Subject: Re: Multiple Postscript Shaded Surface Plots
Posted by davidf on Mon, 11 Nov 1996 08:00:00 GMT
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Walid <atia@wam.umd.edu> writes:

> I've been having a bit of trouble getting multiple shaded surface plots
> on a page. I tried using the !P.MULTI variable, but then the shaded
> surface plots come out warped (they seem to be elongated in the
> horizontal direction). Is there any way to draw multiple shaded surface
> plots on a page using the postscript device while maintaining the
> correct aspect ratio?

The problem here is probably that your display window and the PostScript "window" don't have the same aspect ratio. Hence, your PostScript output doesn't look like the output on your display.

Everyone knows how to create a display window: use the WINDOW command or just execute a graphics display command. But I don't think everyone knows that you use the DEVICE procedure in PostScript to set up the PostScript "display window". That is, in fact, what you are doing when you execute commands like this:

```
IDL> SET_PLOT, 'PS'
IDL> DEVICE, XSIZE=5, YSIZE=5, /INCHES
```

Once your "display window" is set up, you just issue the same graphics commands you would normally, and IDL uses pretty much the same rules it normally uses to fill the window up. That's why things like !P.MULTI and the POSITION keyword work so well when you are trying to write IDL graphics procedures that work on the regular display and in PostScript without a lot of fooling around.

The default value for graphics windows on the display is something like 640-by-512 pixels (this varies from machine to machine). The default value for the PostScript graphics window is 7-by-5 inches. You can see this by typing:

```
IDL> SET_PLOT, 'PS'
IDL> HELP, /DEVICE
```

What you want to do is be sure your PostScript window has the same aspect ratio as your display window. So

I would do something like this.

Suppose you are plotting in portrait mode in PostScript
and supposethe X size of your display window is always
larger than or equal to the Y size. Then you can get the
aspect ratio of your current display window by typing:

```
IDL> aspectRatio = FLOAT(!D. X_VSIZE)/!D.Y_VSIZE
```

Now, make your PostScript page the same. Type:

```
IDL> SET_PLOT, 'PS'
IDL> DEVICE, XSIZE=7, YSIZE=7/aspectRatio, /INCHES, $
IDL> XOFFSET=0.75, YOFFSET=(11 - (7/aspectRatio))/2.0
```

Now when you do your shaded surface plots, they should
look just like what you see on your display.

I've been fooling around with IDL since 1988 and it was
only a couple of weeks ago that I think I finally came to
terms with PostScript output. I had some nagging
problems with a colorbar procedure I published on this
newsgroup. I couldn't get the colorbar to appear *always*
the same on my display and in a PostScript file. Two
weeks ago I finally figured out how to do it. It was like
an epiphany!

I am pretty sure now that I can get nearly WYSIWYG output
from IDL (fonts still cause me a few problems). I am
writing my discoveries up in what I think of as the
Definitive Guide to IDL PostScript Output. (Like many
folks, the epiphany has gone to my head and made me
dizzy!) It will be part of Coyote's IDL Programming
Newsletter, an IDL programming tip sheet I am trying
to publish in my spare time. Send me an e-mail if you
would like to know more about it.

Yours,

David

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* Sometimes I go about pitying myself, and all along my

* soul is being blown by great winds across the sky.
* -- Ojibway saying
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