Subject: Re: Origin of 3D-plots(SURFACE)
Posted by davidf on Mon, 20 Jan 1997 08:00:00 GMT
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Remco Schoenmakers <remschoe@astro.rug.nl> writes:

> I am visualising 3D-data using surface in all different
> viewing angles. The problem is that I want the origin (0,0,0)
> always in the middle of the plotwindow, which is not standard.
> Does anyone know how to do this?

I am going to presume that your data is pretty much symetrically located about the origin, and that what you really want here is for the plot *axes* to go through the origin. (If this is not what you mean, let me know.)

The basic solution to this problem is to draw the surface of the data without the axes, and then use the AXIS command to draw plot axes through the origin. Be sure to save the 3D transformation matrix created by the surface, so you can place the new axes correctly.

Here is an example:

```
    ; Create some data.

  data = DIST(40,40)
  x = FINDGEN(40) - 20.0
  y = FINDGEN(40) - 20.0

    ; Draw the surface without axes.
    ; Save the 3D transformation matrix.

  SURFACE, data, x, y, XSTYLE=4, YSTYLE=4, ZSTYLE=4, /SAVE

    ; Draw the new axes through the origin.

  AXIS, /XAXIS, 0, 0, 0, /T3D
  AXIS, /YAXIS, 0, 0, 0, /T3D
  AXIS, /ZAXIS, 0, 0, 0, /T3D
```

This will draw the axes on top of the surface, which may not be what you want. You could try setting up the transformation matrix first, drawing the axes, then drawing the surface. Something like this:

```
  SURFACE, data, x, y, XSTYLE=4, YSTYLE=4, ZSTYLE=4, /SAVE , /NODATA
  AXIS, /XAXIS, 0, 0, 0, /T3D
  AXIS, /YAXIS, 0, 0, 0, /T3D
```

```
AXIS, /ZAXIS, 0, 0, 0, /T3D
SURFACE, data, x, y, XSTYLE=4, YSTYLE=4, ZSTYLE=4, /NOERASE
```

If this still didn't give satisfactory results, you could try it in the Z-buffer, where you are sure to get satisfactory hidden line removal.

Hope this is what you had in mind.

Yours,

David

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