Subject: interactive polar blobby plots
Posted by tbowers0 on Thu, 11 Jul 2002 22:42:53 GMT
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Ok, before I spend the next 3 (maybe 4) weekends coding instead of windsurfing, thought I'd ask the group first. And, I know I've seen other posts on this so users are interested.

Wanting to make really cool, professional looking interactive (object grafx) plots of spherical ploar data (r,theta,phi where if all r's = 0.5, it's a round sphere with radius 0.5). I'm thinking, "Well, it should look kinda like the IDL hydrogen demo with axes thru the center and neat-o isosurface style selection stuff." But I have only 1 r value for every theta,phi. In other words, my data is a 2D array of r distances, not a 3D volume with, in a sense, alot of r distances from center to the edge of the volume as does the demo data. Also, with my data the isosurface should be a function of distance from the center, in the hydrogen demo the surface is a function of some other variable (probabilities) that happen to be at distance from center.

So, what are my options? Use this demo? To do this, I think I'd have to recast my 2D data array into 3D rectilinear coord. array. Maybe:

-Convert my theta, phis, to x,y,z coordinates
-Create 3D array. Guess fltarr(100,100,100) may suffice
-Create my XYZ axes to range the min & max xyz coords and span all 100 elements in each 3D array dim.
-NaN the whole volume of 3D data so it'll be a bunch of transparent nothin'
-Find where in the 3D data my x,y,z coord for each r data point lives, set these to a value, say 1.0
-Root around hydrogen demo source code and make sure it uses this new vol data instead

But I'm not even sure this'll work, anybody see pitfalls?

My other option seems to be starting from scratch and doing something like:

```
; r is 2D array of distances from [0,0] over all theta (cols) & phi (rows)
mesh_obj, 4, vertexList, polygonList, r ; make an oddly shaped spherical
blob
oPolarPlot = obj_new('IDLgrPolygon', DATA=vertexList, POLY=polygonList,
COLOR=[255,0,0], STYLE=2)
```

then do the whole mess of trying to get axes in the center, etc., etc., etc.
Also need to be able to see the axis values, so would need to add surface opacity stuff, etc., etc., etc.

Ok, anyone out there already tackled this problem or something similar? Any inputs or suggestions?

many thanks,
todd