Subject: Re: Random problem with Delaunay triangulation - Correction
Posted by ben.bighair on Wed, 12 Sep 2007 20:04:26 GMT
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On Sep 12, 11:19 am, Bill Gallery <wgall...@aer.com> wrote:
> On Sep 12, 9:38 am, "ben.bighair" <ben.bigh...@gmail.com> wrote:
>
>
>
>> On Sep 12, 8:14 am, "Haje Korth" <haje.ko...@nospam.jhuapl.edu> wrote:
>
>>> Bill,
>>> what you describe seems to pretty much the story of my life with spherical
>>> interpolation in IDL. Basically, I can find after some playing around a fix
>>> for a particular data set only to find that the fix was not universal enough
>>> and the next interpolation with another data set would blow up again. There
>>> must be a certain set of underlying rules for the IDL spherical
>>> interpolation routines. If one would know them, the data set could be
>>> massaged appropriately to avoid the problem. My experience is though that
>>> this goes beyond the $64,000 question.So any enlightenment is appreciated
>>> here.
>
>>> Haje
>
>>> "Bill Gallery" <wgall...@aer.com> wrote in message
>
>>> news:1189547798.290652.299080@b32g2000prf.googlegroups.com.. .
>
>>>> On Sep 11, 5:15 pm, Bill Gallery <wgall...@aer.com> wrote:
>>>> > On Sep 11, 3:27 pm, "Haje Korth" <haje.ko...@nospam.jhuapl.edu> wrote:
>
>>>> > > Bill, here a practical tip: Have you tried to randomly reshuffle your
>>>> > > input
>>>> > > data? Does this make a difference? H.
>
>>>> > > "Haje Korth" <haje.ko...@nospam.jhuapl.edu> wrote in message
>
>>>> > >news:fc6oi5$ei3$1@aplnetnews.jhuapl.edu...
>
>>>> > > > Bill,
>>>> > > > you just hit a nerve with me. I thought I was the only one having
>>>> > > > those
>
>>>> > Haje,
>
>>>> > I did not try reshuffling the input data, but did find a fix.
>>>> > Originally, the input data had a minimum latitude of 30.0 deg N and
>>>> > the specified regular grid also had a minimum latitude of 30.0. When

>>>> > I expanded the input data to have a minimum latitude of 20 deg N, the
>>>> > error message went away. Apparently you need data outside the area of
>>>> > interest for the interpolation to be robust.
>
>>>> > Further experimentation showed that when the minimum latitude of the
>>>> > input data was 30. deg, the interpolated values at 30 deg for the
>>>> > cases that did not fail showed large excursions from expected values.
>>>> > This may be partially due to the nature of the input data, which is
>>>> > poorly sampled below ~40 deg N (temperature data from the SABER
>>>> > instrument on the TIMED satellite.)
>
>>>> > Does anyone has any experience with the relative merits of the
>>>> > following routines for interpolation on a sphere?
>
>>>> > 1. qhull and griddata
>
>>>> > 2. sph_scat.pro
>
>>>> > 3. triangulate and trigrid
>
>>>> > Bill
>
>>>> Correction, expanding the input data did not correct the problem: I
>>>> got the same message from a different case.
>
>>>> Puzzled
>
>>>> Bill Gallery
>
>> Hi,
>
>> I have not done much with spherical data and interpolation, but I
>> found the GRID_INPUT routine helpful when using plain-old-flat-earth
>> gridding. It might be worth running the data through that first.
>
>> Cheers,
>> Ben
>
> Brilliant!
>
> The data had duplicate points I wasn't aware of. grid_input eliminated
> them and solved the problem.
>
> Thanks,
> Bill

Aw, shucks.
