
Subject: Re: Problem with axis scaling and position when plotting 3D data

Posted by [David Fanning](#) on Fri, 07 Sep 2012 12:55:39 GMT

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rafdedier@gmail.com writes:

```
>
> Hi!
>
> I am having a problem with the axis scaling and position using the AXIS and PLOTS procedure
for plotting data in three dimensions.
>
> I have written a test program that demonstrates the problem that is occurring:
>
> PRO TESTPLOT3D
>
> ; Create the random data.
>
> xdata = [0,2,2,0,0,2,2,0,2,0]
> ydata = [0,0,1,1,0,0,1,1,0.5,0.5]
> zdata = [0,0,0,0,2,2,2,2,3,3]
>
> xrange = [0, 3]
> yrange = [0, 1]
> zrange = [0, 3]
> anglex = 30
> anglez = 30
>
> WINDOW, XSIZE = 800, YSIZE = 800
>
> ; Set up the transformation matrix
>
> scale3, xrange = xrange, yrange = yrange, zrange = zrange, $
>   ax = anglex, az = anglez
>
> ; Plot the data using plots
> plots, xdata, ydata, zdata, /t3d, psym = 6, color = 255, symsize = 5
>
> axis, xax = 0, /t3d, /data, xrange = xrange, CHARSIZE = 4, xtitle = 'X'
> axis, yax = 0, /t3d, /data, yrange = yrange, CHARSIZE = 4, ytitle = 'Y'
> axis, zax = 2, /t3d, /data, zrange = zrange, CHARSIZE = 4, ztitle = 'Z'
>
>
> END
>
> The file creates a set of x,y,z-datapoints and plots them in three dimensions using the SCALE3-
and PLOTS-procedures. I want to add axes (using AXIS) onto the plot, but for some reason, the
scaling and the position of the axes is incorrect for the x- and y-axis (and not for the z-axis), as the
```

axes do not fully surround the datapoints. Some datapoints lie outside the axes??

>

>

> Can you see the problem that is occurring?

I see the axes all piled up in a heap at the very bottom of window, with the data points scattered everywhere. I have to admit, I don't immediately understand why.

I also have to admit I've never used Scale3 for this purpose. I would have set the axes up and drawn the data like this:

```
; Set the axes up.  
surface, dist(20), xrange=xrange, yrange=yrange, zrange=zrange, $  
  charsize=4, xtitle='X', ytitle='Y', ztitle='Z', /NoData, /Save, $  
  ax=anglex, az=anglez
```

```
; Plot the data using plots  
plots, xdata, ydata, zdata, /t3d, psym = 6, color = 255, symsize = 5
```

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Problem with axis scaling and position when plotting 3D data

Posted by [rafdedier](#) on Fri, 07 Sep 2012 15:15:18 GMT

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Hi David,

thanks for the helpful information!

It works using SURFACE, but then I'm not able to create additional axes on the plot for example to create a box-like axes-structure, or can I? Using the AXIS procedure, the axes have the same problem as mentioned before, even with the SURFACE procedure.

Thanks!

Raf

Subject: Re: Problem with axis scaling and position when plotting 3D data
Posted by [David Fanning](#) on Fri, 07 Sep 2012 15:42:57 GMT
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rafdedier@gmail.com writes:

> It works using SURFACE, but then I'm not able to create additional axes on the plot for example to create a box-like axes-structure, or can I? Using the AXIS procedure, the axes have the same problem as mentioned before, even with the SURFACE procedure.

Set the SAVE keyword on the Surface command before you try to draw the AXES. Otherwise the T3D matrix used with the Surface command gets erased.

Cheers,

David

--

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