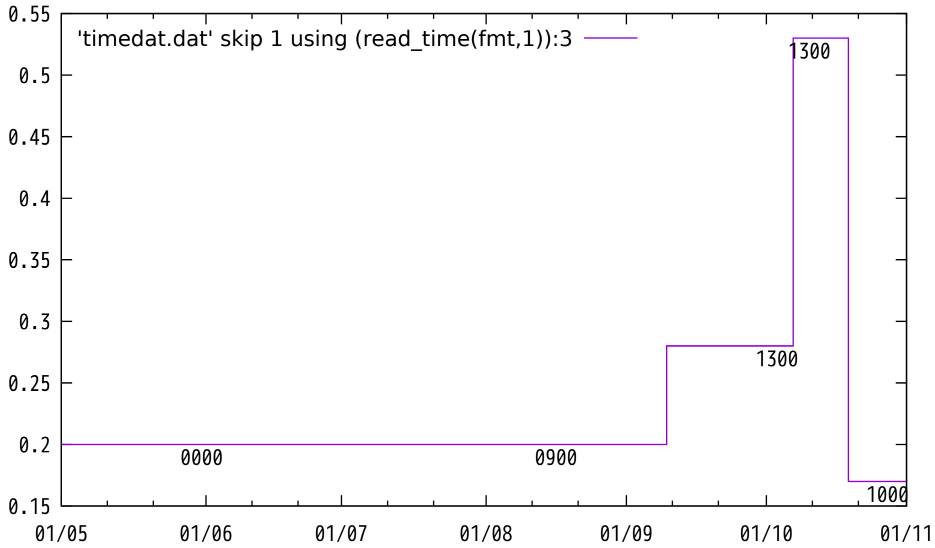
foo = Apostrophes inside words don't matter
word(foo, 4) = don't


String-valued expression in using spec
'' using 1:2:(sprintf("[%.0f,%.0f]",$1,$2))
[300,12]
[310,26]
[320,17]
[330,8]
[340,6]
[350,8]
[360,10]
[370,20]
[380,14]
[390,8]
[400,10
30
25
20
15
10
5
300
320
340
360
380
400

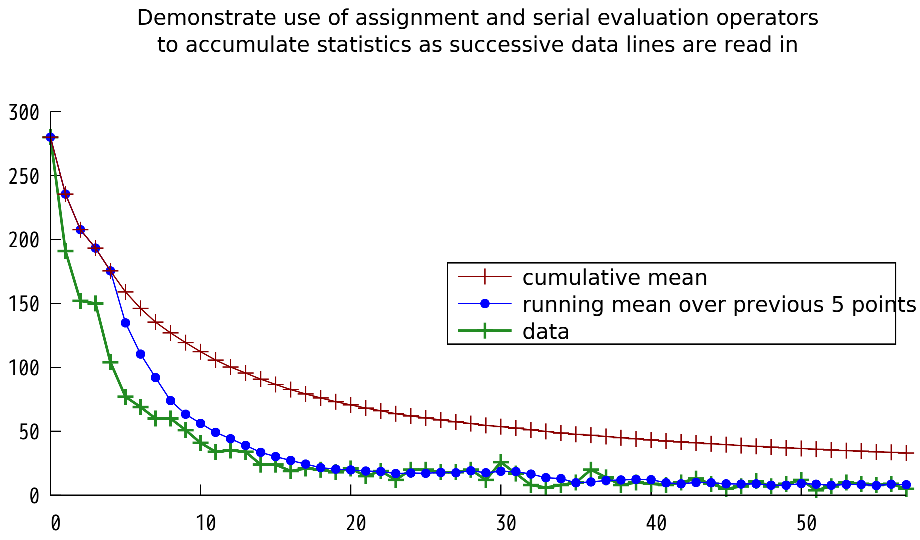

Constant string expressions as plot symbols
Above
Below
plot <foo> using 1:2:(($3>$2) ? "Up" : "Dn") with labels
30
25
20
15
10
5
250
300
350
400
450
500
Up
Dn



String-valued functions to generate datafile names
file(i) = sprintf("%1d.dat",i); N=2; M=3
5*sin(x)/x
file(N)
file(M)
10
8
6
4
2
0
-2
-4
-6
-8
-10
-20
-15
-10
-5
0
5
10
15
20

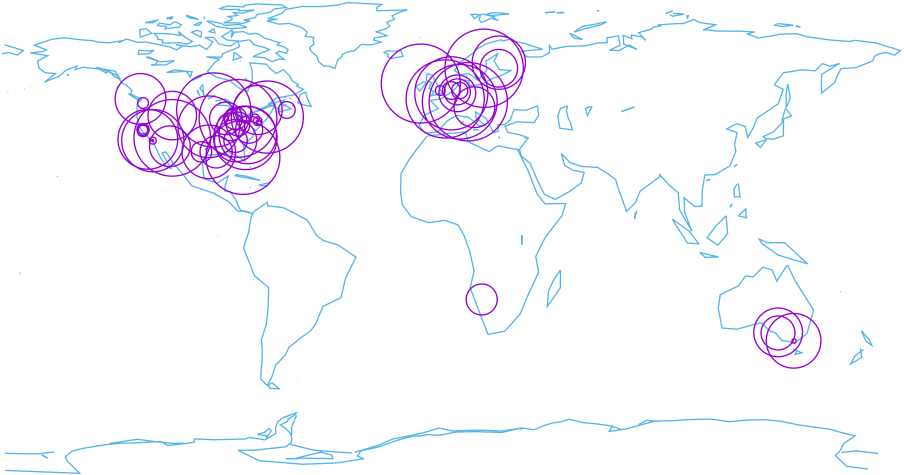


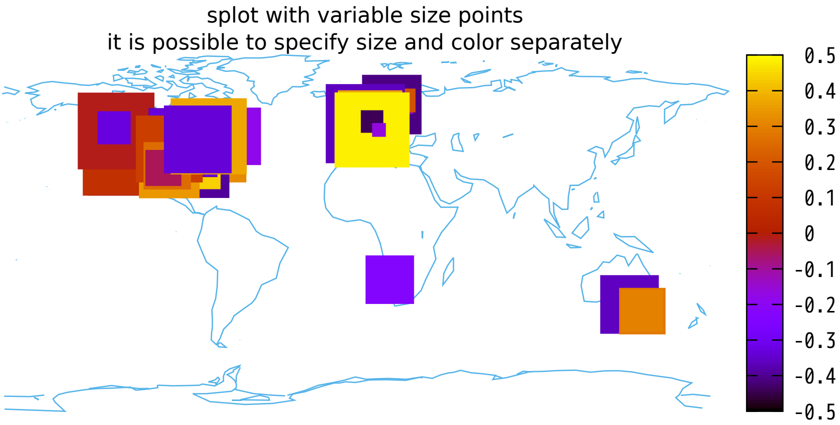
'timedat.dat' skip 1 using (read_time(fmt,1)):3
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
1300
1300
0000
0900
1000
01/05
01/06
01/07
01/08
01/09
01/10
01/11



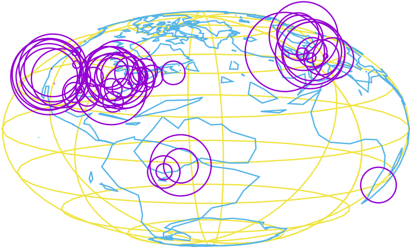
Demonstrate use of assignment and serial evaluation operators
to accumulate statistics as successive data lines are read in
cumulative mean
running mean over previous 5 points
data
300
250
200
150
100
50
0
0
10
20
30
40
50

plot with variable size points

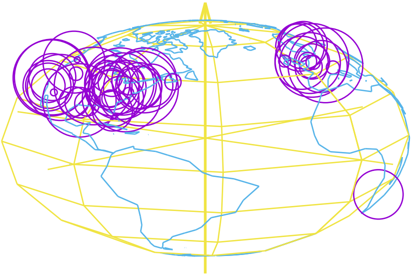



splot with variable size points
it is possible to specify size and color separately
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5

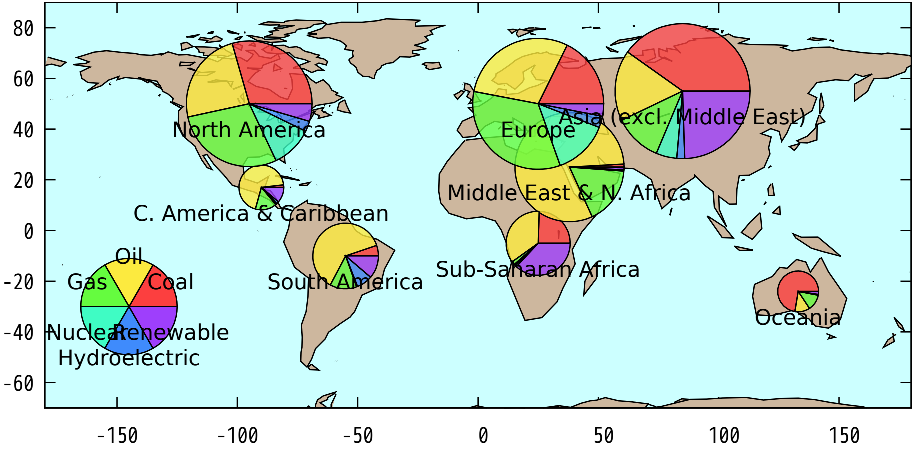
3D version using spherical coordinate system



3D solid version through hiddenlining

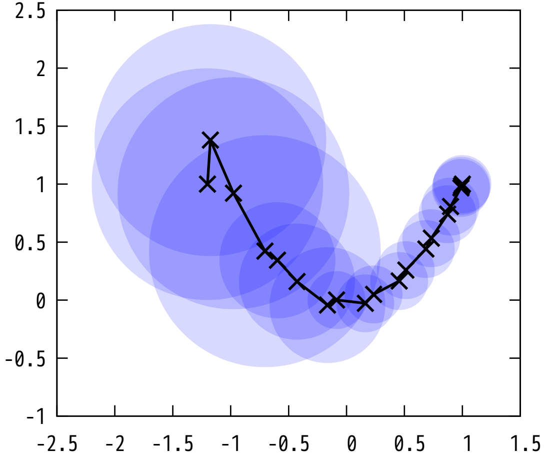


Sources of energy production, plotted for each continent



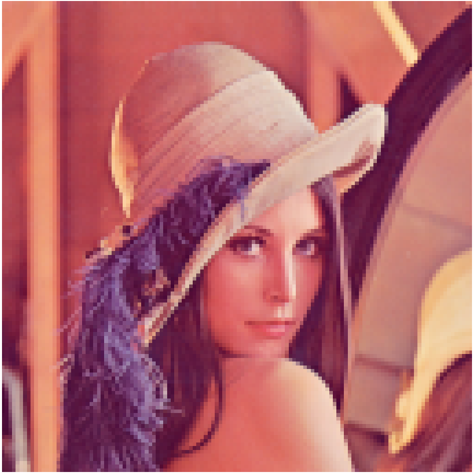
Dynamically generated pie charts

Trace of unconstrained optimization with trust-region method

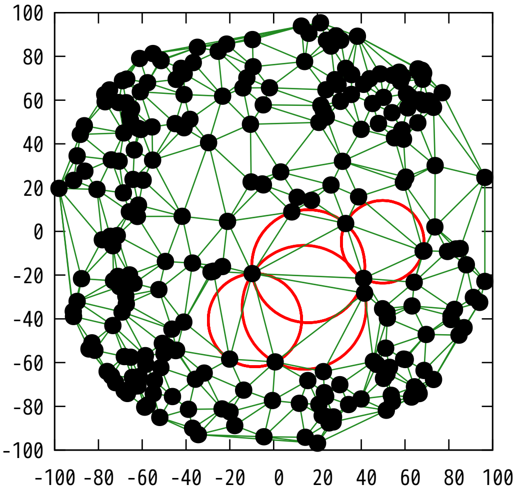


Note that overlapping transparent circles produce a darker area

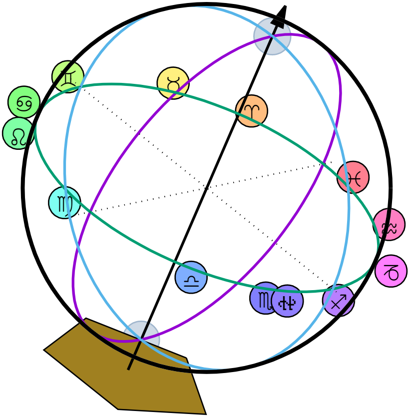
Lena's key points

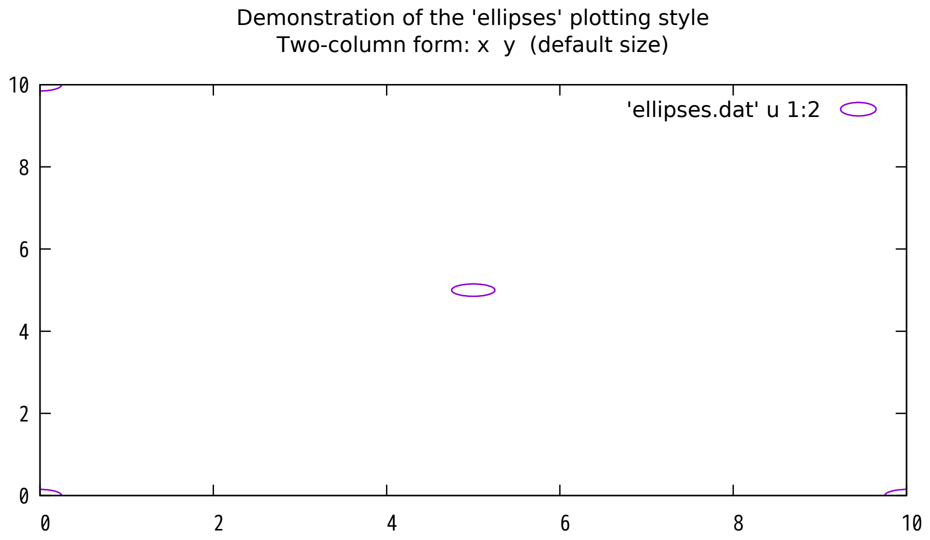


Delaunay triangulation of Hemisphere points, some empty circles in red

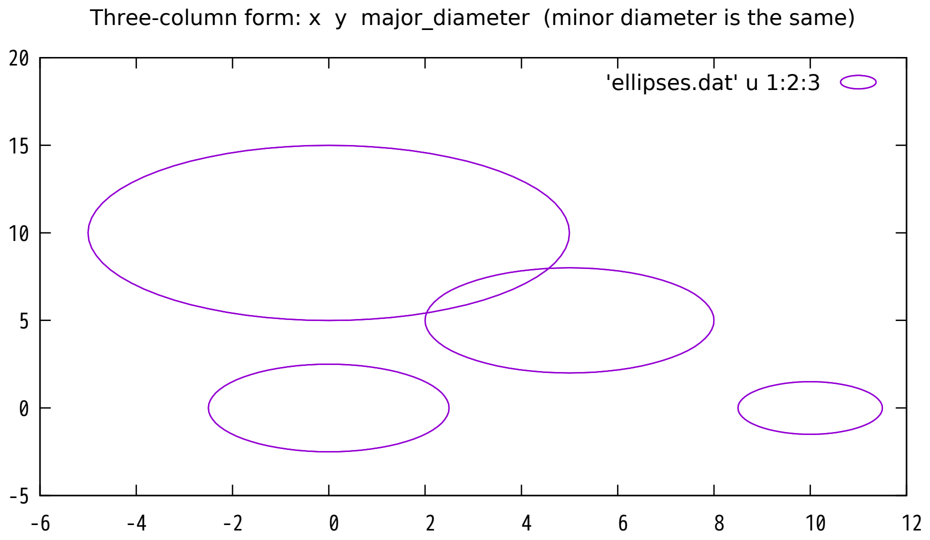


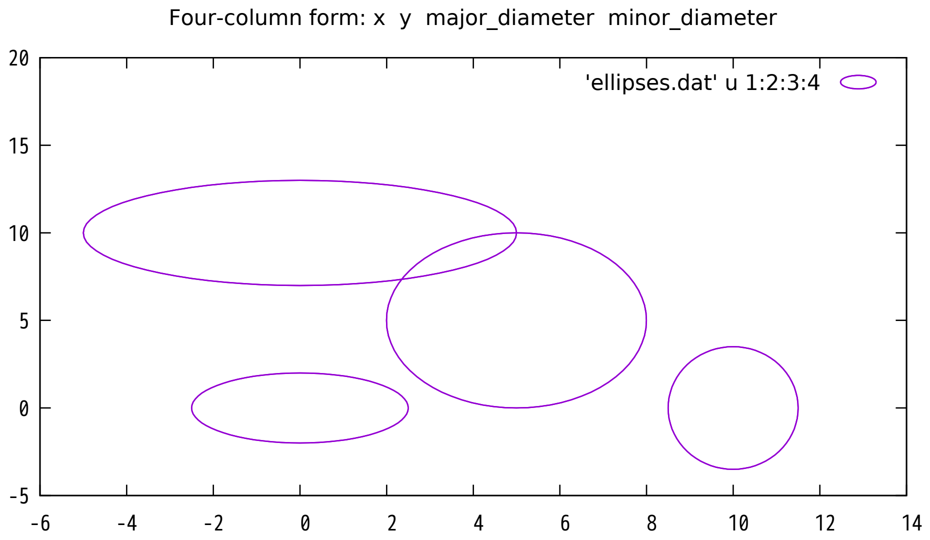
Circles and polygons in 3D

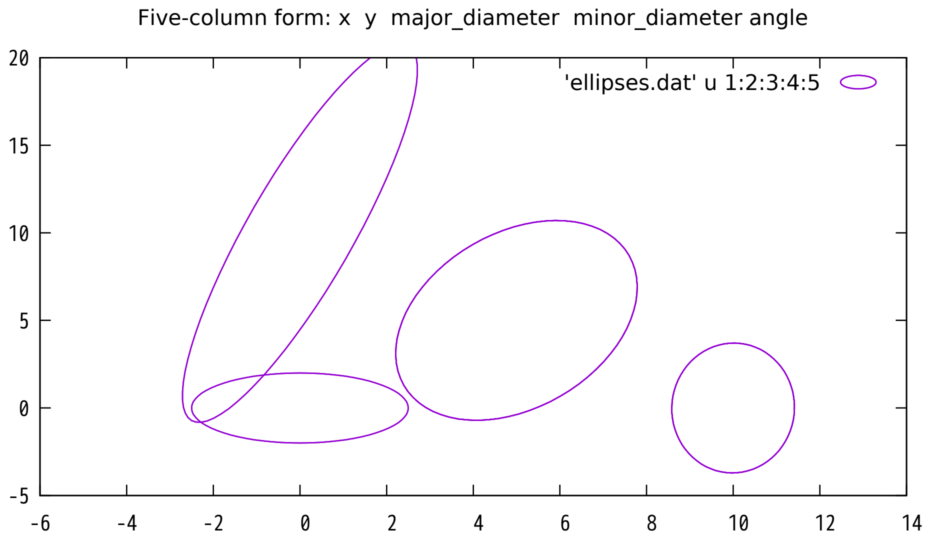


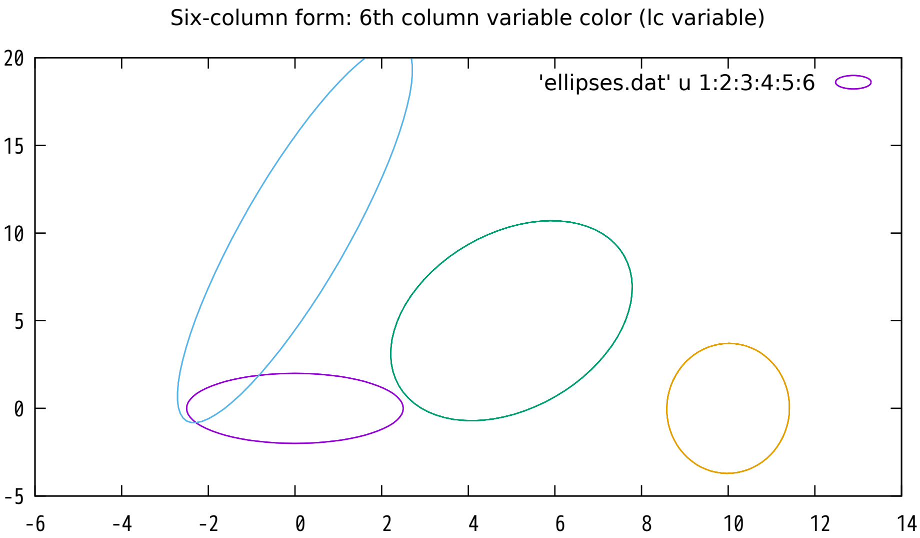


Demonstration of the 'ellipses' plotting style
Two-column form: x y (default size)
'ellipses.dat' u 1:2
0
2
4
6
8
10
0
2
4
6
8
10

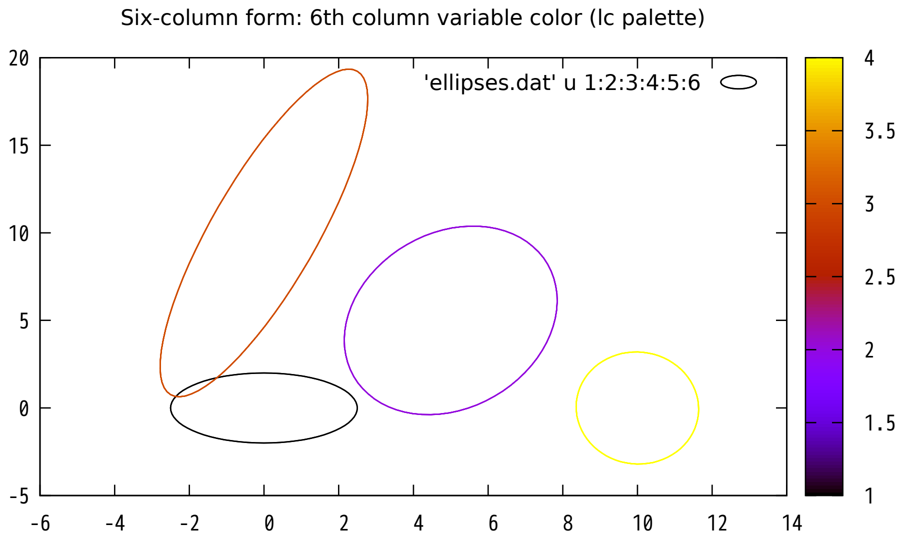

Three-column form: x y major_diameter (minor diameter is the same)
'ellipses.dat' u 1:2:3
20
15
10
5
0
-5
-6
-4
-2
0
2
4
6
8
10
12


Four-column form: x y major_diameter minor_diameter
'ellipses.dat' u 1:2:3:4
20
15
10
5
0
-5
-6
-4
-2
0
2
4
6
8
10
12
14

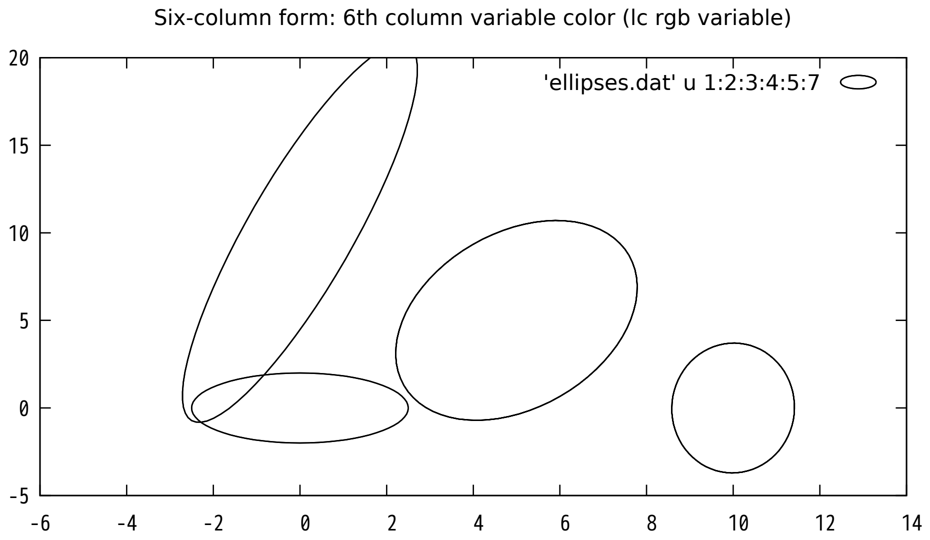

Five-column form: x y major_diameter minor_diameter angle
'ellipses.dat' u 1:2:3:4:5
20
15
10
5
0
-5
-6
-4
-2
0
2
4
6
8
10
12
14



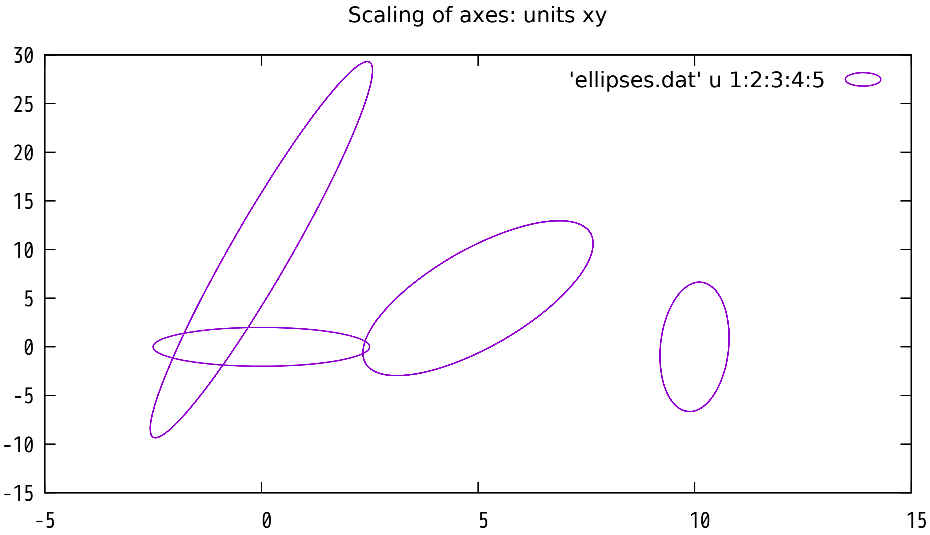
Six-column form: 6th column variable color (lc variable)
'ellipses.dat' u 1:2:3:4:5:6
20
15
10
5
0
-5
-6
-4
-2
0
2
4
6
8
10
12
14



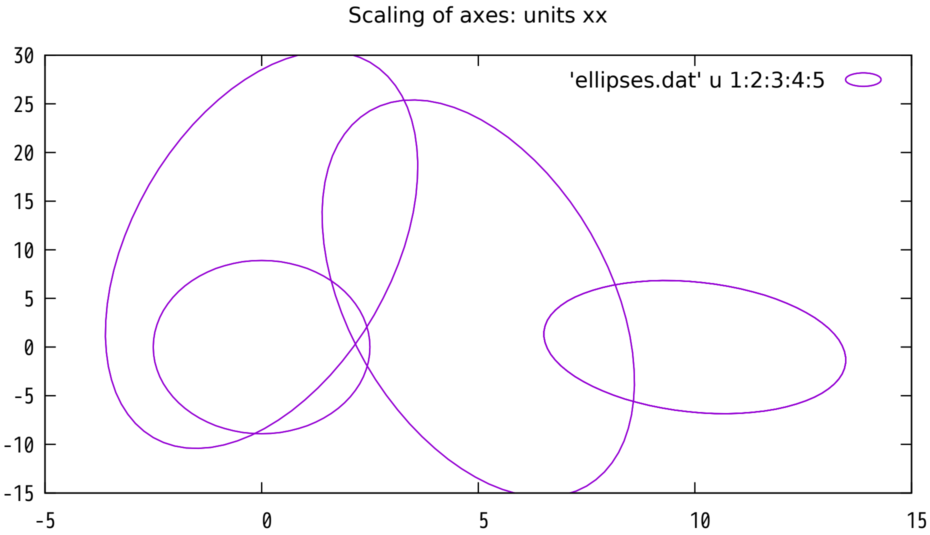
Six-column form: 6th column variable color (lc palette)
'ellipses.dat' u 1:2:3:4:5:6
20
15
10
5
0
-5
-6
-4
-2
0
2
4
6
8
10
12
14
4
3.5
3
2.5
2
1.5
1



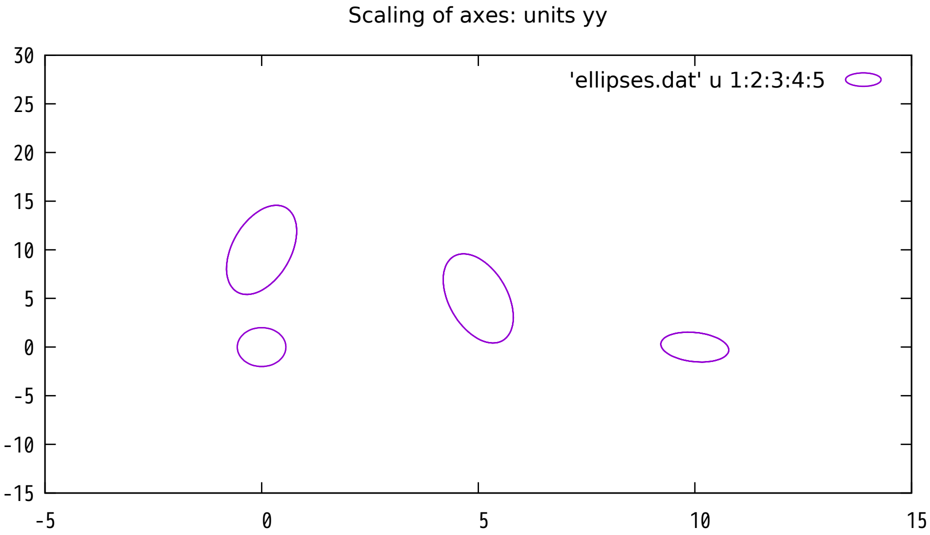
Six-column form: 6th column variable color (lc rgb variable)
'ellipses.dat' u 1:2:3:4:5:7
20
15
10
5
0
-5
-6
-4
-2
0
2
4
6
8
10
12
14



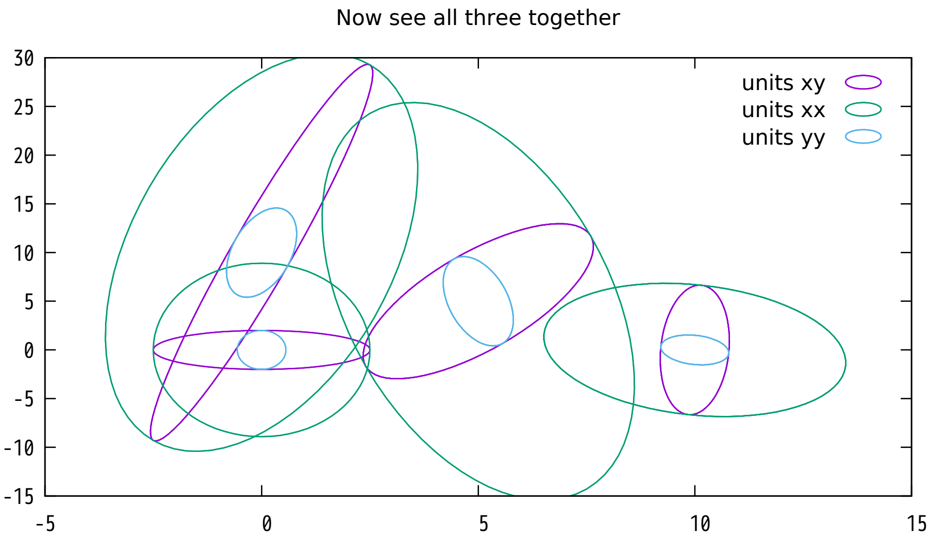
Scaling of axes: units xy
'ellipses.dat' u 1:2:3:4:5
30
25
20
15
10
5
0
-5
-10
-15
-5
0
5
10
15

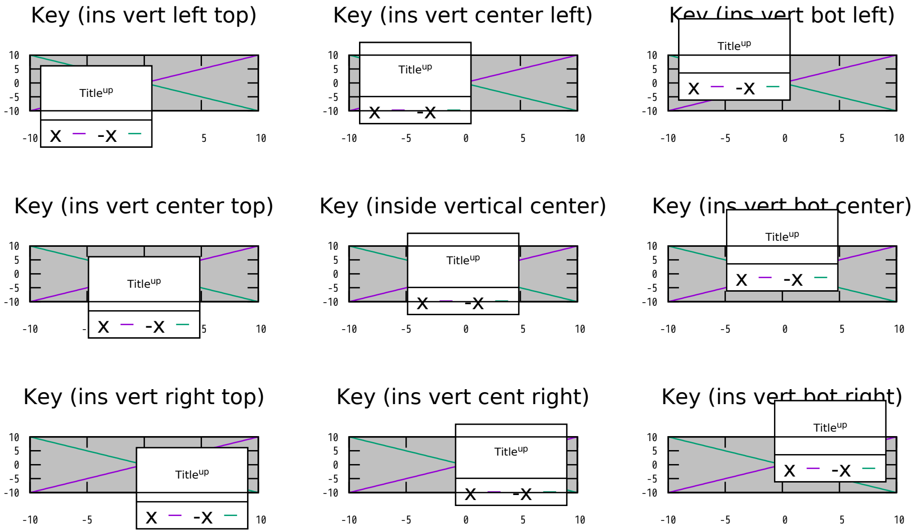


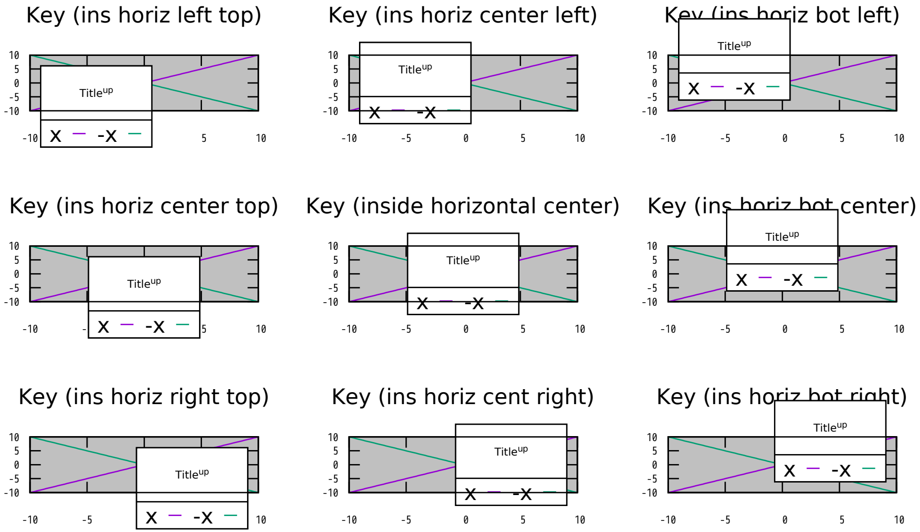
Scaling of axes: units xx
'ellipses.dat' u 1:2:3:4:5
30
25
20
15
10
5
0
-5
-10
-15
-5
0
5
10
15

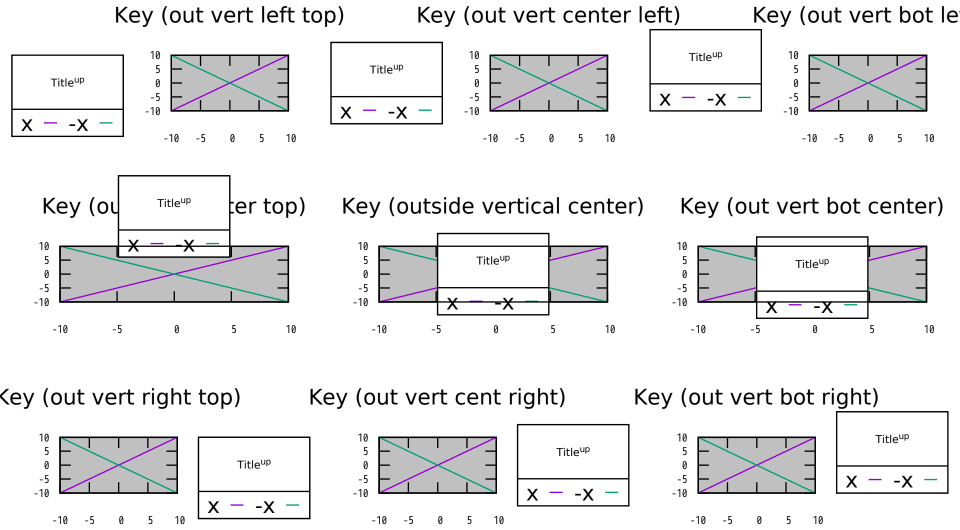


Scaling of axes: units yy
'ellipses.dat' u 1:2:3:4:5
30
25
20
15
10
5
0
-5
-10
-15
-5
0
5
10
15

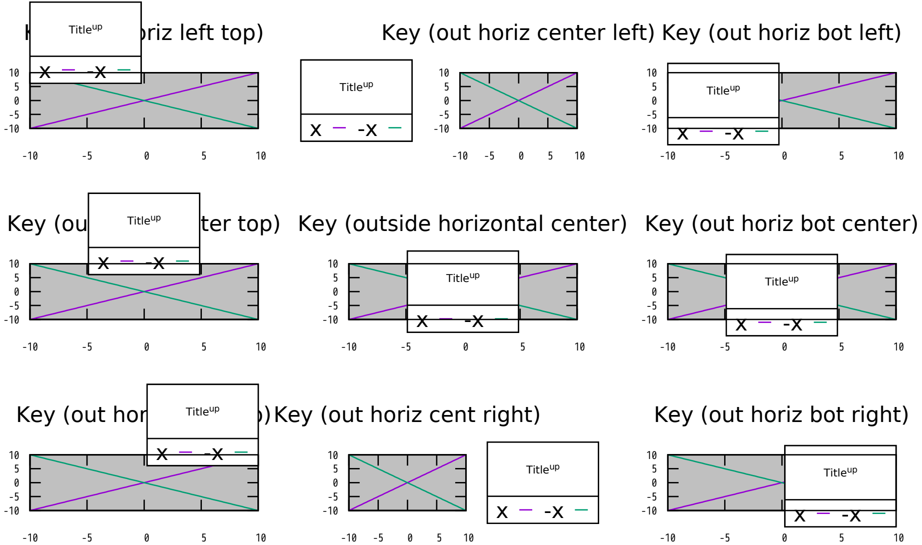

Now see all three together
units xy
units xx
units yy
30
25
20
15
10
5
0
-5
-10
-15
-5
0
5
10
15


Key (ins vert left top)
Key (ins vert center left)
Key (ins vert bot left)
Key (ins vert center top)
Key (inside vertical center)
Key (ins vert bot center)
Key (ins vert right top)
Key (ins vert cent right)
Key (ins vert bot right)
Titleup
x
-x
10
5
0
-5
-10

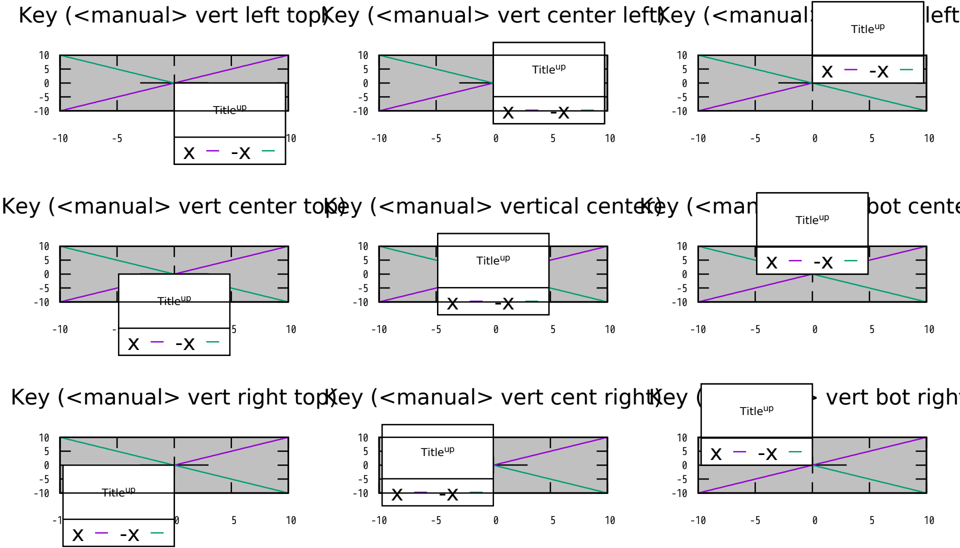

Key (ins horiz left top)
Key (ins horiz center left)
Key (ins horiz bot left)
Key (ins horiz center top)
Key (inside horizontal center)
Key (ins horiz bot center)
Key (ins horiz right top)
Key (ins horiz cent right)
Key (ins horiz bot right)
Title^up
x
-x
10
5
0
-5
-10



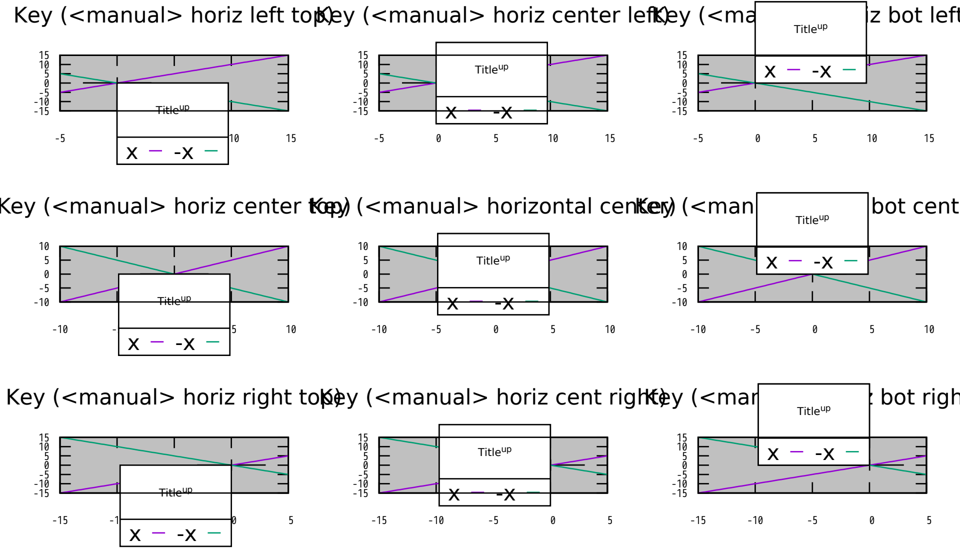
Key (out vert left top)
Key (out vert center left)
Key (out vert bot le
Key (ou
ter top)
Key (outside vertical center)
Key (out vert bot center)
Key (out vert right top)
Key (out vert cent right)
Key (out vert bot right)
Title^up
x
-x
10
5
0
-5
-10



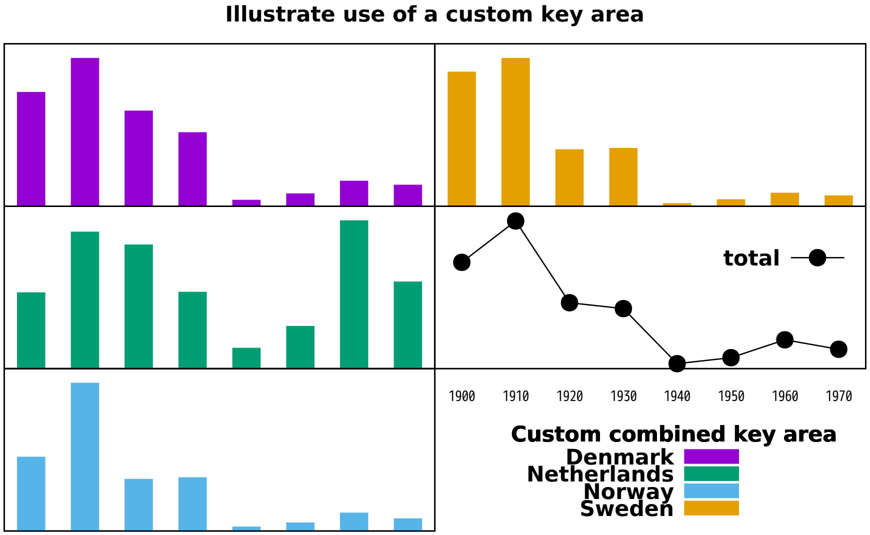
riz left top)
Key (out horiz center left)
Key (out horiz bot left)
Key (ou
ter top)
Key (outside horizontal center)
Key (out horiz bot center)
Key (out hor
Key (out horiz cent right)
Key (out horiz bot right)
Titleup
x
-x
10
5
0
-5
-10



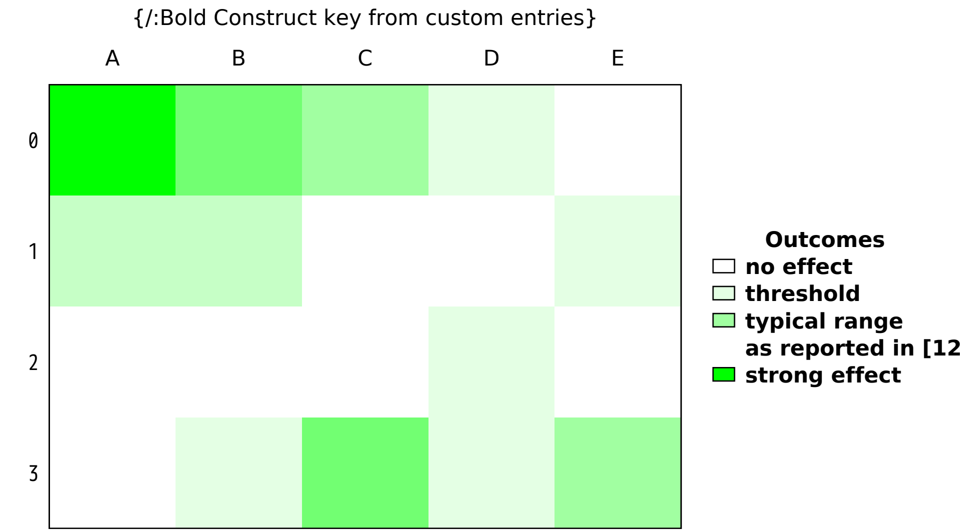
Key (<manual> vert left top)
Key (<manual> vert center left)
Key (<manual> vert center top)
Key (<manual> vertical center)
Key (<manual> vert right top)
Key (<manual> vert cent right)
vert bot righ
Title^up
x
-x
10
5
0
-5
-10

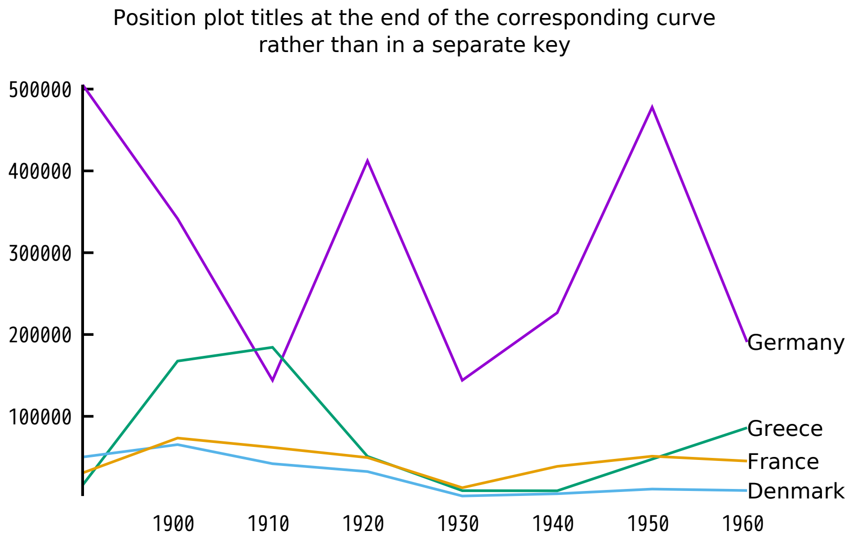


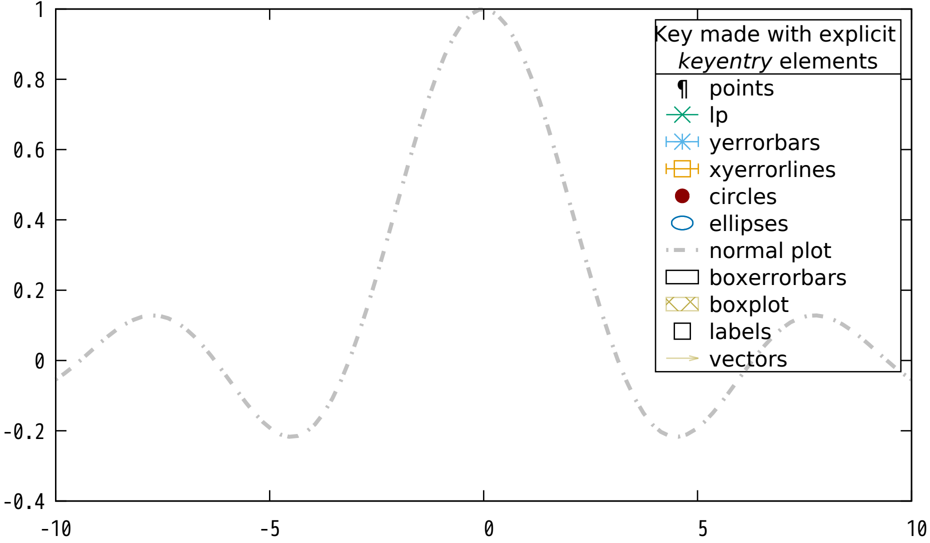
Key (<manual> horiz left top)
Title^up
x -x
Key (<manual> horiz center left)
Title^up
x -x
Key (<ma
iz bot left
Title^up
x -x
Key (<manual> horiz center top)
Title^up
x -x
Key (<manual> horizontal center)
Title^up
x -x
Key (<man
bot cent
Title^up
x -x
Key (<manual> horiz right top)
Title^up
x -x
Key (<manual> horiz cent right)
Title^up
x -x
Key (<mar
bot righ
Title^up
x -x



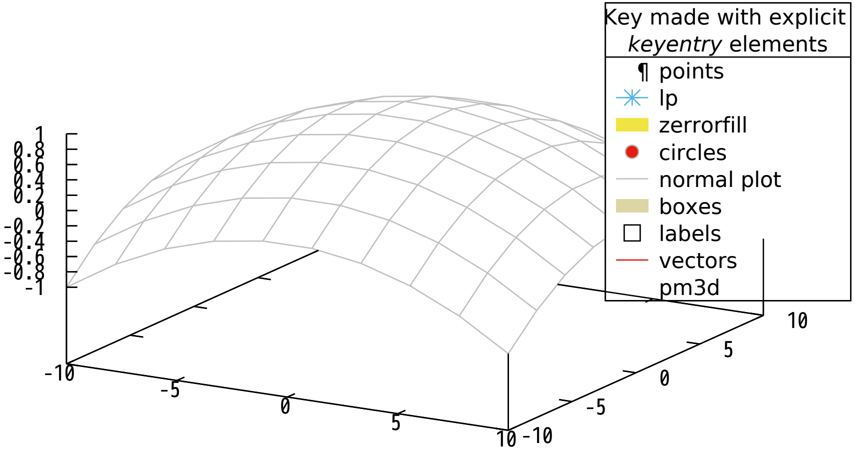
Illustrate use of a custom key area
total
1900
1910
1920
1930
1940
1950
1960
1970
Custom combined key area
Denmark
Netherlands
Norway
Sweden


{/:Bold Construct key from custom entries}
A
B
C
D
E
0
1
2
3
Outcomes
no effect
threshold
typical range
as reported in [12
strong effect

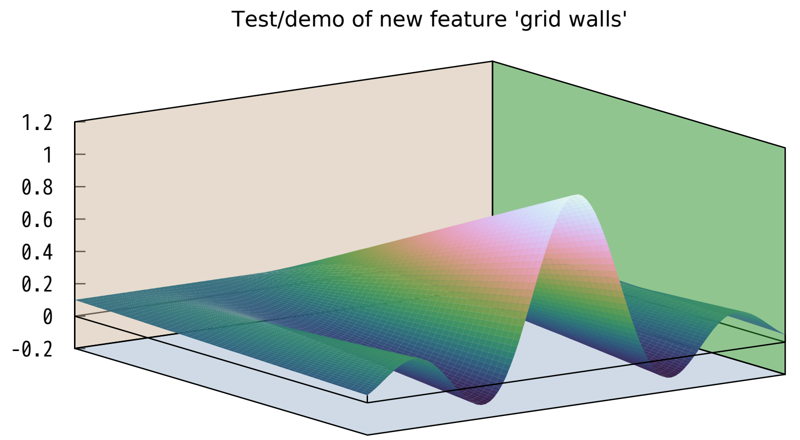

Position plot titles at the end of the corresponding curve
rather than in a separate key
500000
400000
300000
200000
100000
1900
1910
1920
1930
1940
1950
1960
Germany
Greece
France
Denmark



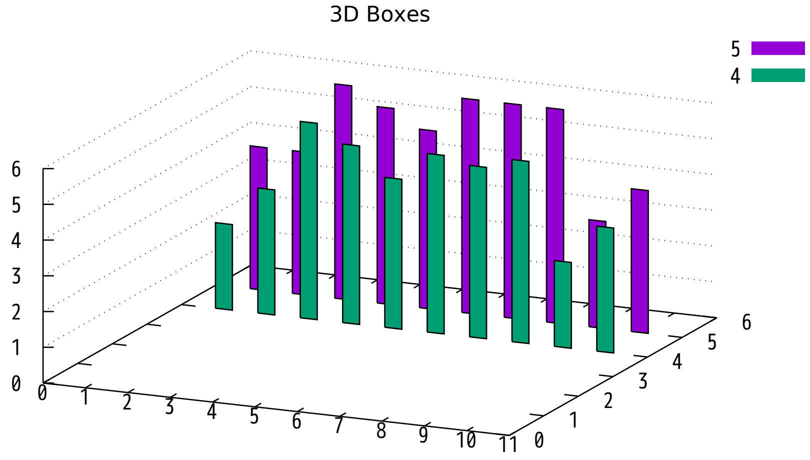
Key made with explicit *keyentry* elements
points
lp
yerrorbars
xyerrorlines
circles
ellipses
normal plot
boxerrorbars
boxplot
labels
vectors
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-10
-5
0
5
10



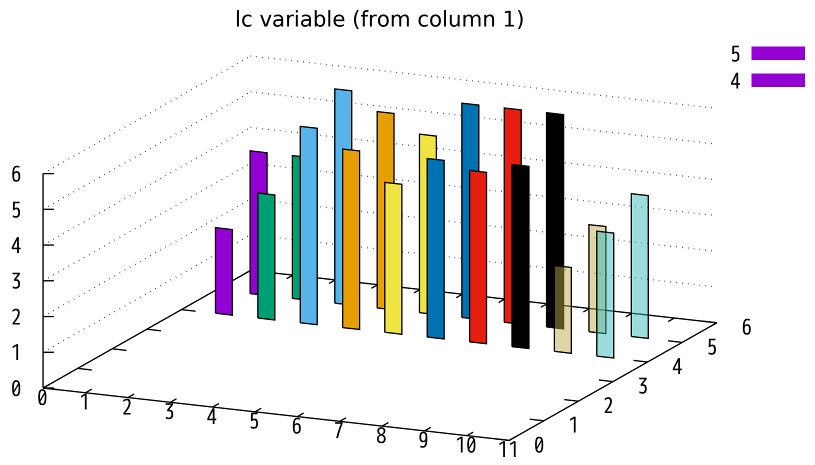
Key made with explicit
keyentry elements
¶ points
lp
zerrorfill
circles
normal plot
boxes
labels
vectors
pm3d
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-10
-5
0
5
10
-10
-5
0
5
10

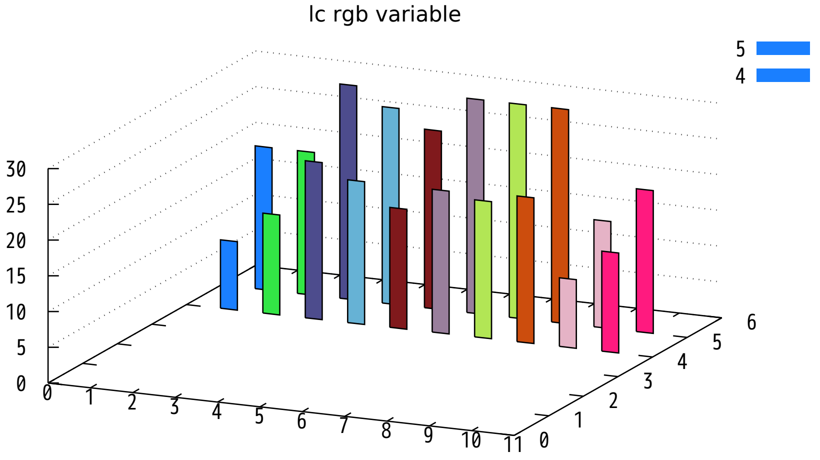


Test/demo of new feature 'grid walls'
1.2
1
0.8
0.6
0.4
0.2
0
-0.2

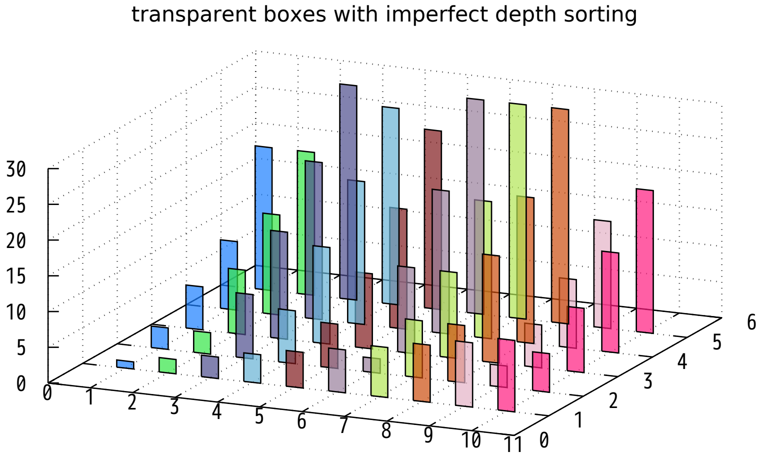


3D Boxes
5
4
0
1
2
3
4
5
6
0
1
2
3
4
5
6
7
8
9
10
11
0
1
2
3
4
5
6

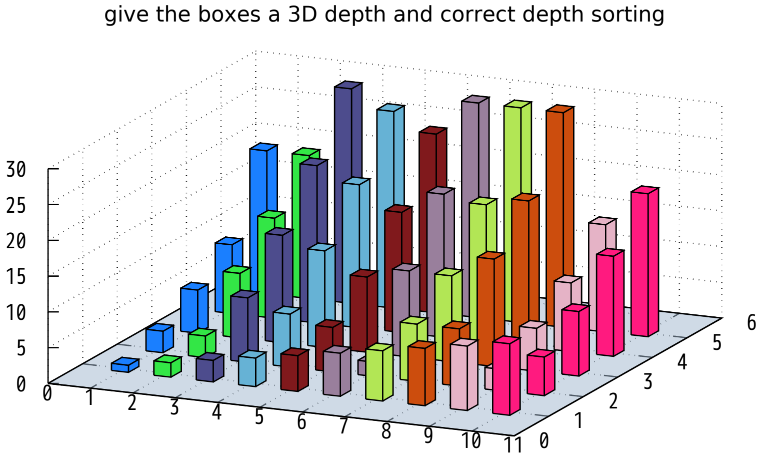

lc variable (from column 1)
5
4
0
1
2
3
4
5
6
0
1
2
3
4
5
6
7
8
9
10
11
0
1
2
3
4
5
6



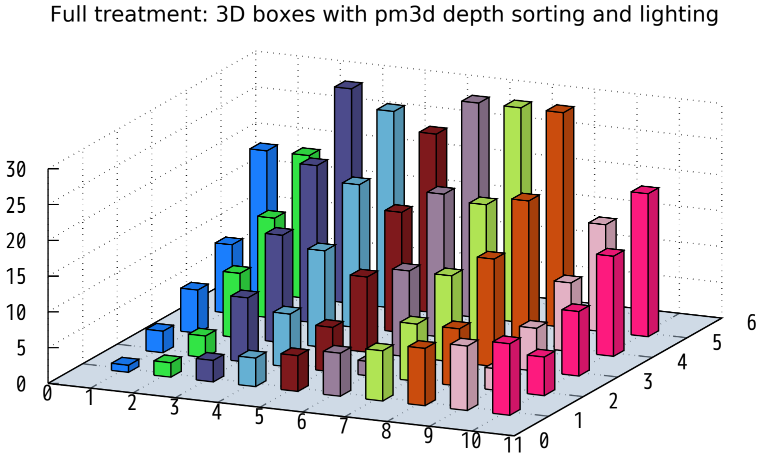
lc rgb variable
5
4
0
5
10
15
20
25
30
0
1
2
3
4
5
6
7
8
9
10
11
0
1
2
3
4
5
6



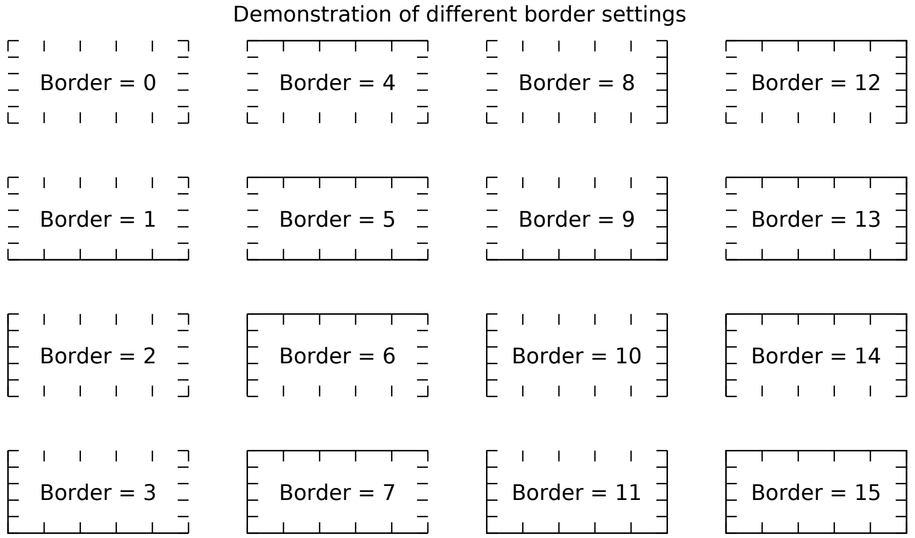
transparent boxes with imperfect depth sorting
0
5
10
15
20
25
30
0 1 2 3 4 5 6 7 8 9 10 11
0 1 2 3 4 5 6

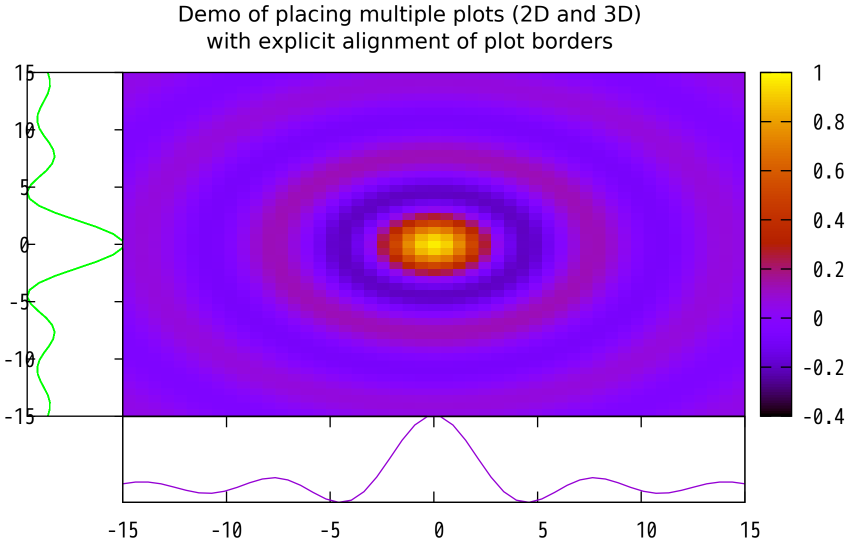


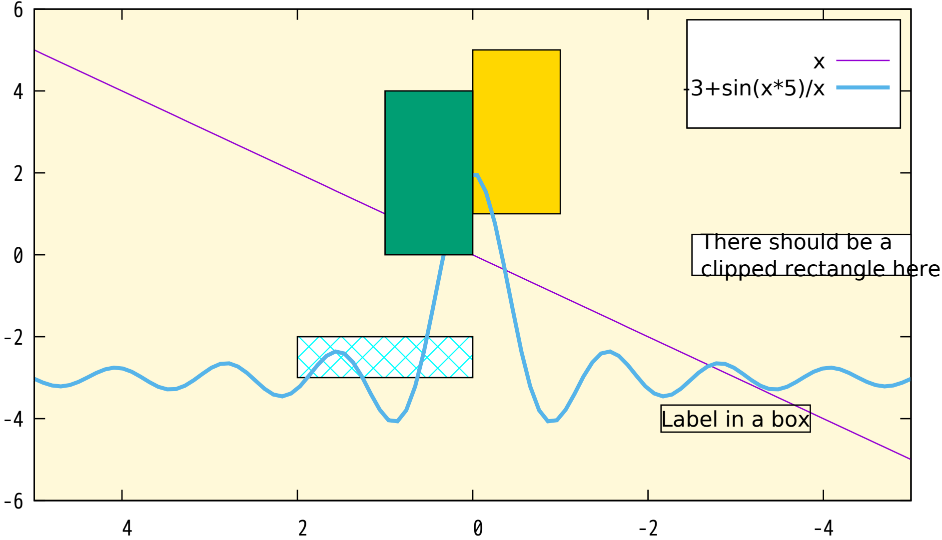
give the boxes a 3D depth and correct depth sorting
0
5
10
15
20
25
30
0 1 2 3 4 5 6 7 8 9 10 11
0 1 2 3 4 5 6



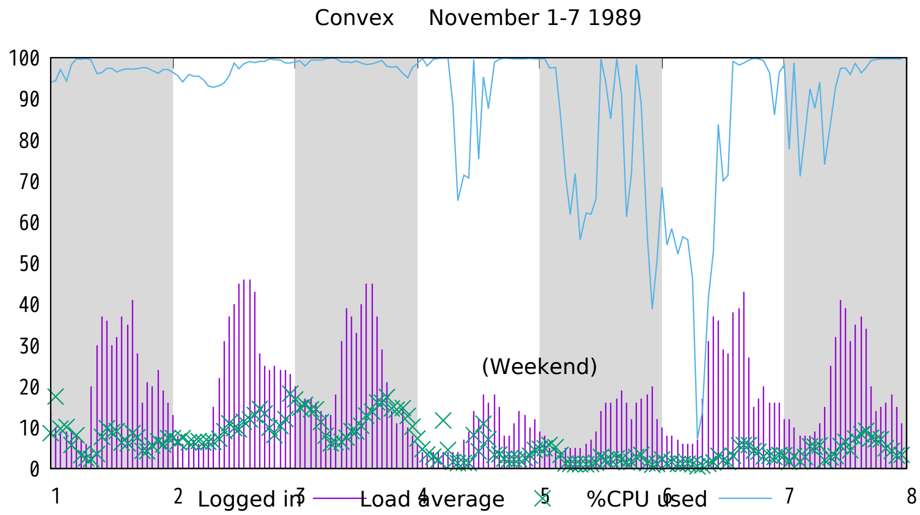
Full treatment: 3D boxes with pm3d depth sorting and lighting
0
5
10
15
20
25
30
0 1 2 3 4 5 6 7 8 9 10 11
0 1 2 3 4 5 6


Demonstration of different border settings
Border = 0
Border = 4
Border = 8
Border = 12
Border = 1
Border = 5
Border = 9
Border = 13
Border = 2
Border = 6
Border = 10
Border = 14
Border = 3
Border = 7
Border = 11
Border = 15

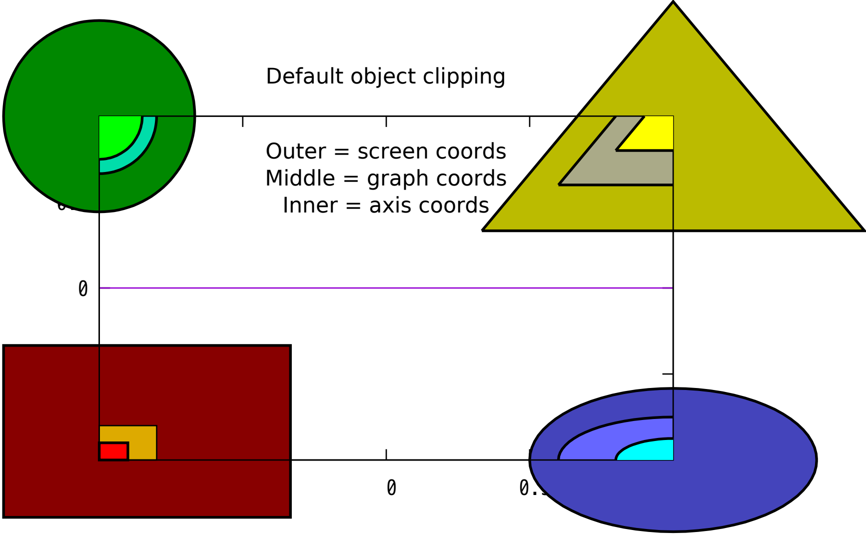

Demo of placing multiple plots (2D and 3D)
with explicit alignment of plot borders
15
10
5
0
-5
-10
-15
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-15
-10
-5
0
5
10
15

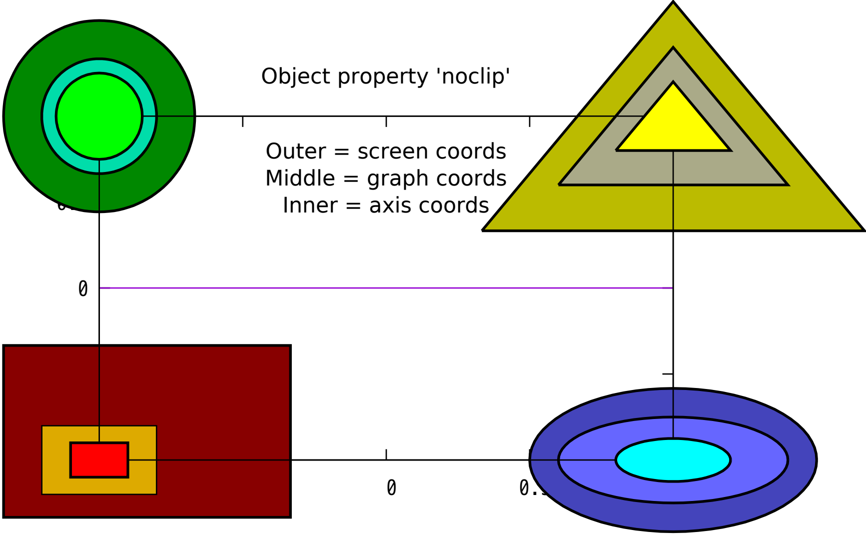


6
4
2
0
-2
-4
-6
4
2
0
-2
-4
x
-3+sin(x*5)/x
There should be a
clipped rectangle here
Label in a box

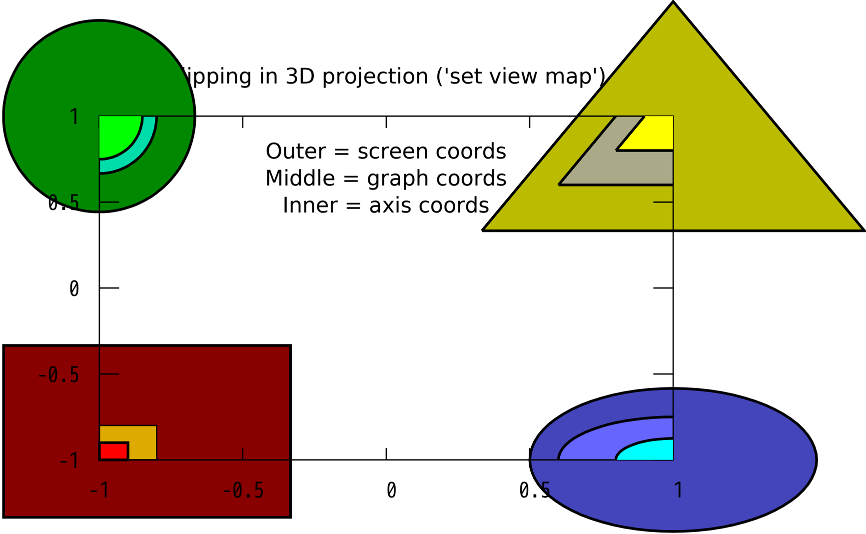


Convex November 1-7 1989
100
90
80
70
60
50
40
30
20
10
0
(Weekend)
1
2
3
4
5
6
7
8
Logged in
Load average
%CPU used

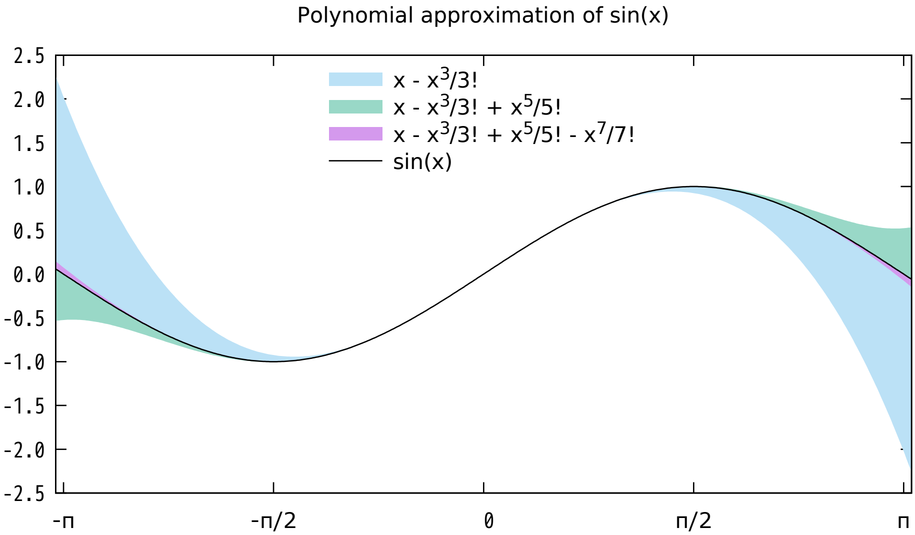

Default object clipping
Outer = screen coords
Middle = graph coords
Inner = axis coords
0
0



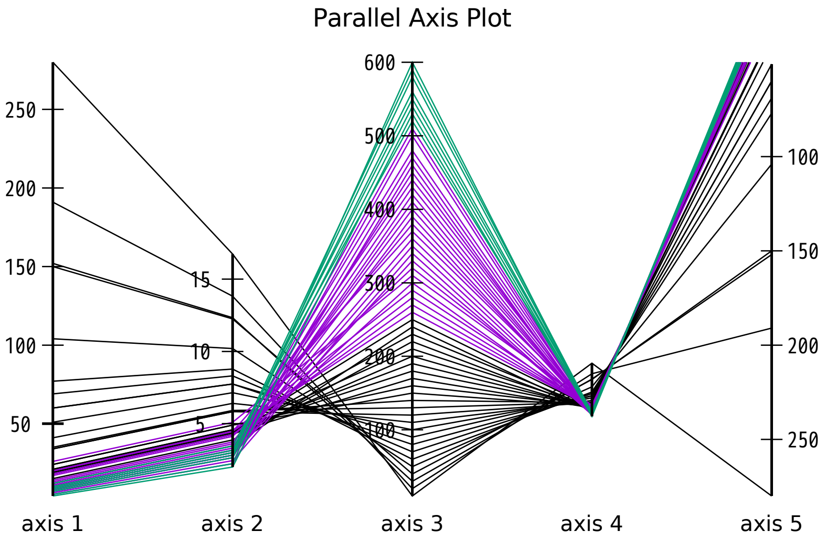
Object property 'noclip'
Outer = screen coords
Middle = graph coords
Inner = axis coords
0
0

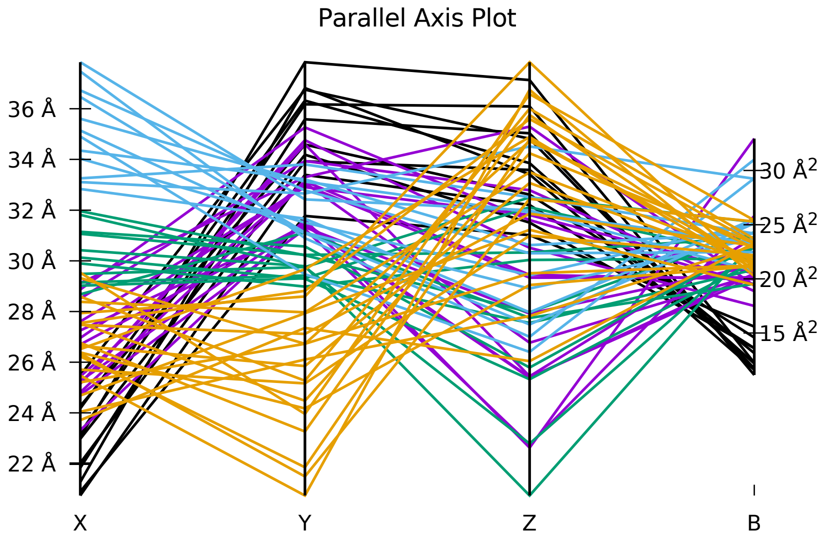


lipping in 3D projection ('set view map')
Outer = screen coords
Middle = graph coords
Inner = axis coords
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1

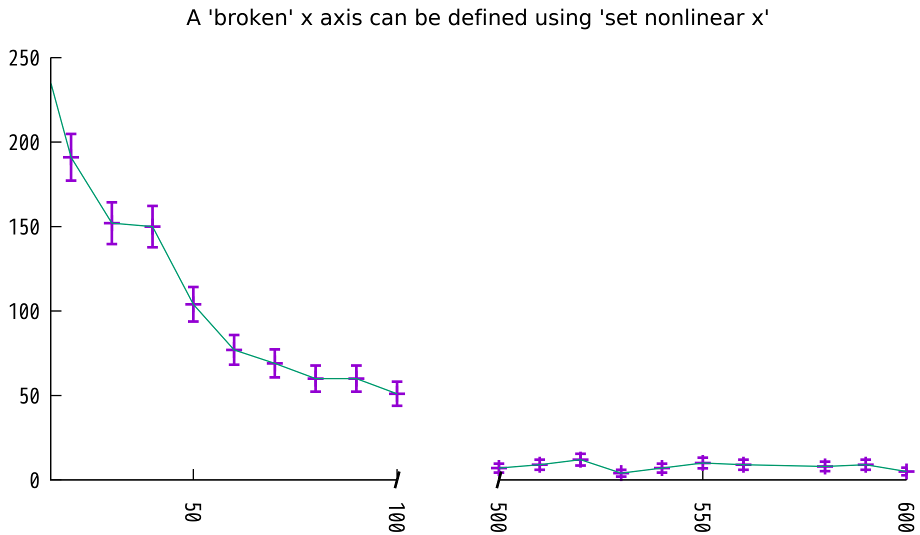


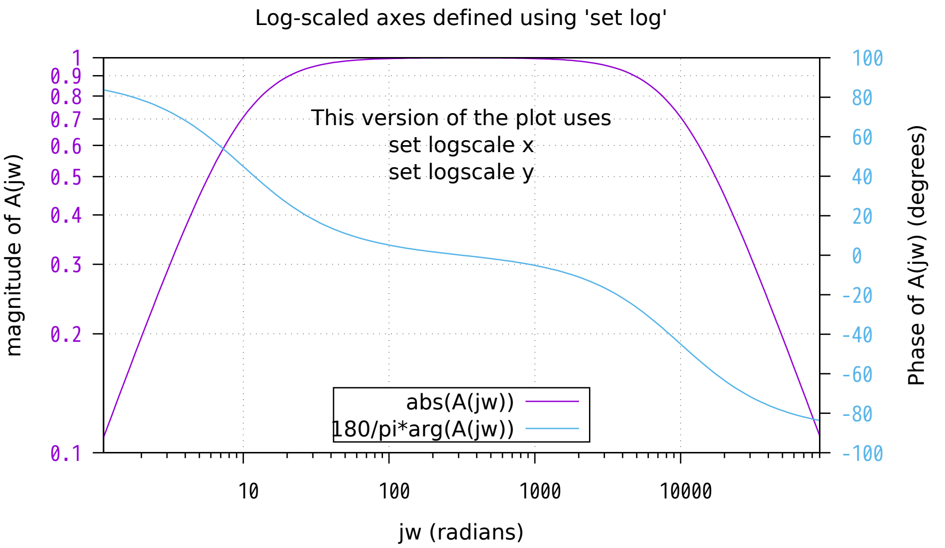
Polynomial approximation of sin(x)
x - x^3/3!
x - x^3/3! + x^5/5!
x - x^3/3! + x^5/5! - x^7/7!
sin(x)
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-π
-π/2
0
π/2
π


Parallel Axis Plot
250
200
150
100
50
15
10
5
600
500
400
300
200
100
100
150
200
250
axis 1
axis 2
axis 3
axis 4
axis 5

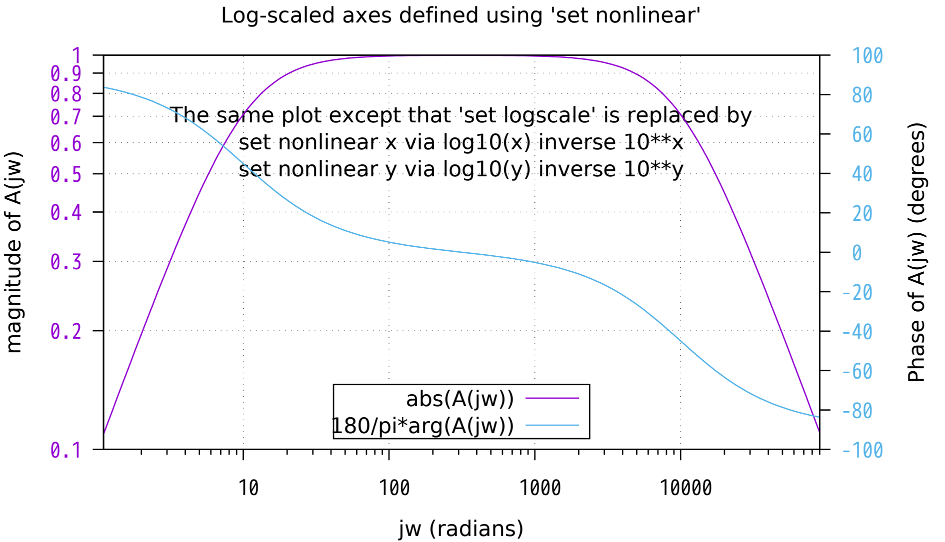


Parallel Axis Plot
36 Å
34 Å
32 Å
30 Å
28 Å
26 Å
24 Å
22 Å
30 Å^2
25 Å^2
20 Å^2
15 Å^2
X
Y
Z
B

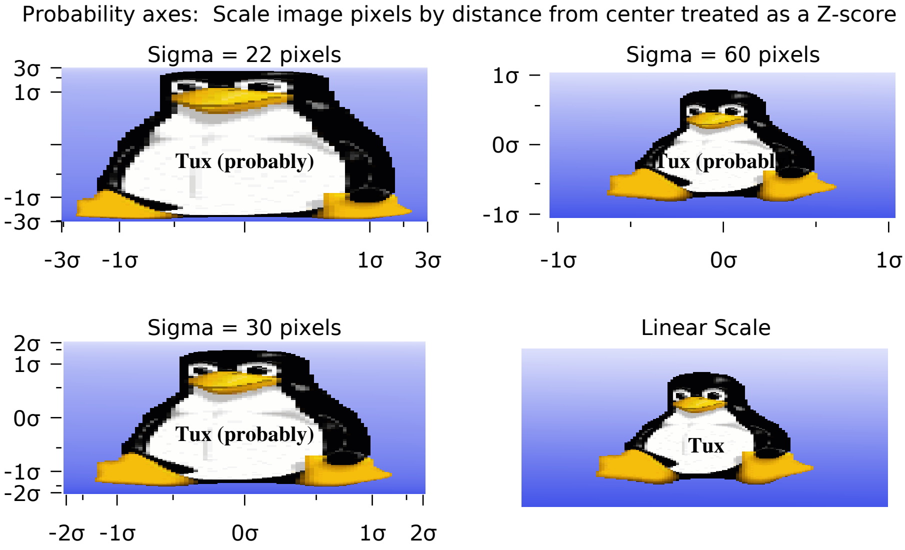

A 'broken' x axis can be defined using 'set nonlinear x'
250
200
150
100
50
0
50
100
500
550
600



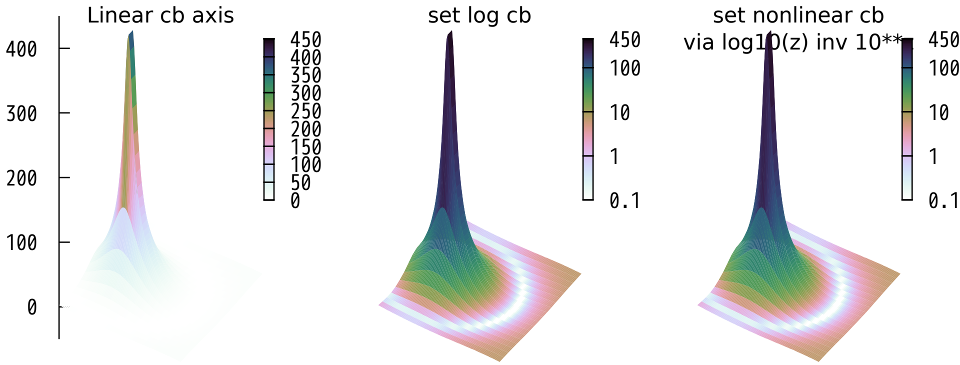
Log-scaled axes defined using 'set log'
This version of the plot uses
set logscale x
set logscale y
abs(A(jw))
180/pi*arg(A(jw))
magnitude of A(jw)
Phase of A(jw) (degrees)
jw (radians)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
100
80
60
40
20
0
-20
-40
-60
-80
-100
10
100
1000
10000

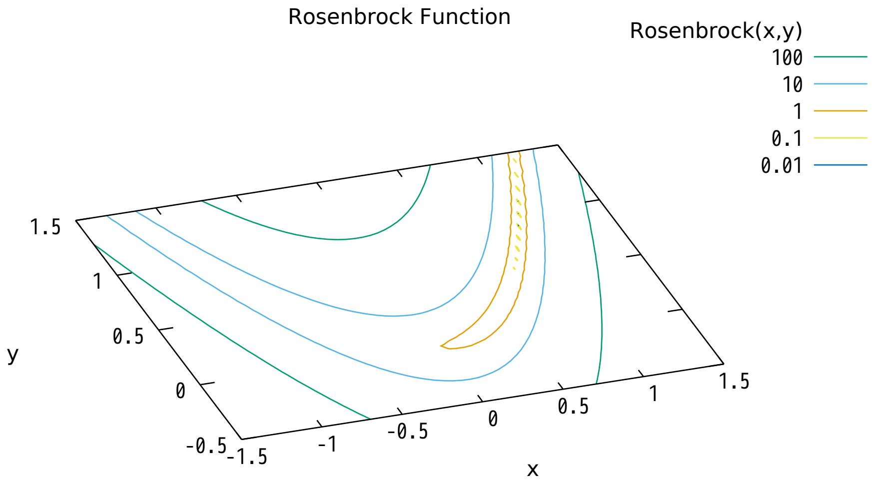


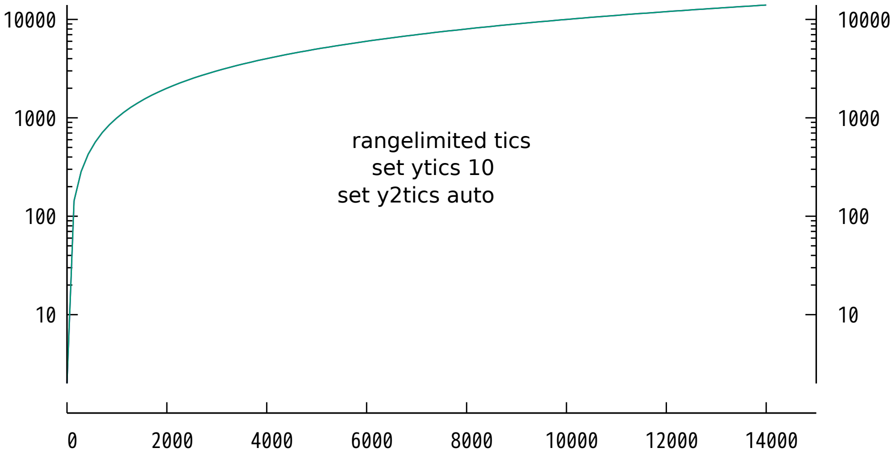
Log-scaled axes defined using 'set nonlinear'
The same plot except that 'set logscale' is replaced by
set nonlinear x via log10(x) inverse 10**x
set nonlinear y via log10(y) inverse 10**y
abs(A(jw))
180/pi*arg(A(jw))
magnitude of A(jw)
Phase of A(jw) (degrees)
jw (radians)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
100
80
60
40
20
0
-20
-40
-60
-80
-100
10
100
1000
10000

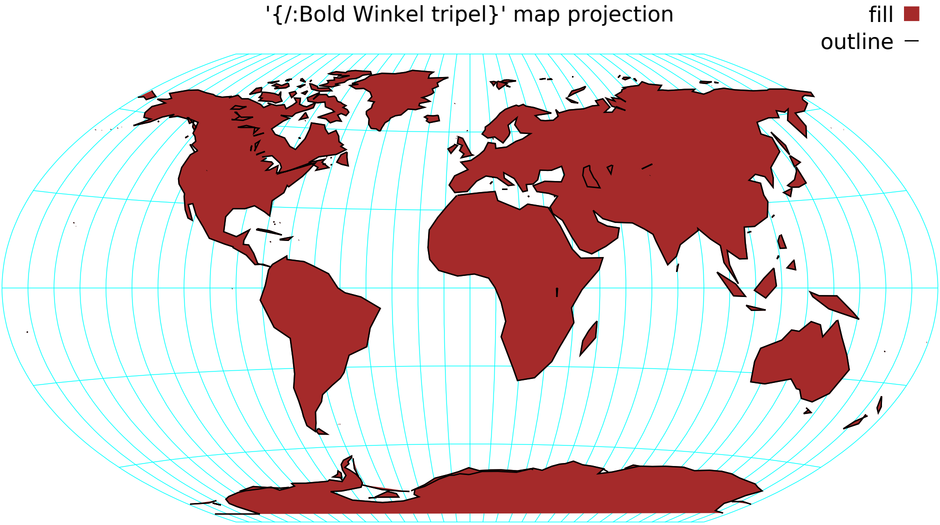


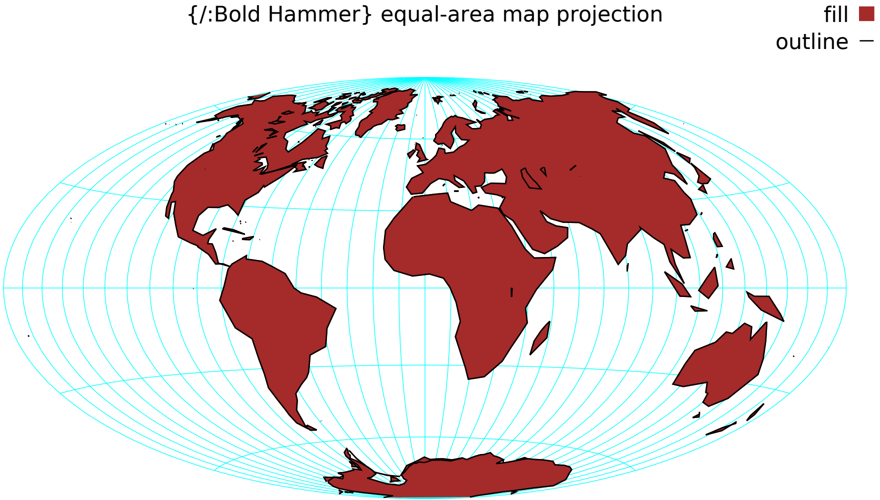
Probability axes: Scale image pixels by distance from center treated as a Z-score
Sigma = 22 pixels
Tux (probably)
3σ
1σ
-1σ
-3σ
-3σ
-1σ
1σ
3σ
Sigma = 60 pixels
Tux (probabl
1σ
0σ
-1σ
-1σ
0σ
1σ
Sigma = 30 pixels
Tux (probably)
2σ
1σ
0σ
-1σ
-2σ
-2σ
-1σ
0σ
1σ
2σ
Linear Scale
Tux

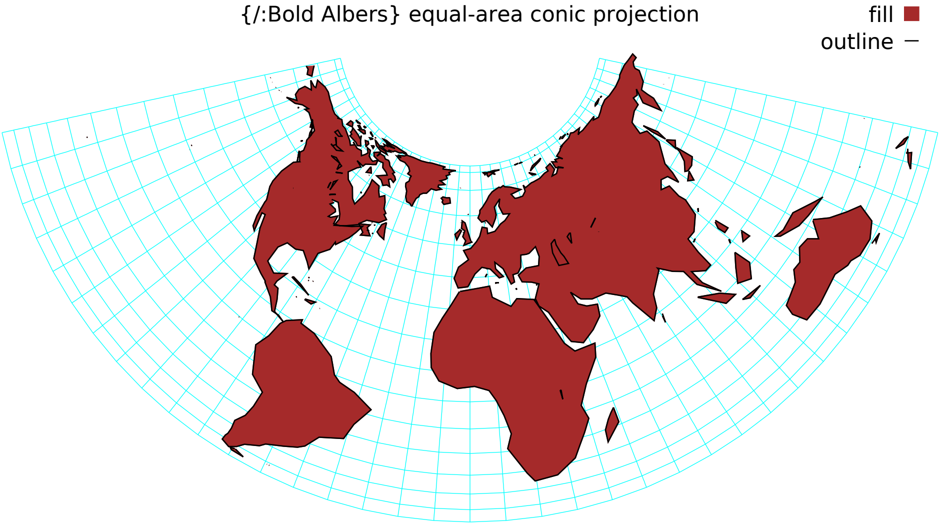

Linear cb axis
400
300
200
100
0
450
400
350
300
250
200
150
100
50
0
set log cb
450
100
10
1
0.1
set nonlinear cb
via log10(z) inv 10**z
450
100
10
1
0.1

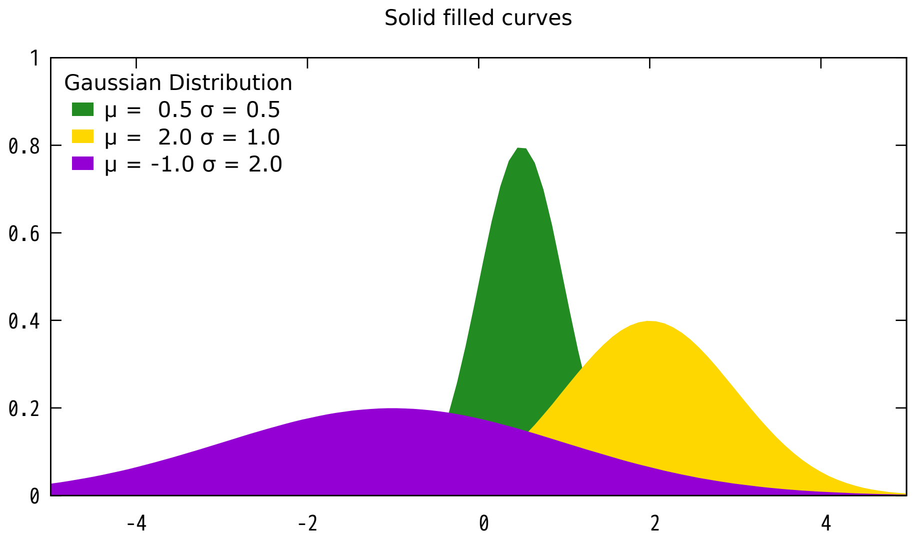

Rosenbrock Function
Rosenbrock(x,y)
100
10
1
0.1
0.01
1.5
1
0.5
0
-0.5
y
-1.5
-1
-0.5
0
0.5
1
1.5
x


10000
1000
100
10
10000
1000
100
10
rangelimited tics
set ytics 10
set y2tics auto
0
2000
4000
6000
8000
10000
12000
14000

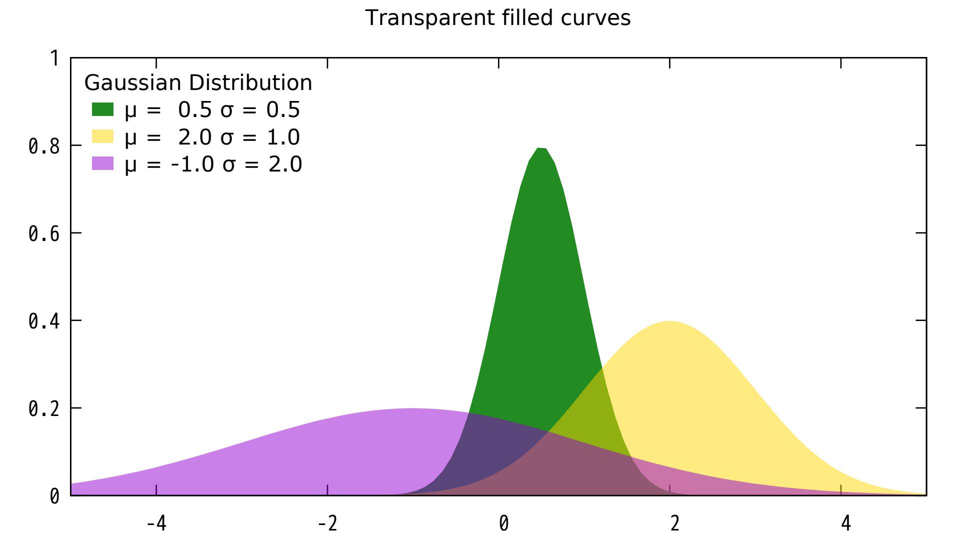

'{/:Bold Winkel tripel}' map projection
fill
outline

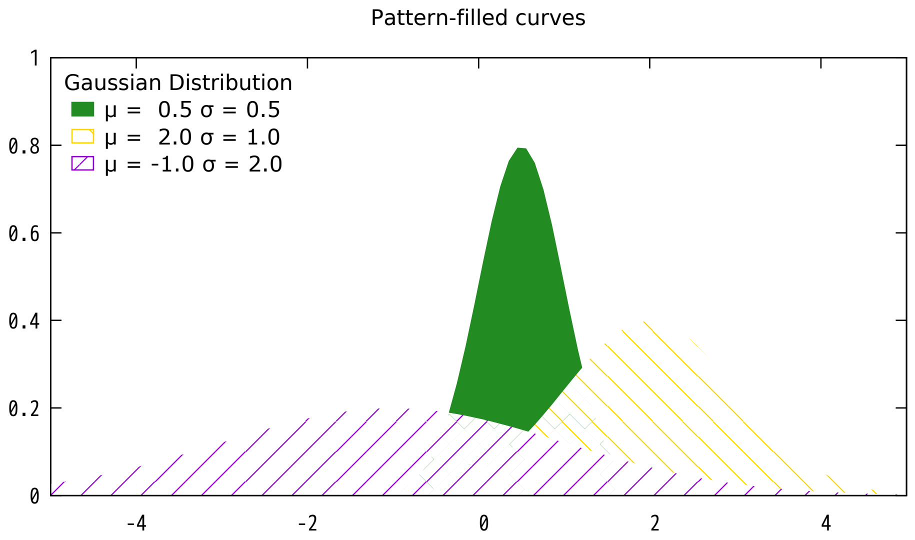

{/:Bold Hammer} equal-area map projection
fill
outline


{/:Bold Albers} equal-area conic projection
fill
outline

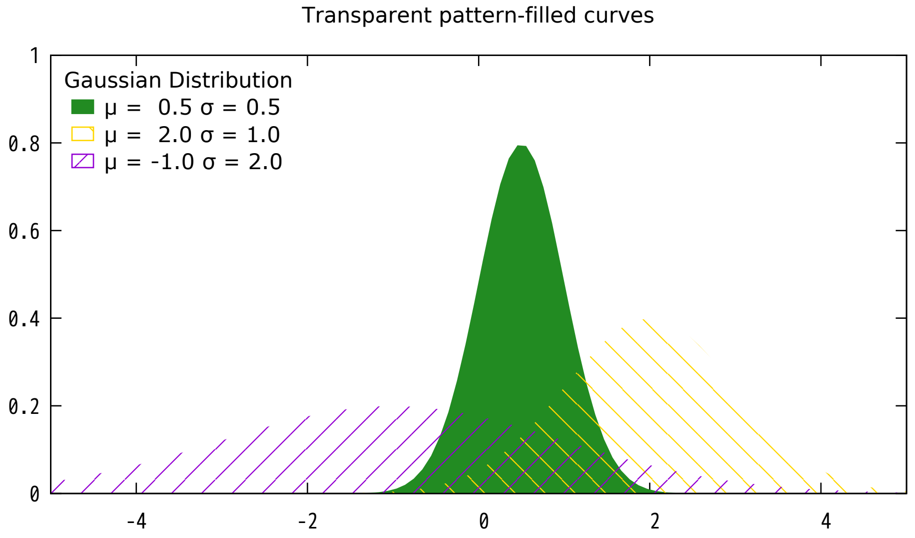


Solid filled curves
Gaussian Distribution
μ = 0.5 σ = 0.5
μ = 2.0 σ = 1.0
μ = -1.0 σ = 2.0
1
0.8
0.6
0.4
0.2
0
-4
-2
0
2
4

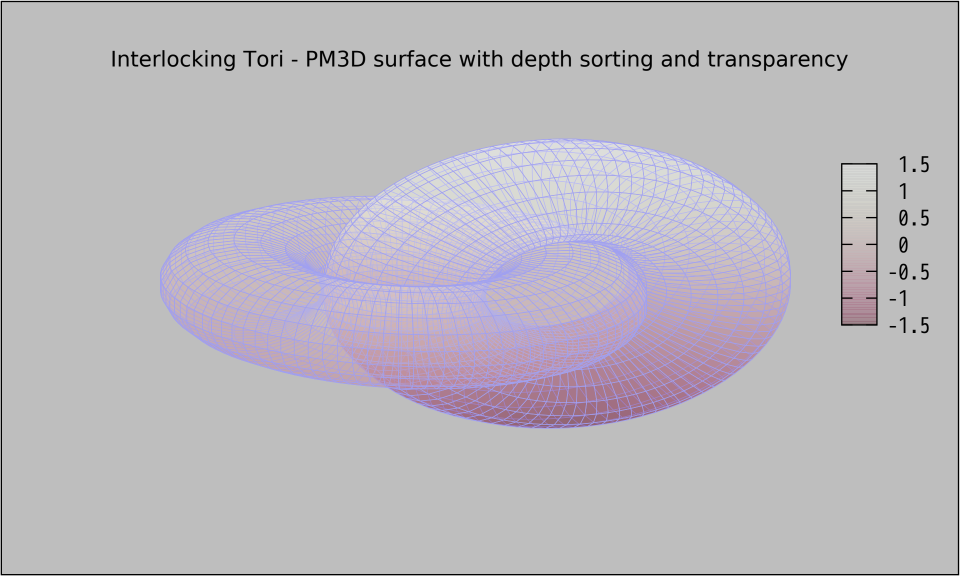

Transparent filled curves
Gaussian Distribution
μ = 0.5 σ = 0.5
μ = 2.0 σ = 1.0
μ = -1.0 σ = 2.0
1
0.8
0.6
0.4
0.2
0
-4
-2
0
2
4

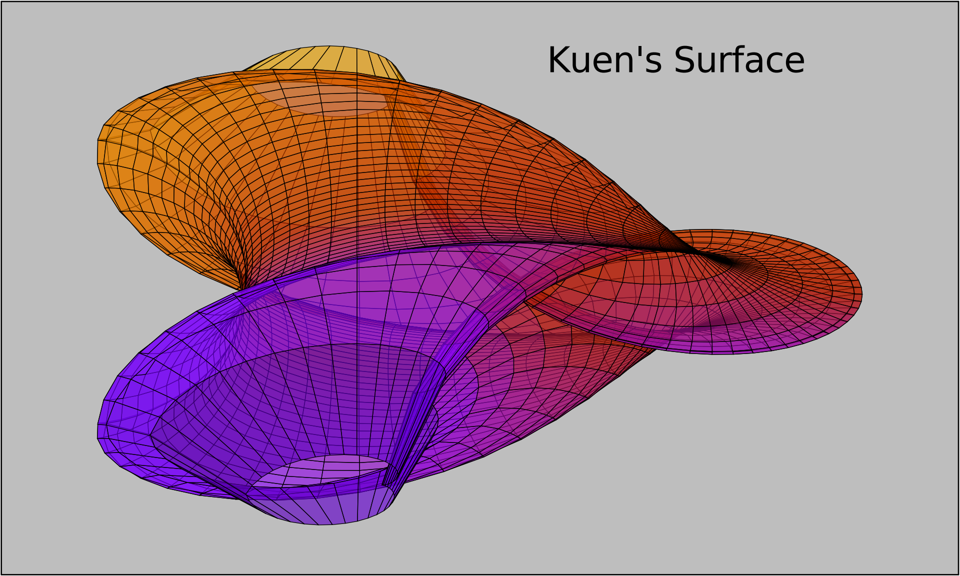


Pattern-filled curves
Gaussian Distribution
μ = 0.5 σ = 0.5
μ = 2.0 σ = 1.0
μ = -1.0 σ = 2.0
1
0.8
0.6
0.4
0.2
0
-4
-2
0
2
4

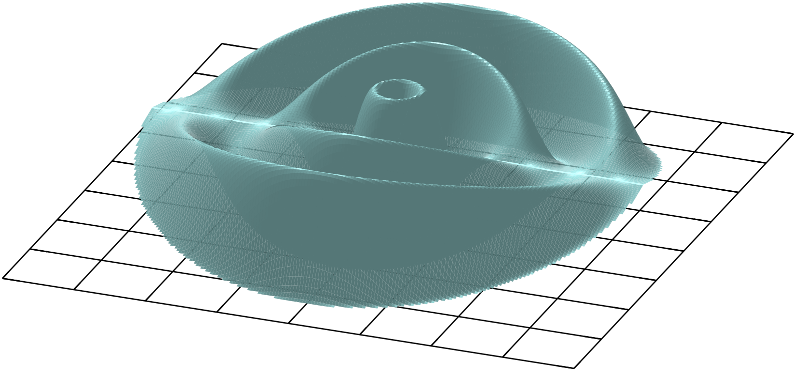


Transparent pattern-filled curves
Gaussian Distribution
μ = 0.5 σ = 0.5
μ = 2.0 σ = 1.0
μ = -1.0 σ = 2.0
1
0.8
0.6
0.4
0.2
0
-4
-2
0
2
4


Interlocking Tori - PM3D surface with depth sorting and transparency
1.5
1
0.5
0
-0.5
-1
-1.5


Kuen's Surface

pm3d lighting model with specular highlighting



PM3D surfaces with specular highlighting