Subject: Re: Blanking out regions

Posted by high on Tue, 10 Feb 2004 13:42:28 GMT

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Victorpoe@hotmail.com (Victor Podsechin) wrote in message news:<20b63ed6.0402050043.3aa30c29@posting.google.com>...

- > I need to draw a contour plot of data on irregular 2d grid and blank
- > out regions outside the boundaries of multiconnected non-convex domain
- > A in R2.
- > : Draw contours
- > Contour, MyData, X, Y, /IRREGULAR
- > : Draw boundary
- > Oplot, BoundaryA
- > ;Blank out exterior
- > 7
- > Is there a way to fill the complement of A to circumscribed rectangle?
- > Any advice will be appreciated.
- > Victor.

If I remember correctly it was David Fanning who discussed some time ago how this can be done in case you have a masking array, in that instance terrain elevation where the oceans with value zero were to be blanked out. I have adapted Fanning's example for my own work and added a method for creating a masking array from a polygon. I include below the part of my program that does this job, and some comments within.

; You read your data into an array, then do

thisDevice = !D.Name; Store the present device in a variable xsize=500 & ysize=600; Define the dimensions of your plotting device Set_Plot, 'Z'; Set the Z-buffer as the current device Device, Set Resolution=[xsize, ysize]

; Here I read the masking polygon, a list of (x,y) coordinates openr, lun, '../kortagr/boundary.xy', /get_lun readf, lun, dummy readf, lun, npoints boundary=fltarr(2, npoints) readf, lun, boundary free_lun, lun; Now the vertices of the polygon are stored in the array boundary

plot, boundary[0,*], boundary[1,*], /nodata, xstyle=1, ystyle=1, /isotropic

; Plot the boundary with /nodata keyword map=tvrd(); Now read the image (axes) from the Z-buffer for later use.

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mask1=intarr(xsize,ysize)

id_mask1=where(map ne 0) mask1[id mask1]=1; set mask1 to one where the axes are ; Do the contour plot contour, z, x, y, /irregular, nlevels=nlevels, /overplot, c_labels=replicate(1, nlevels);, c_colors=c_colors, /fill, /overplot, max_value=100, min_value=-100.

map=tvrd(); read again the image from the Z-buffer

Set Plot, thisDevice window, xsize=xsize, ysize=ysize; make a visible window

; Convert the boundary coordinates to device-coordinates res=convert_coord(boundary[0,*], boundary[1,*], /data, /to_device) res=fix(res[0:1,*]); Change to integer type - to be used as array indices(actually not necessary).

id_mask=polyfillv(res[0,*], res[1,*], xsize, ysize); create an array of all the array indices within the polygon defined by 'res'

mask=intarr(xsize, ysize) mask[id mask]=1 mask=mask+mask1; Region inside the polygon + the axes are to be plotted

map=map*mask; Blanks map where mask is zero tv, map; puts map to the plotting window **END**

This is it, hope it was helpful. Regards, Hjalti