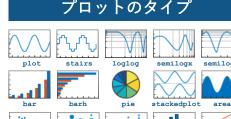
MathWorks[®] https://ip.mathworks.com

MATLAB Visualization Reference

プロットの基本

プロットの描画 >>> figure; >>> plot(x,y)

プロットのタイプ



scatter

















pareto

scatter

ベクトルプロットのタイプ



polarplot



polar

histogram



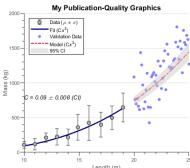








stream coneplot streamtube stream particles



プロットの装飾

フィギュアウィンドウ、座標軸オブジェクトの取得 >>> fig = gcf >>> ax = gca グラフィックスオブジェクトの取得(例) >>> h = plot(x,y)

座標軸オブジェクトプロパティの例



フォント操作

- >>> fontname(gcf,'Helvetica')
- >>> fontsize(gcf,18)

プロットの色・線太さ・マーカーを指定

- >>> h.Color = [0 0 0.5]>>> h.LineWidth = 1
- >>> h.Marker = 'o'

LineStvle



$\bigcirc + * \cdot \times - \mid \Box \Diamond \triangle \neg \triangleright \Diamond \star \diamond$ 'o' '+' '*' \.' 'x' \ ' \|' 's' 'd' \^' 'v' \>' '<' \p' \h'



座標軸の表示範囲の設定

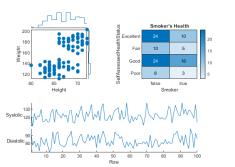
- >>> xlim([0 10]) % x軸について設定 >>> axis([0 10 0 100]) % x,y軸まとめて設定
- 目盛りの設定

>>> xticks(0:1:10) % 0~10まで1刻み

>>> daspect([1 2 1]) % x:y:z = 1:2:1の比率

注釈を追記

>>> annotation('textarrow',x,y,'String',text)



(2次元データ)の表示

画像の表示 >>> figure;

>>> image (A)

画像表示のタイプ



/ image





















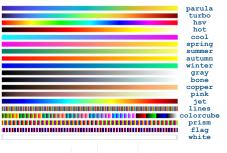


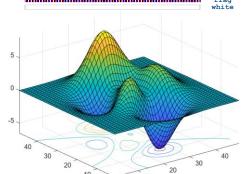
contourslice contour3

geoplot geoscatter geobubble

カラーマップ

カラーマップの変更 >>> colormap(colormapName)





MATLAB Plot Gallery: https://jp.mathworks.com/products/matlab/plot-gallery.html#

GUIでの操作

Live Editorツールストリップからの操作



プロパティインスペクターからの操作



複数プロットをまとめる



プロットの重ね書き >>> plot(x1,v1) >>> hold on >>> plot(x2,y2)



グラフの重ね書き >>> plot(x1,y1)

>>> ax2 = axis(0.7,0.7,0.2,0.2)>>> plot(x2,y2,'Parent',ax2)



複数のグラフを並べて表示(均一) >>> tiledlayout('flow')

>>> nexttile; plot(x1,y1) >>> nexttile; plot(x2,y2)



複数のグラフを並べて表示(不均一) >>> tiledlayout('flow') >>> nexttile; plot(x1,y1)

>>> nexttile([2,1]); plot(x2,y2) >>> nexttile; plot(x3,y3)



2軸プロット >>> plot(x,y1)

>>> yyaxis right >>> plot(x,y2)

3次元プロット



bubblechart3 stem3





scatter3











isosurface

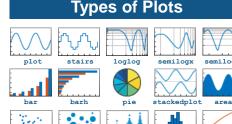
MathWorks[®]

MATLAB Visualization Reference

Plot Basic

Display plot >>> figure; >>> plot(x,y)

Types of Plots



scatter

histogram



bin scatter scatter

pareto

histogram



Types of Vector Plots



polarplot



polar







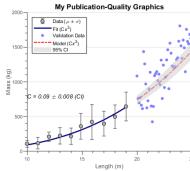


stream particles





coneplot streamtube stream



Customizing Plots

Get figure window object or current axes objects >>> fig = gcf >>> ax = gca Get graphics object (an example)

Examples of axes object properties

>>> h = plot(x,y)



Set font properties

>>> fontname(gcf,'Helvetica') >>> fontsize(gcf,18)

Set the color, line width, and marker of the plot

>>> $h.Color = [0 \ 0 \ 0.5]$ >>> h.LineWidth = 1 >>> h.Marker = 'o

LineStvle





Set axes limits

>>> xlim([0 10]) % set x-axis limits >>> axis([0 10 0 100]) % set both x,y axes

Set axes ticks

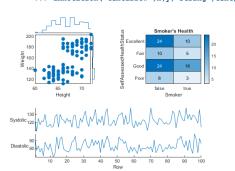
>>> xticks(0:1:10) % set ticks 0 to 10 by 1

Set the aspect ratio of the axes

>>> daspect([1 2 1]) % x:y:z in 1:2:1 ratio

Add annotation

>>> annotation('textarrow',x,y,'String',text)



Display Image/2D Data

Display image

>>> figure; >>> image (A)

Types of Images











heatman











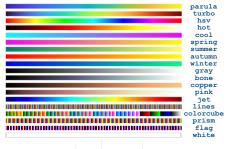


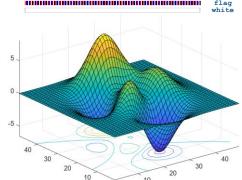


geoplot geoscatter geobubble contourslice contour3

Colormaps

Set colormap >>> colormap(colormapName)





GUI Operations

Operation via Live Editor Toolstrip



Operation via Property Inspector



Combining Plots



Overlay plots >>> plot(x1,y1)

>>> hold on >>> plot(x2,y2)



Overlay charts

>>> plot(x1,y1) >>> ax2 = axis(0.7,0.7,0.2,0.2)>>> plot(x2,y2,'Parent',ax2)



Tiled layout of charts (even) >>> tiledlayout('flow')

>>> nexttile; plot(x1,y1) >>> nexttile; plot(x2,y2)



Tiled layout of charts (varied) >>> tiledlayout('flow')

>>> nexttile; plot(x1,y1)

>>> nexttile([2,1]); plot(x2,y2) >>> nexttile; plot(x3,y3)



Chart with two y-axes >>> plot(x,y1)

>>> yyaxis right >>> plot(x,y2)

Types of 3D Plots



bubblechart3 stem3



scatter3













