Subject: Re: surface plotting
Posted by Norbert Hahn on Tue, 13 Jan 2004 15:47:23 GMT
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"Muks Raju" <muks@ieee.org> wrote:

> Hello
> Im stuck with a problem.. i have 3 vectors containing 5000 values
> of X,Y and Z coordinates of points on a sphere.

What kind of projection do you think of? You may select one of the
map projections or picture the sphere as a ball using a light source.

> Now I also have data which
> signifies the density at each of those points. How do i plot this data on
> a sphere with different colors for diff densities and interpolate the
> values to get a smooth color distribution.

You may think of your sphere as of the earth without continents and
oceans and project the colors that represent the diff densities on
that "earth". Is that a way you may want to go?

Map projections are standard transformations in IDL, so nothing to
worry about.

Norbert

Subject: Re: surface plotting
Posted by Muks Raju on Tue, 13 Jan 2004 20:41:04 GMT
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Hello
Yes you are right. I would like to picture the sphere as the earth
and then project the colors which rep the diff densities on that earth. I
guess I understand the concept but my data is in such a wierd form.
I have a vector X = [X1,X2,X3.....X4880] and Y = [y1,y2,..y4880] and
Z=[Z1,z2..z4880] and data=[d1,d2...d4880].. with the data in this format
how do i do the said transformation? Any help would be much appreciated.

Muks

On
Tue, 13 Jan 2004, Norbert Hahn wrote:

> "Muks Raju" <muks@ieee.org> wrote:

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>
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> worry about.
>
> Norbert
>
>

--
Que Sera! Sera!..What will be, will be!
 -- ----------------
Mukunda P Raju
 #### ####   Graduate Student,
 #########   Systems Engineering, EECS
 ### # ###   University of Michigan, Ann Arbor
United States of America
 -- ----------------

Subject: Re: surface plotting
Posted by Norbert Hahn on Wed, 14 Jan 2004 17:21:06 GMT
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Muks Raju <mpraju@harvest.eecs.umich.edu> wrote:

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> guess I understand the concept but my data is in such a wierd form.
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> Z=[Z1,z2..z4880] and data=[d1,d2...d4880].. with the data in this format
> how do i do the said transformation? Any help would be much appreciated.

The transformation requires more than one step. CV_COORD will convert your coordinates contained in x,y,z to longitude, latitude (and radius).

sph_coord = CV_COORD (FROM_RECT=[x,y,z], /TO_SPHERE)

The longitude is contained in sph_coord (0,*), the latitude is in sph_coord(1,*). The radius will not be used for map projections. Ideally sph_coord(2,*) should contain the same values.

Next use MAP_SET to establish the map projection you want to use. Calling MAP_SET without any parameters will establish a default projection. After that IDL assumes all coordinates following are longitude, latitude and data.

CONTOUR will plot your data. The keyword IRREGULAR should be set. You may need to read the online help for each routine you call.

Norbert
