Subject: Re: Filled Contour Plotting
Posted by msg5332 on Fri, 10 Feb 1995 02:30:31 GMT
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In article <3h8bhk$akq@ncar.ucar.edu>, cavanaug@uars1.acd.ucar.edu (Charles Cavanaugh) wrote:

>
> The IDL V3.6 Reference Guide says about the CONTOUR routine (on page 1-49) :
>
> "Contours that are not closed can not be filled because their interior and
> exterior are undefined. Contours created from data sets with missing data
> may be closed; many map projections can also produce contours that are not
> closed. Filled contours should not be used in these cases."
>
> And, of course, I would like to make a filled contour plot, using a data
> set with missing data and overplotting the contour plot onto different map
> projections. Has anyone found a way to do this? What about the CLOSED
> keyword? I found a routine called POLYCONTOUR, but the documentation says
> that this routine is obsolete.
>
> Any help would be greatly appreciated.
>
> Charles
>
> --
> Charles Cavanaugh "Words are very unnecessary, they can only do harm"
> cavanaug@ncar.ucar.edu - Depeche Mode
> NCAR Boulder, CO, USA "Facts all come with points of view"
> My opinions - Talking Heads

The /CLOSED keyword seems to work fine and is a nice improvement over the older
version of IDL. Just use that and you should be able to fill the open contours which intersect the sides of your map domain.

The IDL contour routine provides a solid color fill or line-pattern fill which works well if you don't mind the way it looks. The line fill pattern works with most if not all of the output devices (like postscript, etc).

POLYCONTOUR seems to still work and is necessary if you want to define your own specific pattern to fill with. The pattern must be 3-d array with 2 or more defined patterns. If you use want to define your own patterns using polyfill, you must first save the contours to a file with the PATH_FILENAME="your.file" in the contour call. Then call polycontour. For example...
;------

```
 contour, fldplt, xpositions, ypositions, LEVELS = lvls, $
          PATH_FILENAME = 'contours.dat', /CLOSED

  pat = bytarr(4,4,2)       ; here we have defined only 2 patterns

  pat(0,*,0)   = [0,  0, 255,   0]
  pat(1,*,0)   = [0,  255,255,255]
  pat(2,*,0)   = [0,  0, 255,   0]
  pat(3,*,0)   = [0,  0,   0,   0]

  pat(0,*,1)   = [0,  255, 0, 255]
  pat(1,*,1)   = [0,  0, 255,   0]
  pat(2,*,1)   = [0,  255, 0, 255]
  pat(3,*,1)   = [0,  0,   0,   0]

POLYCONTOUR, "contours.dat", /DELETE_FILE, PATTERN = pat
;------
```

The only problem with defining your own patterns is that they won't be printed correctly if you use postscript. One way around this is to plot to the Z-buffer and then TVrd the Z-buffer and save the image to postscript. I think the HP device has some built-in patterns but I haven't tried that yet. Does anyone else have solutions to the printing problem?

- Matt Gilmore
