Subject: Polar to spherical coordinates
Posted by pford on Mon, 24 Apr 2000 07:00:00 GMT
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Greetings:

I have a problem that is screaming at me that there must be a simpler solution in IDL than I have devised. I am attempting to relearn IDL, after months of being away from it, and the math after decades from it and I have not found a built-in procedure that does the trick.

The problem in its, simplest form, is that I want to take a 2-D polar plot and transform it into a 3-D hemisphere and vice versa. More accurately, a polar plot to a 3-D hemi-ellipsoid with varying axes and thickness, i.e. more than just a surface plot. The manner that I am thinking how to do this is to sample the polar plot along its radius and map it to the hemisphere(with for loops). It seems to me that this is likely common in IDL to map from polar to spherical coordinates and to warp shapes. Since I don't wish to reinvent the wheel, and not a good wheel at that, I would appreciate being pointed in the right direction.

Thank you,

Patrick Ford, MD
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Subject: Re: Polar to spherical coordinates
Posted by Patrick V. Ford on Thu, 27 Apr 2000 07:00:00 GMT
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Oh, if what I wanted was that easy. What I would like is more akin to the MAP_IMAGE function. I want to convert a 2D array "image" into a 3D array "image" such as a polar projection to a sphere (3D array) and back again. Using the WHERE function and the CV-COORD function I have partially done what I need to do. It looks like I will need to create a look-up-table (LUT) to translate the coordinates.

It still seems like there must be a trivial solution other than to create a LUT and its inverse. I vaguely recall from some math-sci course I took in college 20 or so years ago that we used transform to "transform" from one domain to another. This is what I am looking for, a function that will do this transform. If I make one, I will post it so that it will be decreased in size by 80% and speed by 300% as usual since I still think in FORTRAN or C and not IDL.

Thanks

In article <MPG.136e22dd5bfafe0c989aeb@news.frii.com>, David Fanning
<davidf@dfanning.com> wrote:

> Patrick V. Ford (pford@bcm.tmc.edu) writes:
>
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>
> I'd start by trying to use CV_COORD to map from polar to
> spherical coordinates.
>
> Cheers,
>
> David
