MathWorks<sup>®</sup>

### https://www.mathworks.com

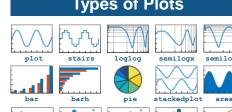
# **MATLAB Visualization Reference**

### **Plot Basic**

Display plot

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

### **Types of Plots**



scatter

histogram













pareto

scatter



## Types of Vector Plots



polarplot









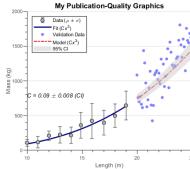






coneplot streamtube stream

particles



### **Customizing Plots**

Get figure window object or current axes objects

>> fig = gcf >> ax = qca

Get graphics object (an example) >> h = plot(x,y)



#### Set font properties

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

#### 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

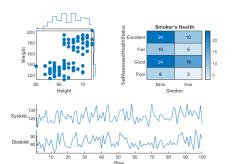
>> xticks(0:1:10) % set ticks 0 to 10 by 1

#### 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**























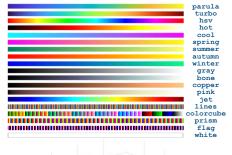


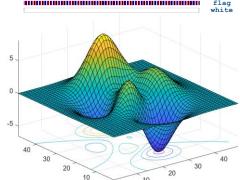
geoplot geoscatter geobubble

### **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 = axes("Position",[.7,.7,.2,.2]) >> plot(x2,y2,'Parent',ax2)



Tiled layout of charts (even)

>> tiledlayout('flow') >> nexttile; plot(x1,y1)





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 >> yyaxis left

>> plot(x,y1) >> yyaxis right >> plot(x,y2)

## Types of 3D Plots



bubblechart3 stem3

















