dual\_axes

Adds a second axis with a linear conversion to other set of units to plot

# Syntax:

dual\_axes(Axis,Title,Type,Conversion,Name,...)

# Description:

Adds a unit converted second axis to either y or x, or both. The second converted axis is placed opposed or on the same side as the main one. Axes are linked and can be panned and returned to home. \*Opposed: the main x-axis is at the bottom and the added generated one by this funcion will be at the top of the plotting area; the second y-axis will be added to the right. \*Same: the generated axis will be placed offset from the main one to the left (if y) or below (if x).

Notes:

* Title must be fed and called by the function. If no title is desired, feed a blank ([]) or empty string ('')
* All other modifiers need to be called BEFORE this function

# Inputs:

* Axis: Axis handler where to insert dual\_axes
* Title: Figure title. DO NOT CALL TITLE OUTSIDE OF THIS!
* Type: 'x','y', or 'xy' for opposed to main axes; 'xs','ys', or 'xys' for same side as maun axes.
* Conversion: Conversion factor from unit on plot to the one you want
* Name: New unit label
* [conv2]: Y-axis conversion factor when 'xy' or 'xys' is selected
* [name2]: Y-axis label when 'xy' or 'xys' is selected

# Outputs:

* N/A

# Usage:

You must call this function AFTER all figure modifiers (i.e: legends, limits, labels, etc.) EXCEPT title. This function calls the title, if no title is desired, enter a blank (i.e.: [])

* 'x' OR 'xs': X-axis

dual\_axes(gca,[],'x',1/.7457,'Power [hp]')

* 'y' OR 'ys': Y-axis

dual\_axes(gca,[],'y',0.0016,'SFC [lb/hp-hr]')

* 'xy' OR 'xys': Both Axes

dual\_axes(gca,[],'xy',1/.7457,'Power [hp]',0.0016,'SFC [lb/hp-hr]')

# Examples:

You can copy this code and paste it into the command window or select it and hit F9 on your keyboard:

## Both axes, opposed

figure;

x=0:0.1:10;

y=rand(size(x));

plot(x,y,'-');

grid minor

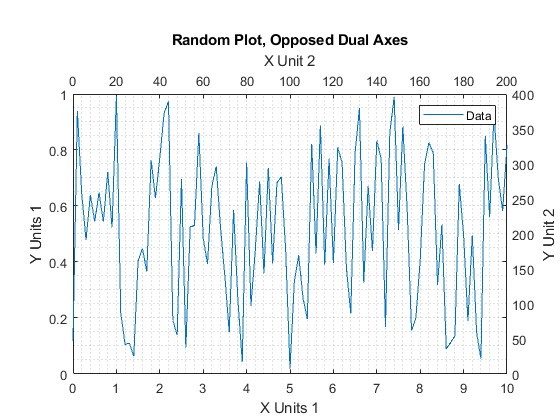
legend('Data');

xlabel('X Units 1');

ylabel('Y Units 1');

dual\_axes(gca,'Random Plot, Opposed Dual Axes',...

'xy',20,'X Unit 2',400,'Y Unit 2');



## Both axes, same

figure;

x=0:0.1:10;

y=rand(size(x));

plot(x,y,'-');

grid minor

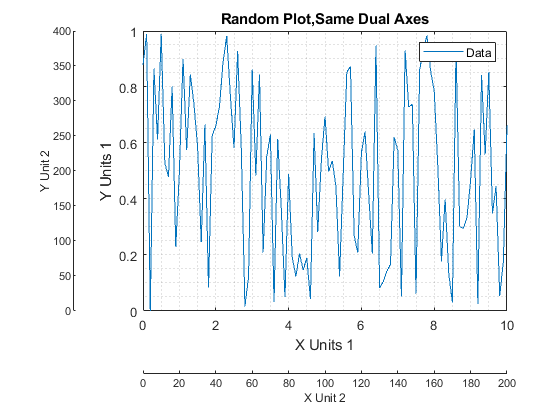
legend('Data');

xlabel('X Units 1');

ylabel('Y Units 1');

dual\_axes(gca,'Random Plot,Same Dual Axes',...

'xys',20,'X Unit 2',400,'Y Unit 2');



## X-axis, opposed

figure;

x=0:0.1:10;

y=rand(size(x));

plot(x,y,'-');

grid minor

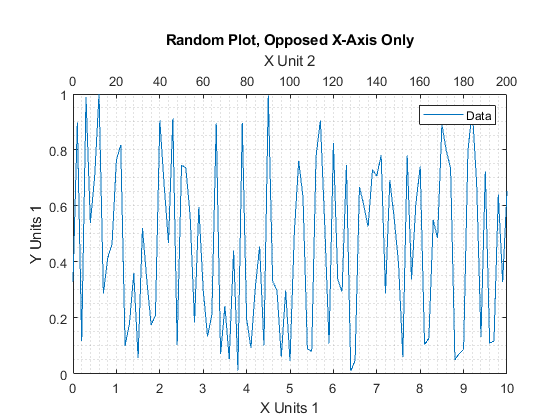
legend('Data');

xlabel('X Units 1');

ylabel('Y Units 1');

dual\_axes(gca,'Random Plot, Opposed X-Axis Only',...

'x',20,'X Unit 2');



## X-axis, same

figure;

x=0:0.1:10;

y=rand(size(x));

plot(x,y,'-');

grid minor

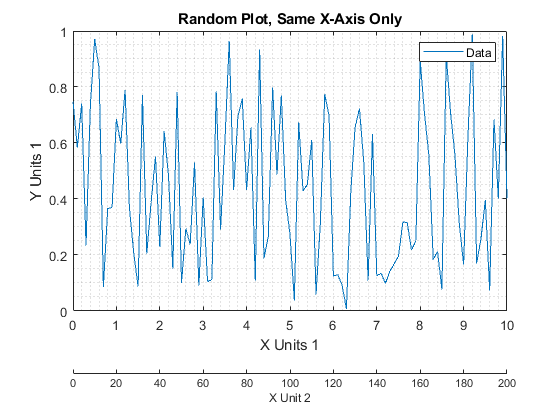
legend('Data');

xlabel('X Units 1');

ylabel('Y Units 1');

dual\_axes(gca,'Random Plot, Same X-Axis Only',...

'xs',20,'X Unit 2');



## Y-axis, opposed

figure;

x=0:0.1:10;

y=rand(size(x));

plot(x,y,'-');

grid minor

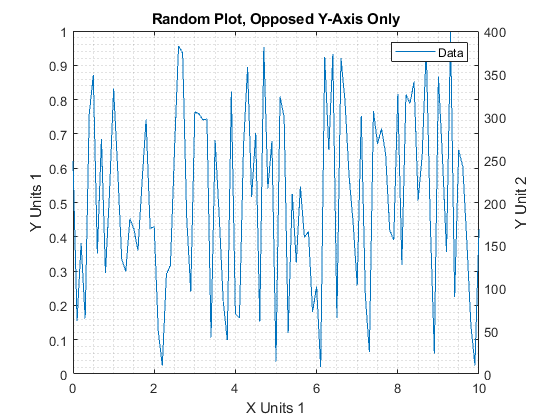
legend('Data');

xlabel('X Units 1');

ylabel('Y Units 1');

dual\_axes(gca,'Random Plot, Opposed Y-Axis Only',...

'y',400,'Y Unit 2');



## Y-axis, same

figure;

x=0:0.1:10;

y=rand(size(x));

plot(x,y,'-');

grid minor

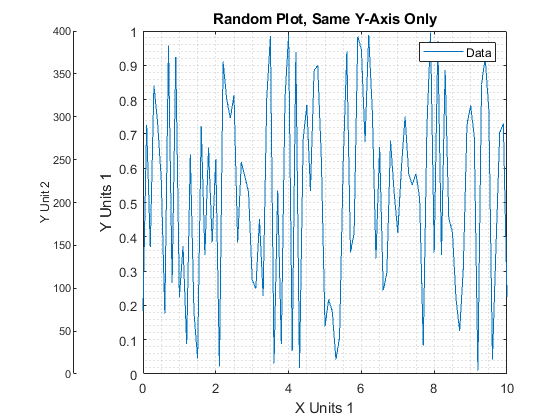
legend('Data');

xlabel('X Units 1');

ylabel('Y Units 1');

dual\_axes(gca,'Random Plot, Same Y-Axis Only',...

'ys',400,'Y Unit 2');



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