Subject: Axes for 3D volumes
Posted by Richard Edgar on Wed, 07 Feb 2007 20:32:13 GMT
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Greetings,

I am attempting to produce 3D isosurfaces in IDL, and I'd like to add proper axes to the output. I've been following the example on http://www.dfanning.com/tips/volume_axes.html
and with that, I can get axes which are labeled by cell number:

```
Surface, Dist(30), /NoData, $
  xtitle="Radius",ytitle="Azimuth",ztitle="Z",$
  XRange=s1, YRange=s2, ZRange=s3,$
  /NoErase, /Save

SHADE_VOLUME,dens,densSurface,vertices,polys,/LOW

image = POLYSHADE(vertices,polys,/T3D,XSIZE=600,YSIZE=600)
```

where dens[i,j,k] is the 3D array I want to construct the isosurface from, and s1=[0,imax] etc.

I'd like the axes labeled by the physical dimensions of dens. I have these available, in rRange, phiRange and zRange (they're actually polar co-ordinates, but I'm happy to treat them as cartesian). If I try

```
Surface, Dist(30), /NoData, $
  xtitle="Radius",ytitle="Azimuth",ztitle="Z",$
  XRange=rRange, YRange=phiRange, ZRange=zRange,$
  /NoErase, /Save
```

I get
% POLYSHADE: Polygon 0 is degenerate, more may exist.
and an empty set of axes.

I have the impression that something, somehwere, is not communicating the axis scaling correctly, but I'm at a loss as to what. The {xyz}range keywords to SHADE_VOLUME don't seem to be the answer.

What extra incantation(s) do I need to get the axes labeled properly?

Thanks in advance,

Richard Edgar

Subject: Re: Axes for 3D volumes
Posted by David Fanning on Mon, 19 Feb 2007 15:52:43 GMT
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Richard Edgar writes:

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> the axis scaling correctly, but I'm at a loss as to what. The {xyz}range
> keywords to SHADE_VOLUME don't seem to be the answer.
>
> What extra incantation(s) do I need to get the axes labeled properly?

I would try saving the data coordinate system from the first
surface plot (!X, !Y, !Z and !P) and restoring it *after* the
second surface plot command and *before* you call Shade_Volume.
That way, you should be able to get your POLYSHADE on the right
set of axes.

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.")
