Subject: Re: contouring data over a map
Posted by David Fanning on Thu, 08 Jun 2006 21:51:05 GMT
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twh18@yahoo.com writes:

> I am trying to contour a data set in the form of [lat lon value] onto a
> map. I have no problems plotting individual data locations, or
> contouring the data set without the map. I have tried to contour the
> data set on the map first using the overplot keyword with contour, then
> using sph_scat. Both methods fail, saying only "TRIANGULATE: spherical
> triangulation failed".
>
> I can successfully contour a set of 999 randomly generated points onto
> my map. When I increase to 1000 random points, it says "TRI-GRID:
> points are co-linear, no solution". Increasing to 75000 points (the
> size of my data set) returns "TRIANGULATE: spherical triangulation
> failed" again.
>
> There are several posts that hint at similar issues from around ten
> years ago, but I hvaen't found anything that talks about my problem
> specifically. Is there a (very small) upper limit on the number of
> points triangulate can handle? I'm an IDL newby and I would appreciate
> any advice very much.

This question comes up from time to time, and it almost
always involves someone who is letting the CONTOUR command
grid their data for them. This approach sounds better in
theory then it actually works in practice, I'm afraid.

The solution, I think, is to grid the data yourself before
you try to contour it. But I don't know for sure. I've never
run into this myself. If you would like to send me the data
and the code you are currently having trouble with, I'd be
happy to see if I can sort it out and write an article about it.

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: contouring data over a map
Posted by newbie16 on Fri, 09 Jun 2006 15:48:51 GMT

twh18@yahoo.com wrote:
> Hello,
>
> I am trying to contour a data set in the form of [lat lon value] onto a
> map. I have no problems plotting individual data locations, or
> contouring the data set without the map. I have tried to contour the
> data set on the map first using the overplot keyword with contour, then
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> specifically. Is there a (very small) upper limit on the number of
> points triangulate can handle? I'm an IDL newby and I would appreciate
> any advice very much.
>
> Thanks,
> Tim

Hello Tim:

I also found myself overplotting a contoured data set onto a map projection. Mind you, my data set spanned a couple of degrees and I am not sure how wide your data area is (such as the whole sphere). In general, what I have used for small areas is the following procedure for a data set of 10,000 points.

Create the following arrays:

XVALUES (longitude)
YVALUES (latitude)
DATA_VALS (corresponding data array for the above locations.)

I then rebinned by a factor of 15 (takes a while though), then:

(1) Create MAP_SET space to be plotted.

(2) Create my own Contour level intervals

(3) Overplot using CONTOUR

(4) Overplot MAP_GRID, continents, rivers, etc.....

Hope it helps....

t.
