
Subject: Re: Random problem with Delaunay triangulation
Posted by [Haje Korth](#) on Tue, 11 Sep 2007 18:59:17 GMT
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Bill,
you just hit a nerve with me. I thought I was the only one having those trouble. I would love to find out where this error comes from and how to prevent it. The problem drove me to going external and using ssrfpack and stripack from netlib to do spherical interpolation. This method is not fool proof either but at least this way I have the source code and can find out why an error occurs and, more important, I can determine what it actually means.

Anyway, this response won't help you much in solving your problem but supports your case for better documentation of the interpolation routines (I previously suggested to ITTVIS to write a tutorial on the subject) or, at the least, more meaningful error messages. (The folks at ITTVIS do read this newsgroup.)

Good luck,
Haje

"Bill Gallery" <wgallery@aer.com> wrote in message
news:1189535983.796705.67590@o80g2000hse.googlegroups.com...
> I am interpolating satellite data (lat, lon, temperature) from a
> irregular grid to a regular lat, lon grid using:
>
> pro get_gridded_temp_image,
> .
> .
> .
> grid_lat=findgen(31)*2.0+30.0 ;30 to 90 deg @2 deg
> grid_lon=findgen(181)*2.0 ;0 to 360 deg @2 deg
> qhull, x, y, tri, /delaunay, sphere = s
> temp_grid = griddata(x, y, z, /sphere, /deg, \$
> /grid, xout = grid_lon, yout = grid_lat, \$
> method = 'NaturalNeighbor', \$
> triangles=tri, \$
> missing = !values.f_nan)
>
> where x,y are longitude, latitude, and z is temperature (patterned
> after Example 5 in the IDL help for griddata.pro)
>
> Usually this procedure works fine, over thousands of different cases.
> However, today I tried it and got the error message:
>
> GRIDDATA: Triangle 652 not in counterclockwise order.

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> Execution halted at: GET_GRIDDED_TEMP_IMAGE 184
>
> The ranges of the input variables are (mve is a routine that prints
> the stats on a variable):
>
> IDL> mve,x
> Variable type      mean    std dev    minimum
> maximum    n_elements NaN or I
>      Float      178.55    102.79    0.070000
> 358.05 (529) = 529      0
> IDL> mve,y
> Variable type      mean    std dev    minimum
> maximum    n_elements NaN or I
>      Float      54.660    19.100    20.340
> 82.930 (529) = 529      0
> IDL> mve,z
> Variable type      mean    std dev    minimum
> maximum    n_elements NaN or I
>      Float      214.63    9.7416    192.56
> 233.31 (529) = 529      0
> IDL> mve, tri
> Variable type      mean    std dev    minimum
> maximum    n_elements NaN or Inf
> Longword integer    249.43    149.12    0.00000
> 528.00 (3,966) = 2898      0
>
>
> Note: I tried the routine sph_scatt which is also advertised to regrid
> on a sphere. However, the interpolated values are way off scale:
>
> IDL> r=sph_scatt(x,y,z,bounds=[0,30.0,360,90],gs=[2,2],bout=bout)
> IDL> mve,r
> Variable type      mean    std dev    minimum
> maximum    n_elements NaN or Inf
>      Double float    208.09    96.313    -480.31
> 869.93 (181,31) = 5611      0
>
>
> Any suggestions on how to trouble shoot, fix?
>
> Thanks,
>
> Bill Gallery
>

```
