

# Analysis Methods in Atmospheric and Oceanic Science

AOSC 652

Fourier Analysis in IDL

Week 10, Day 2

2 Nov 2016

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## Multi-panel plots in IDL

It's fairly easy to make multi-panel plots in IDL . This exercise will focus on "ladder" plots or "stacked" plots.

Essentially, you're creating multiple individual plots on the same page.

Please copy over `~tcanty/AOSC652/2016/WEEK_10/ozone_ladder_plot_template.pro`

And `~tcanty/AOSC652/2016/WEEK_10/ozone_fit_regression_components.dat`

1<sup>st</sup> In the template file, read in the data file you just copied over.

2<sup>nd</sup> Assign a name to each variable in the data file

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# Multi-panel plots in IDL

Look at the plotting portion of this code:

Replace the text bracketed by ?....? with the variables names you assigned to the ozone observations and the modeled ozone and run the code.

Notice this line

```
lab1=string(mean(abs(observed ozone – modeled ozone)),format= (“Mean difference  
= “, F4.2, “DU”))
```

abs= take the absolute value

string=convert everything in between the parenthesis to a string

This is a nice way to add text to your plot that includes numerical values generated from calculations.

# Multi-panel plots in IDL

Now, we will add additional panels for the other variables.

To do this we'll simply “plot” additional lines.

The key is to include all of the parameters needed to generate the new “plot” and... you **MUST** include **/noerase** otherwise all other plots will disappear.

So, add a line to your code that plots the “total solar irradiance” or TSI

The y range should go from -5 to 5 with tickmarks at -5, 0, and 5.

```
Position=[0.15,0.4616,0.58,0.5851]
```

I recommend to switch back to color table 5 as well.

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```
Position=[0.15,0.4616,0.58,0.5851]
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To specify axis labels, you can use the tickname option

```
xtickname=['Blue','Red','Burnt Ochre']
```

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Continue adding the other components of the regression....