Subject: Re: IDLgrPolygon image map scaling
Posted by Karl Schultz on Mon, 28 Feb 2005 17:50:09 GMT
View Forum Message <> Reply to Message

On Fri, 25 Feb 2005 11:00:32 -0800, b_gom wrote:

> I'm having a bit of trouble with texture maps on a simple rectangular
> IDLgrPolygon. I am trying to place a bitmap inside the axes of a custom
> plot object. I create an IDLgrPolygon with the proper dimensions, and
> add it to the model with my plot. I'm using a texture map so that I can
> scale the plot dynamically, and so that it behaves itself in terms of
> plotting order. The trouble is that IDL doesn't scale the image
> uniformly. See:
> http://people.uleth.ca/~brad.gom/texture_map.png
> The pattern should be a checkerboard of alternating pixels. Is there
> something I am missing? This effect occurs no matter what image
> dimensions I use, dimensions of the polygon in data units, or
> interpolation.

This is *probably* caused by your texture image not having dimensions that are a power of 2. OpenGL has a restriction where texture maps have to have dimensions that are a power of 2. If you use a texture map that does not meet this requirement, IDL resamples the image upwards to the next power of 2 dimensions. This resampling step is probably introducing the aliasing artifacts.

The way around this is to place your texture data into a larger image that has dimensions the next power of 2 higher than your texture data, leaving unused areas in the image. Then use texture coordinates to use only the defined parts of the image.

For example, if your texture data is 500x750, make an image array that is 512x1024 and use it to create your IDLgrImage. Fill the image array so that your texture data fills up the [0:499, 0:749] subset of the array.
Use this image as the texture map and set the texture coords corresponding to the rectangle to

[[0,0], [500./512, 0], [500./512, 750./1024], [0, 750./1024]].

Note that IDLgrSurface does this sort of thing for you automatically, so I suppose that you could use the surface object instead.

One of my tasks for the next release of IDL is to make the polygon object do this sort of thing automatically as well. But for now, you'll have to do something along the lines I've described here.

Karl