
Subject: tall SURFACE plots don't work?

Posted by [rmw092001](#) on Tue, 16 Apr 2002 07:42:29 GMT

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Hello,

I need to make a 3-d SURFACE type plot, with the z axis twice the length of the x and y axes (sort of skyscraper shaped). This ought to be extremely simple??? -

Ordinary surface plot, with x,y,z axes the same length:

```
surface,dist(50),position=[.2,.2,.8,.8,.2,.8]
```

Surface plot with a 'squashed' z axis:

```
surface,dist(50),position=[.2,.2,.8,.8,.2,.4]
```

Surface plot with a 'stretched' z axis:

```
surface,dist(50),position=[.4,.4,.6,.6,.1,.9]
```

The 'squashed' z axis works fine, but IDL doesn't allow the last example? - or maybe I haven't understood how POSITION keyword works in 3 dimensions???

Thanks for any help,

RW

IDL5.5 Solaris

Subject: Re: tall SURFACE plots don't work?

Posted by [David Fanning](#) on Tue, 16 Apr 2002 14:56:09 GMT

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RichardW (rmw092001@yahoo.com) writes:

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> 3 dimensions???
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This problem is complicated by the fact that the IDL Surface command is not a true 3D representation. It's more of a 2.5D representation, in that it doesn't allow for independent rotation of the three orthogonal axes. In fact, the Z axis must always be vertical in the plot. I think this is what throws the positioning in the Z direction totally out of whack.

This is quite easily done, however, in object graphics. So, this morning, I hacked up my FSC_Surface program to accept a POSITION keyword to do what you want to do. I changed the order of the coordinates, however, to more easily accommodate either a 2, 4, or 6-elements vector of positions. The order is like this:

```
Position = [x0, x1, y0, y1, z0, z1]
```

So, to get your stretched plot, you would type this:

```
IDL> FSC_Surface, dist(50), Position=[.4, .6, .4, .6, .1, .9]
```

You can download FSC_Surface here:

http://www.dfanning.com/programs/fsc_surface.pro

You will need a couple of other programs from the Coyote Library as well. Read the documentation header to find out which ones.

By the way, while I was hacking around, I decided to add the ability to zoom into and out of the surface plot. You can accomplish this with the RIGHT and MIDDLE buttons, respectively.

Cheers,

David

--

David W. Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: <http://www.dfanning.com/>
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: tall SURFACE plots don't work?
Posted by [rmw092001](#) on Thu, 18 Apr 2002 03:34:45 GMT
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Hello,
Thanks for the replies. So is there really no method, in direct graphics, to force z-axis length to be larger than x,y-axis lengths? Complex or trial-and-error methods using t3d, xzech / yzech / xzech, SCALE commands, z-graphics buffer etc are OK. :-)

Maybe the simplest method could be: set zstyle=4 then redraw a larger z axis using PLOTS and XYOUTS (no hidden line removal needed in this case). There must be neater method though???

Thanks for any info,

RW

David Fanning <david@dfanning.com> wrote in message
news:<MPG.1725e973691e54c698988d@news.frii.com>...

> RichardW (rmw092001@yahoo.com) writes:

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> Cheers,
>
> David

Subject: Re: tall SURFACE plots don't work?
Posted by [David Fanning](#) on Thu, 18 Apr 2002 04:01:15 GMT
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RichardW (rmw092001@yahoo.com) writes:

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> SCALE commands, z-graphics buffer etc are OK. :-)

Uh, you didn't *like* FSC_Surface!? Weird. :-)

Cheers,

David

--

David W. Fanning, Ph.D.

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