
Subject: Help needed in remapping data using IDL
Posted by [kaba](#) on Tue, 04 May 2010 21:30:16 GMT
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Hello Guys, I am relative a new IDL programer who would appreciate some help in how to remap a sample data from satellite projection to Lambert Conformal.

Here are the detail of What I have done so far:

```
;;INPUTS are 2D- arrays of : DATA, LAT & LON   ;; each 1600*600
inproj = 7   ;Satellite projection
indatum = 0   ; Clarke 1866
yy=WHERE(LAT GE -90.0 AND LAT LE 90.0)
zz=WHERE(LON GE -180.0 AND LON LE 180.0)

inclat=MEAN(lat(yy)) & inclon=MEAN(lon(zz))      ;;input central
lat,lon
inlimit=[MIN(LAT(yy)), MIN(LON(zz)), MAX(LAT(yy)), MAX(LON(zz))]
LAT1=REVERSE(LAT,2) & LON=REVERSE(LON, 2) & DATA=REVERSE(DATA,
2)
```

```
;;;Desired output 2D ARRAY of DATA, LAT & LON   ;;each 1073* 689
;;; I want the LAT/LON values of the corners of the grid to be :
```

```
outproj=104   ; /GCTP lambert conformal conic
outdatum = 0   ; Clarke 1866
outlimit=[238.4459,20.1919, 229.8965,49.9396, 299.1145,50.1054,
290.7919, 20.3317]
outsp1 = 25.0   ; Out standard parallel 1
outsp2 = 25.0   ; Out standard parallel 2
outclat = 37.9   ; Out standard parallel 2
outclon = -97.0   ; Out standard parallel 2
```

```
;;Define the malp projections
```

```
mapin=MAP_PROJ_INIT(inproj, ELLIPSOID=indatum, CENTER_LATITUDE=inclat,
$
    CENTER_LONGITUDE=inclon, limit=inlimit)

mapout= MAP_PROJ_INIT(outproj, /GCTP, ELLIPSOID=outdatum,
STANDARD_PAR1=outsp1,
    STANDARD_PAR2=outsp2, CENTER_LATITUDE=outclat,
$
    CENTER_LONGITUDE=outclon,
```

limit=outlimit)

;;;converting lat/lon to UV coord with some help from Mr. Fanning's
docs online

```
xx=MAP_PROJ_FORWARD(LON(*,0), LAT(*,0),  
MAP_STRUCTURE=mapout)  
yy=MAP_PROJ_FORWARD(LON(0,*), LAT(0,*),  
MAP_STRUCTURE=mapout)
```

```
xvec=REFORM(xx[0,*]) & yvec=REFORM(yy[1,*])  
xhalf=(xvec[1]-xvec[0])/2.0 & yhalf=(yvec[1]-yvec[0])/2.0  
xrange=[xvec[0]-xhalf, xvec[N_ELEMENTS(xvec)-1] +xhalf]  
yrange=[yvec[0]-yhalf, yvec[N_ELEMENTS(yvec)-1] +yhalf]  
newrange=[xrange[0], yrange[0], xrange[1], yrange[1]]
```

;;Question: I actually wanted to use "outlimit" which is an 8
element not 4, how
;;can I use that instead?

;;; Remap the data

```
timgout=MAP_PROJ_IMAGE(data, MAP_STRUCTURE=mapin) ;,  
UVRANGE=uvrange) ; inlimit, IMAGE_STRUCTURE=mapin,
```

```
imgout=MAP_PROJ_IMAGE(data, newrange, MAP_STRUCTURE=mapout,  
UVRANGE=uvrange,  
IMAGE_STRUCTURE=mapout)
```

When I plot this using on a window, the map projection looks right but
the data does not seem to be remapped correctly.
This is my first time using map_proj_init and map_pro_image. Please
help.

Thanks

Subject: Re: Help needed in remapping data using IDL
Posted by [David Fanning](#) on Wed, 05 May 2010 12:50:35 GMT
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kaba writes:

>
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> some help in how to remap a sample data from satellite projection to
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> the data does not seem to be remapped correctly.
> This is my first time using map_proj_init and map_pro_image. Please
> help.

It seems natural to want to work with latitude and longitude coordinates when you are working with map projections, but resist that thought! To do this kind of reprojection properly, you want to be in XY space. (IDL sometimes calls this UV space, but in any case it is a rectangular space where things make a lot of sense, as opposed to, say, lat/lon space where they don't.)

Have a look at this article for additional information:

http://www.dfanning.com/map_tips/warpimage.html

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.")
