Subject: Re: Random problem with Delaunay triangulation
Posted by Haje Korth on Tue, 11 Sep 2007 19:27:29 GMT
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Bill, here a practical tip: Have you tried to randomly reshuffle your input data? Does this make a difference? H.

"Haje Korth" <haje.korth@nospam.jhuapl.edu> wrote in message news:fc6oi5$ei3$1@aplnetnews.jhuapl.edu...
> 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.
>> 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_scat which is also advertised to regrid
>> on a sphere. However, the interpolated values are way off scale:
>>
>> IDL> r=sph_scat(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
>>
>
>