
Subject: Re: Contour plots on maps

Posted by [davidf](#) on Mon, 15 May 2000 07:00:00 GMT

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Simon de Vet (simon@mathstat.dal.ca) writes:

- > I found this site, and already have incorporated the solution into my code.
- > If I plot my filled contours without a map projection, it plots beautifully,
- > with no holes or gaps.
- >
- > This is the problem: first, the lowest few contours are filled in. Then they
- > are all overwritten in white, and the next are filled in. These are also
- > whited out, and the last couple are plotted. Only the last ones are visible
- > when the plotting is complete.
- >
- > I am outputting all my plots to postscript files, and not to the screen
- >
- > I have also tried changing the centre of the plot, as you mentioned, so that
- > the data border corresponds to the plot border (Greenwich on the edge,
- > instead of the middle.) This eliminates the odd diagonal lines, but does
- > nothing to the filled contour troubles.
- >
- > These problems occur for all map projection types, and never if map
- > projection is turned off.

The problem would appear to be your color table. I recommend you load your color tables identically on both your display device and in the PostScript device. I usually do something like this. Suppose I am using 12 levels.

```
LoadCT, NColors=12, Bottom=1
contourColors = Indgen(12)+1
Contour, z, x, y, Levels=contourLevels, C_Colors=contourColors, /Fill
```

Then what I see on my display is identical to what I see in PostScript.

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting

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

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Contour plots on maps

Posted by [Simon de Vet](#) on Mon, 15 May 2000 07:00:00 GMT

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David Fanning wrote:

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- > read on my web page, but I would start with this one,
- > because you definitely have "holes" in your contour plots:

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Subject: Re: Contour plots on maps

Posted by [davidf](#) on Mon, 15 May 2000 07:00:00 GMT

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Simon de Vet (simon@mathstat.dal.ca) writes:

- > I have been trying to plot some contour maps onto different map
- > projections, and for the most part, it is working. I have been having
- > some troubles, however...
- >
- > Sometimes, contours try to connect across the map, cutting diagonally
- > across other lines, instead of terminating at the edges. These lines are
- > not at the borders of the data, merely at the borders of the current
- > projection.
- >

- > I have also had troubles with filled contours on map projections
- > (Mercator, in my case). While filled plots look nice with no map
- > projection used, with Mercator they are overwritten with white blocks at
- > times, leaving only a few spots of colour. The help says that using map
- > projections can cause filled contour troubles... Are there any
- > workarounds?

There are several articles that you will really want to read on my web page, but I would start with this one, because you definitely have "holes" in your contour plots:

http://www.dfanning.com/tips/contour_hole.html

The other problems can probably be solved by always specifying the center of the map projection with Map_Set. Here is another article that deals with an image instead of a contour plot on a map projection, but the idea is the same:

http://www.dfanning.com/tips/map_image.html

Cheers,

David

P.S. Welcome to the club. You should be receiving your Welcome Packet in the mail real soon now. :-)

--

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Subject: Re: Contour plots on maps
Posted by [Simon de Vet](#) on Tue, 16 May 2000 07:00:00 GMT
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"R.Bauer" wrote:

- > You should always use the /cell_fill keyword instead of /fill!!!!

Ding ding! We have a winner! :)

The bizzare part is that cell_fill does not appear in my online help, nor in my manual.

I am using IDL 5.3, and cell_fill works perfectly, despite not being mentioned anywhere. It does slow the script down by about 15 seconds, but it's well worth it.

Thank you!

Simon

Subject: Re: Contour plots on maps
Posted by [R.Bauer](#) on Tue, 16 May 2000 07:00:00 GMT
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>
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>
> Simon

You should always use the /cell_fill keyword instead of /fill!!!!

ONLINE HELP:

CELL_FILL

Set this keyword to produce a filled contour plot using a "cell filling" algorithm. Use this keyword instead of FILL when you are drawing filled contours over a map, when you have missing data, or when contours that extend off the edges of the contour plot. CELL_FILL is less efficient than FILL because it makes one or more polygons for each data cell. It also gives poor results when used with patterned (line) fills, because each cell is assigned its own pattern. Otherwise, this keyword operates identically to the FILL keyword, described below.

Tip - In order for CONTOUR to fill the contours properly when using a map projection, the X and Y arrays (if supplied) must be arranged in increasing order. This ensures that the polygons generated will be in counterclockwise order, as required by the mapping graphics pipeline.

Warning - Do not draw filled contours over the poles on Cylindrical map projections. In this case, the polar points map to lines on the map, and the interpolation becomes ambiguous, causing errors in filling. One possible work-around is to limit the latitudes to the range of -89.9 degrees to + 89.9 degrees, avoiding the poles.

regards

R.Bauer
