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Subject: Re: CONTOUR & TRIGRID/TRIANGULATE

Posted by [David Fanning](#) on Thu, 30 Mar 2006 19:08:33 GMT

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Ryan. writes:

```
> I am new to using IDL and cannot seem to figure out how to generate a
> contour map. I am attempting to produce a contour map of Relative
> Humidity at a certain altitude in the tropics. I have lats/lons/RH
> data (irregularly plot) but when I produce it all I get is various
> triangles and nothing nice. I have looked at David Fannings website
> and searched the newsgroup but I haven't found a clear answer how to do
> it. I am using version 6.2 and am using the /IRREGULAR keyword. An
> example of my code is below: (I am sorting it because I've read that
> it needs to be monotonically increasing by latitude)
>
> levels = [0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130,
> 140, 150, $
> 160, 170, 180, 190, 200]
> nlevels = N_ELEMENTS(levels)
> ncolors = nlevels + 1
> c_colors = INDGEN(ncolors) + 1
>
> A = data_array[1, *] ;The longitudes
> B = data_array[0, *] ;The latitudes
> C = data_array[3, *] ;The RH values
> sort_index = SORT(B)
> x = A[sort_index]
> y = B[sort_index]
> z = C[sort_index]
>
> DEVICE, DECOMPOSED=0
> LOADCT, 33, ncolors=ncolors, bottom = 1
> MAP_SET, /NOBORDER
> MAP_CONTINENTS
> CONTOUR, z, x, y, /IRREGULAR, /OVERPLOT, /CELL_FILL, levels=levels, $
> MIN_VALUE=-1, c_colors=c_colors
```

Leaving aside the fact that I didn't know relative humidity could go to 200 percent, I think it is likely that you have too few points in your data array to do a reasonable grid.

I've never had much luck letting IDL do almost anything for me, and I've really never had *any* luck letting it grid data for me. In any case, there is no need to sort the data in the way you are doing it. I would have a look at using TRIANGULATE and TRIGRID to grid your data (or perhaps GRIDDATA if you are

feeling ambitions), then using the gridded data in Contour.  
The code will look something like this:

```
A = data_array[1, *] ;The longitudes
B = data_array[0, *] ;The latitudes
C = data_array[3, *] ;The RH values
Triangulate, a, b, triangles, Sphere=sphere, /Degrees, FValue=c
gridded = TriGrid( a, b, c, triangles, [1.0, 1.0], /Quintic, $
  XGrid=glon, YGrid=glat)
DEVICE, DECOMPOSED=0
LOADCT, 33, ncolors=ncolors, bottom = 1
MAP_SET, /NOBORDER
Contour, gridded, glon, glat, /Overplot, /Cell_Fill, $
Levels=levels, C_Colors=c_colors
MAP_CONTINENTS
```

Does that work any better?

Cheers,

David

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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

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