
Subject: Re: Spherical surface plot

Posted by [David Fanning](#) on Sat, 02 May 2009 13:52:20 GMT

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Mrunmayee writes:

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> 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

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Sepore ma de ni thui. ("Perhaps thou speakest truth.")
