
Subject: Re: Spherical surface plot
Posted by [Mrunmayee](#) on Sun, 03 May 2009 12:50:09 GMT
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On May 2, 6:52 pm, David Fanning <n...@dfanning.com> wrote:

> Mrunmayee writes:

>> I have been trying to create a spherical surface plot and have
>> partially succeeded. Here is what I did to create a surface:

>> theta3 = findgen(361)/2. * !pi/180. ; 0<= theta <= !pi

>> phi3 = findgen(361) * !pi/180. ; 0<= phi <= 2*!pi

>> x3 = sin(theta3) # cos(phi3)

>> y3 = sin(theta3) # sin(phi3)

>> sph = sqrt((1. - x3^2 - y3^2) > 0.) ; This is to avoid

>> "floating illegal operand" error.

>> sph1 = sph ; Just for comparison

>> with sph, to be modified as follows

>> sph2 = sph[181:360,*] ; Array containing

>> elements for !pi/2 < theta <= !pi i.e. southern hemisphere

>> sph1[181:360,*] = -sph2 ; Since sqrt will just take

>> +ve root, this inverts and creates southern hemisphere.

>

>> Success: fsc_surface, sph1, x3, y3 ; Glorious spherical surface

>> surface, sph1, x3, y3 ; Rather pathetic

>> rendering of surface but still a spherical surface

>> Failure: shade_surf, sph1, x3, y3 ; Nothing viewd. NOTHING AT

>> ALL. Whether device, decomposed=0/1 doesn't matter.

>

>> Anyone knows what's happening?

>

> I don't know what is happening, but the result doesn't

> surprise me much. SURFACE and SHADE_SURF use what is

> technically referred to as a "two and a half D" surface

> rendering engine. All direct graphics commands use this

> 2.5D way of rendering 3D objects. Object graphics, which

> is what FSC_SURFACE is using, uses a true 3D rendering

> engine. I would have expected it to be better at rendering

> this surface.

>

> I think the bottom line is that if you *really* want to

> do 3D things, you will have to do them in object graphics

> if you want "modern" (as opposed to state of the art in the

> 1970s) 3D results.

>

> 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.")

Oh man... I have never ventured into objects in IDL. Not much idea about 2.5D and 3D rendering. So, when you use OBJ_NEW("IDLGrSurface"), it uses 3D rendering?

But as to what is happening here. See if doing following shines any new light.

;Continuing variables from above:

```
sphn = sph[0:180, *] & xn = x3[0:180, *] & yn = y3[0:180, *] ;North  
hemisphere and coordinates  
sphs = -sph[181:360, *] & xs = x3[181:360, *] & ys = [181:360, *] ;  
South hemisphere and coords
```

surface, sph1, x3, y3, ax=0, az=0 ; This projection is uber-horrible. In this, whole eastern hemisphere is missing.

surface, sphn, xn, yn, ax=0, az=0 ; Nothing of the sort.

surface, sphs, xs, ys, ax=0, az=0 ; Again, nothing missing!

Thanks for replying.

Gauri.
