Subject: closed surface
Posted by Chunlei Liu on Thu, 19 Sep 2002 17:30:16 GMT
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Dear all,

I am trying to construct a closed polygonal surface from some scattered points in 3D space. The IDL routine SURFACE won't work in this case, since it doesn't handle a closed surface. I am trying to TRIANGULATE the lon, and lat in spherical coordinate as following,

```
-----------------------------------
; Create array to hold vertices
vertexlist = dblarr(3, 200)
; Create some random longitude points:
vertexlist[0, *] = RANDOMU(seed, 200) * 360. - 180.
; Create some random latitude points:
vertexlist[1, *] = RANDOMU(seed, 200) * 180. - 90.
; Set z to uniform value
vertexlist[2, *] = 300

Triangulate, vertexlist[0, *], vertexlist[1, *], $
  tri,CONNECTIVITY=connect,/degrees
vertex = CV_COORD(From_Sphere=vertexlist, /To_Rect, /degrees)
oSurf = OBJ_NEW('IDLgrPolygon', vertex, polygon=connect, STYLE=2, $
            SHADING=1, COLOR=[0,20,255])

oGroup = OBJ_NEW('IDLgrModel')
oGroup->Add, oSurf
XOBJVIEW,oGroup

-------------------------------------------
```

In the above example, the object is surposely a sphere, however the resulting 'sphere' has a very rough surface, looks like a diamond instead. I am suspecting it is because of the incorrect connectivity, but I don't how to correct them.

Another related problem, if I try to interpolate the date using TRIGID as following, my IDL gave me error message in TRIANGULATE when I tried to store SPHERE to a named variable myS.

```
-------------------------------------------
--> Triangulate, vertexlist[0, *], vertexlist[1, *], $
    tri,CONNECTIVITY=connect,/degrees,FVALUE=myF,SPHERE=myS
                                      ^^^^^^^^^
```

```
GS = [180.0/50.0,180.0/50.0]
limits = [0.0,0.0,360.0,180.0]
gridedData = TRIGRID( myF, GS,limits,SPHERE=myS, XGrid=xvector, $
    YGrid=yvector, /DEGREES,/QUINTIC )

-----------------------------------------
```

The error message says,
% Attempt to store into an expression: <DOUBLE Array[1, 200]>.

Appreciate any help,hints,tips....
Chunlei
