Subject: Re: Line thickness & Z-buffer
Posted by davidf on Wed, 21 Jul 1999 07:00:00 GMT
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David Fanning (davidf@dfanning.com) writes:

> There has always been something weird about the Z-buffer.

By the way, notice that the test code I sent generates
error messages when executed in the Z-buffer:

```
IDL> test
% Program caused arithmetic error: Floating underflow
% Program caused arithmetic error: Floating illegal operand
```

I think this is also a manifestation of the underlying
resolution problem.

David

--
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Subject: Re: Line thickness & Z-buffer
Posted by davidf on Wed, 21 Jul 1999 07:00:00 GMT
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Simon Hall (shall@atm.ch.cam.ac.uk) writes:

> I draw some lines of thickness 2 (using plot) directly to a window and
> all is well, I get lines of thickness 2. However, I need to produce some
> 3000+ images for an animated sequence and rather than plot to a window
> I'm plotting to the z-buffer, reading that image with tvrd(), and
> writing a gif image. When I do so I get a bunch of lines of varying
> thicknesses. Horizontal and vertial lines seem fine, diagonal ones are
> noticably thinner.
>
> Can someone tell me how to get lines of uniform thickness (without
> plotting each segment separately) in a z-buffer-generated image???
>
> Using IDL 5.2 on NT4. I can provide an example.

There has always been something weird about the Z-buffer.

For example, it uses a different character size than normal, so plot margins are slightly different, etc. I don't know if there is something inherent in the resolution of the device, or what, but I think this is a manifestation of the same underlying problem.

In fooling around with this, though, I noticed that a thickness of 2 is just about the *worst* thickness you can use! Here is the code I used to play around. I found a thickness of 2.75 gave reasonable results. You may have to find something you can live with.

An alternative, possibly, would be to draw this into a pixmap rather than into the Z-buffer.

Cheers,

David

```
PRO test
thickness = 2.75
window, xs=400, ys=400
data = loaddata(1)
plot, data, /nodata
Oplot, data, thick=thickness
Oplot, [0,101],[0,20], thick=thickness
plots, [0,100], [10,10], thick=thickness
thisDevice = !D.Name
set_plot, 'z'
device, set_resolution=[400,400]
plot, data, /nodata
Oplot, data, thick=thickness
Oplot, [0,101],[0,20], thick=thickness
plots, [0,100], [10,10], thick=thickness
snap = tvrd()
set_plot, thisDevice
window, 1, xs=400, ys=400
tv, snap
END
```

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