Subject: Re: IDL:Spherical Polar Data Question
Posted by eff on Mon, 04 Apr 1994 18:46:18 GMT
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|> Hello,
|>
|> I've been working on IDL and was wondering if anyone has
|> any ideas on the best way to enter a spherical polar data set into
|> an array. That is, given R,THETA, & PHI, how best to input the
|> irregulary gridded data set and grid it?
|> All suggestions are welcome.
|>
|> D-
|> daustin@sugar.neosoft.com

It depends on where on the sphere you are primarily interested. If
you are going to be doing interpolations around a pole, then you would be
well advised to use a local stereographic coordinate system there. (e.g.
use coordinates (x= 2acos(phi)cos(theta)/(1+sin(phi), y=
2acos(phi)sin(theta)/(1+sin(phi), r=r). See Haltiner and Williams, "Numerical
Prediction and Dynamic Meteorology" for more details. Away from the pole, you
can get away with a a rectilinear grid in r, phi, theta. These suggestion all
rest on the assumption that the variation in r are much smaller than the average
value of r, so that you can ignore sphericity of surfaces of constant r. As for
gridding, be warned that if you are planning to take derivatives of your gridded
data, the triangulation algorithm provided with IDL can give really screwy
results.