Subject: Re: Log IDLgrAxis

Posted by david[2] on Thu, 09 Aug 2001 19:56:37 GMT

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## Pavel A. Romashkin writes:

- > I am setting /log before any Range or Coord\_conv are specified at the
- > time of creating the new axis. All normalization happens afterwards and
- > is the same as for linear axis.

Now I'm remembering something, let me look...

Aha, here is an article I wrote about this some time ago:

Subject: Re: IDLgrAxis object with /LOG keyword From: davidf@dfanning.com (David Fanning) Date: Thu. 18 Jan 2001 12:14:49 -0700

Marc Schellens (m schellens@hotmail.com) writes:

- > I want to create a loarithmic plot with object graphics.
- > So I thought I just set the /LOG keyword to the IDLgrAxis object and
- > scale the data accordingly.
- > But with the /LOG keyword the Axis is drawn on a different location.
- > Does anybody have an example how to do it right?

Humm. This gave me some trouble too. Then I remembered that CRANGE returns the log of the range when axes are set to log type. So, to get things to work, I had to scale the axis (Z-Axis in this case) differently from the data in the 7 direction.

Here is how I modified my FSC\_SURFACE program to get it to work with a log Z axis. (I set the LOG keyword on the IDLgrAxis command for the Z axis.)

- The axes may not use exact axis scaling, so the ranges may
- ; have changed from what they were originally set to. Get
- ; and update the range variables.

xAxis->GetProperty, CRange=xrange yAxis->GetProperty, CRange=yrange zAxis->GetProperty, CRange=zrange zrange\_surf = [10^zrange[0], 10^zrange[1]]

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; Set scaling parameters for the surface and axes so that everything
  ; is scaled into the range -0.5 to 0.5. We do this so that when the
  ; surface is rotated we don't have to worry about translations. In
  ; other words, the rotations occur about the point (0,0,0).
xs = Normalize(xrange, Position=[-0.5,0.5])
ys = Normalize(yrange, Position=[-0.5,0.5])
zs = Normalize(zrange, Position=[-0.5,0.5])
zsurf = Normalize(zrange surf, Position=[-0.5,0.5])
  ; Scale the axes and place them in the coordinate space.
  ; Note that not all values in the Location keyword are
  ; used. (I've put really large values into the positions
  ; that are not being used to demonstate this.) For
  ; example, with the X axis only the Y and Z locations are used.
xAxis->SetProperty, Location=[9999.0, -0.5, -0.5], XCoord Conv=xs
vAxis->SetProperty, Location=[-0.5, 9999.0, -0.5], YCoord_Conv=ys
zAxis->SetProperty, Location=[-0.5, 0.5, 9999.0], ZCoord Conv=zs
  ; Scale the surface.
thisSurface->SetProperty, XCoord_Conv=xs, YCoord_Conv=ys, $
 ZCoord Conv=zsurf
I put this example program here if you want to try it out:
  ftp://ftp.dfanning.com/oub/outgoing/misc/fsc_surface_log.pro
I ran it like this:
 IDL> .Compile fsc_surface_log
 IDL> fsc_surface, dist(50)*40 > 1
Cheers,
David
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Coyote's Guide to IDL Programming: http://www.dfanning.com/ Toll-Free IDL Book Orders: 1-888-461-0155