
Subject: Re: 3D plot with correct aspect ratio
Posted by [David Fanning](#) on Thu, 26 Sep 2002 15:49:20 GMT
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Kristian =?iso-8859-1?Q?Kj=E6r?= (Kristian.Kjaer@Risoe.DK) writes:

> I set up a 3D coordinate system and a projection with
>
>
> range=3D[-7.,7] & az=3D40 & ax=3D35 ;, say
> surface,dist(4),/nodata,/save,xran=3Drange,yran=3Drange,zran =3Drange,\$
> ax=3Dax, az=3Daz, \$
> xstyle=3D1+4,ystyle=3D1+4,zstyle=3D1+4
>
>
> and then I plot in it with plotS.
> The x, y and z axes are equivalent and in the same units, =
>
> (say, meters) so I want the resulting postscript to be a =
>
> true projection (with a known scale factor) of this 3D field.
> How do I achieve that?

I don't know the answer to this, exactly, without doing some research, but I *do* know the answer is NOT to pursue this any further with direct graphics. Direct graphics uses as 2.5D graphic representation (you notice the Z axis is always vertical no matter what rotations you do). I think the only way to make this happen is to use a true 3D graphics system, which in IDL exists only in the object graphics system.

Cheers,

David

--

David W. Fanning, Ph.D.
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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: 3D plot with correct aspect ratio
Posted by [rmw092001](#) on Fri, 27 Sep 2002 01:55:19 GMT
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David Fanning <david@dfanning.com> wrote in message

```

news:<MPG.17fcda6be56e20b99899c6@news.frii.com>...
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> Cheers,
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> David

```

3D postscript plots aren't really quantitative - you can't measure stuff at some "depth" in the plot, like you can measure stuff on a 2D plot. I'd just use trial and error, adjusting POSITION, RANGE values to stretch axes until the 3D postscript looks "in proportion". IDL takes care of plotting correctly in whatever 3D axis system you choose.

Object graphics is great for true 3D, interactive, animated visuals (see the examples in IDL demos), and it usually gets recommended by the best programmers in the group :-). It's also a selling point of IDL over PV-WAVE.

However, for making good 3D postscript plots on paper - no animations, widgets, interactivity wanted - direct graphics will do almost everything...

RW

Subject: Re: 3D plot with correct aspect ratio
Posted by [David Fanning](#) on Fri, 27 Sep 2002 02:21:30 GMT
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RichardW (rmw092001@yahoo.com) writes:

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> widgets, interactivity wanted - direct graphics will do almost
> everything...

Well, almost everything except rotate freely in 3D space.
But, if you can live with that... :-)

Cheers,

David

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Subject: Re: 3D plot with correct aspect ratio
Posted by [Kristian Kjaer](#) on Fri, 27 Sep 2002 08:13:57 GMT
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Thanks for the comments.

In this case I don't mind that the z axis will always be vertical.
What I do want is that, for the chosen viewing angle (ax,az), the
postscript will be (apart from a - preferably known - scale factor) a
correct projection parallel to the line (ax,az) on a plane orthogonal to
the line (ax,az). Maybe I have to work out the transformation
(projection) myself, and use IDL 2D DG to plot it ...

- Kristian

David Fanning wrote:

> Well, almost everything except rotate freely in 3D space.
> But, if you can live with that... :-)

> RichardW (rmw092001@yahoo.com) writes:
>> However, for making good 3D postscript plots on paper - no animations,
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Kristian Kjær wrote:

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> (say, meters) so I want the resulting postscript to be a
> true projection (with a known scale factor) of this 3D field.
> How do I achieve that?
>
> Thanks for any pointers,
> Kristian Kjær, Risø National Laboratory, Denmark
