Subject: Re: Edge detection and convert edges into polygons
Posted by M. Suklitsch on Mon, 04 Aug 2008 07:50:25 GMT
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Hi!

Thanks for the quick replies!

Paolo, I have several subregions, defined over a specific area. These subregions are sometimes bigger (> 100 pixels), sometimes only consist of three or four pixels. And yes, I want to find out in which of these subregions my station, or more general a point of interest, lies.

David, this is what I've come up with thanks to your hints. Although this code works, maybe there is some shortcut that makes the whole thing even better?

```
FOR mm = 1, iNumOfRegs-1 DO BEGIN
   ; do some edge detection in rgiGridMsk
   rgiIndices  = WHERE(rgiGridMsk EQ mm)
   IF rgiIndices[0] NE -1 THEN BEGIN
      rgiBoundary = Find_Boundary(rgiIndices,$
         xsize=rgiGridSiz[0],ysize=rgiGridSiz[1])

      rgrXVect = FLTARR(N_ELEMENTS(rgiBoundary)/2) & rgrYVect =
rgrXVect

      ; now get the corresponding lat/lon values and store them as
vectors
      FOR nn = 0, N_ELEMENTS(rgiBoundary)/2 -1 DO BEGIN
         rgrXVect[nn] =
rgrGridLon[rgiBoundary[0,nn],rgiBoundary[1,nn]]
         rgrYVect[nn] =
rgrGridLat[rgiBoundary[0,nn],rgiBoundary[1,nn]]
      ENDFOR

      ; put the polygons into IDLanROI object
      grROI = OBJ_NEW('IDLanROI', rgrXVect, rgrYVect)

      ; use IDLanROI->ContainsPoints to check whether stations lie
      ; within or without a region
      rgiMatch = grROI->ContainsPoints(rgrLon,rgrLat)
      iFoundMatch = (WHERE(rgiMatch NE 0))[0]
      IF iFoundMatch NE -1 THEN BEGIN
         rgiStationMaskIdx[WHERE(rgiMatch NE 0)] = mm
      ENDIF
```

```
   ENDIF
ENDFOR
```

Maybe a short explanation: rgrLon and rgrLat are vectors holding the longitude and latitude of several points of interest, rgiStationMaskIdx is a vector of the same size as rgrLon where the corresponding subregion index is stored.

Cheers,
Martin

David Fanning schrieb:
>
> I think I would just work with the integer mask and find
> the boundaries around the sub-regions:
>
> http://www.dfanning.com/ip_tips/boundary.html
>
> You can use the boundary directly to create an IDLanROI
> object, or (probably a good idea) you can reduce the
> number of vertices in the boundary with MESH_DECIMATE
> first.
>
> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming: http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")
