Subject: Re: Interpolation on a sphere
Posted by todd on Fri, 07 Oct 1994 05:02:30 GMT

Dan,

If you just want to see your data wrapped onto a sphere you can
simply interpolate your data into a 180X360 array using whatever
interpolation that you normally use, generate a
spherical polygon (PV~Wave has Poly_Sphere and I've seen an IDL
routine called Mesh_Obj by Dan Carr which can do the same thing)
with 180 polygons around equator and 360 polygons around the
meridian then use polyshade with the Shades=Bytscl(your_array)
keyword.

You'll have your data on sphere.

Todd

Subject: Re: Interpolation on a sphere
Posted by dan on Fri, 07 Oct 1994 15:29:35 GMT

In article <372kp6$54d@news.mic.ucla.edu>, todd@artemis.ess.ucla.edu (Todd Ratcliff) writes:
|> Dan,
|>
|> If you just want to see your data wrapped onto a sphere you can
|> simply interpolate your data into a 180X360 array using whatever
|> interpolation that you normally use, generate a

Using this method, a data value at longitude=0 latitude=89 will have
very little influence on the interpolated value at longitude=180 latitude=89,
but in reality, these points are right next to each other. I'm not so interested
in viewing my data as I am in doing a good interpolation on the surface of
a sphere.

|> spherical polygon (PV~Wave has Poly_Sphere and I've seen an IDL
|> routine called Mesh_Obj by Dan Carr which can do the same thing)
|> with 180 polygons around equator and 360 polygons around the
|> meridian then use polyshade with the Shades=Bytscl(your_array)
|> keyword.
|>
|> You'll have your data on sphere.
|>
|>
|> Todd

--
 ** ***
** Dan Bergmann   dbergmann@llnl.gov **
** Global Climate Research   fax   (510) 422-5844 **
** Lawrence Livermore National Lab   human (510) 423-6765 **

Subject: Re: Interpolation on a sphere
Posted by todd on Fri, 07 Oct 1994 23:54:48 GMT
View Forum Message <> Reply to Message

In article <373pgv$gv@danberg.llnl.gov>, dan@danberg.llnl.gov (Dan Bergmann) writes:
|>
|> In article <372kp6$54d@news.mic.ucla.edu>, todd@artemis.ess.ucla.edu (Todd Ratcliff)
writes:
|> |> Dan,
|> |>
|> |> If you just want to see your data wrapped onto a sphere you can
|> |> simply interpolate your data into a 180X360 array using whatever
|> |> interpolation that you normally use, generate a
|>
|> Using this method, a data value at longitude=0 latitude=89 will have
|> very little influence on the interpolated value at longitude=180 latitude=89,
|> but in reality, these points are right next to each other. I'm not so interested
|> in viewing my data as I am in doing a good interpolation on the surface of
|> a sphere.

Ah, good point! In that case if you find a good spherical interpolator, please
let me know.

Todd

Subject: Re: Interpolation on a sphere
Posted by cooper on Sun, 09 Oct 1994 12:53:48 GMT
View Forum Message <> Reply to Message

> In article <373pgv$gv@danberg.llnl.gov>, dan@danberg.llnl.gov (Dan Bergmann) writes:
> |>
> |> Using [simple interpolation], a data value at longitude=0 latitude=89
> |> will have very little influence on the interpolated value at
> |> longitude=180 latitude=89,
> |> but in reality, these points are right next to each other.

How about copying data near longitudes 0 and 360 (or 180 E and 180 W, of course) to "ghost" zones _above_ 360 and _below_ 0? That is, map longitude = 0-2 (or whatever) onto longitude 360-362, and 358-360 onto (-2)-0. Then interpolate as usual; then strip off the ghost zones before using the result.

It isn't a pretty solution, but I thought it might work...

Glenn Cooper