1 plothelpers.m

1.1 Motivation/Concept

These functions are used so that it is easier to make plots. The following functions are included:

1.1.1 axgrid.m

This function helps generate a grid of subplots with more explicit control on their spacing.

1.1.2 bigcolorbar.m

This function helps generate a standalone colorbar wherever you want.

1.1.3 bigcolorbarax.m

This function helps generate a standalone colorbar which aligns with a set axes handles input to the function.

1.1.4 bigtitle.m

This function helps generate a standalone title anywhere on the screen.

1.1.5 bigtitleax.m

This function helps generate a standalone title which aligns itself centered above a given set of axes handles.

1.1.6 fixfigstring.m

This function replaces an underscore in a string with so that it prints appropriately.

1.2 linkax.m

This function allows you to link any(unlike linkaxes) axes property between different axes.

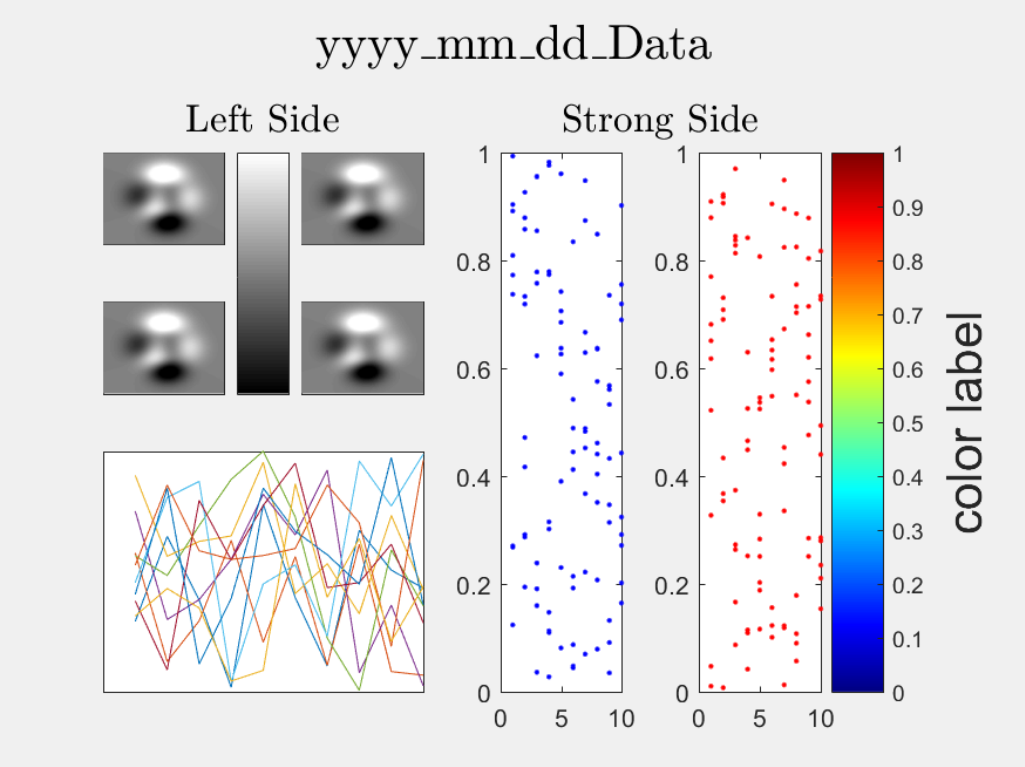
1.2.1 maxpos.m

This function returns the position bounds of an array of axes. It is used by *bigcolorbarax.m* and *bigtitleax.m*.

Example Usage (*examplePlotHelpers.m*)

This example demonstrates many of the functions in plotHelpers.

```
function examplePlotHelpers
%% Example Script Demonstrating how to use many of the plot helpers
fname = 'yyyy_mm_dd_Data';
f = figure(1);clf
%AXGRID: Make a Grid of subplots
axg = axgrid(4,4,0.075,0.075,0.1,0.8,0.1,0.8);
h = nan(1,5);
hb = nan(1,2);
h(1) = axg(1);pcolor(peaks(100));shading flat
h(2) = axg(2);pcolor(peaks(100));shading flat
h(3) = axg(2,1);pcolor(peaks(100));shading flat
h(4) = axg(2,2);pcolor(peaks(100));shading flat
h(5) = axg([3 4],[1 2]);plot(rand(10))

hb(1) = axg([1 4],[3 3]);plot(rand(10),'b.')
hb(2) = axg([1 4],[4 4]);plot(rand(10),'r.')

%BIGTITLEAX: Use axes to make a big title
bigtitleax('Left Side',h,0.01,'fontsize',16,'interpreter','latex');
bigtitleax('Strong Side',hb,0.01,'fontsize',16,'interpreter','latex');
%FIXFIGSTRING: fix the underscore values in the filename
%BIGTITLE: Explicitly define the location of a title
bigtitle(fixfigstring(fname),0.5,0.9,'fontsize',20,'interpreter','latex')

set(h,'xtick','','ytick','')
%BIGCOLORBARAX: Make a colorbar that aligns with each of the axes
[c,cax] = bigcolorbarax(h([1 3]),0.0125,0.05,'');
set(c,'ytick','');
colormap('gray')

%LINKAX the top 4 plots x,y, and caxis limits
linkax([h(1:4) cax],{'CLim'});
linkax(h([1 3]),'XLim');
linkax(h([1 2]),'YLim');
caxis([-5 5])

%make bigcolorbar for right 2 plots
c = bigcolorbarax(hb,0.01,0.05,'color label','fontsize',20);
colormap(c,jet(256))
f.InvertHardcopy = 'off';
% saveas(f,'doc/examplePlotHelpers.png');

end
```


yyyy_mm_dd_Data
Left Side
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