
Subject: Re: How to grid pixel level data where latitude and longitude are 2D arrays
Posted by [David Fanning](#) on Wed, 19 Jun 2013 20:30:56 GMT

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masterjedirobyn@gmail.com writes:

> I have been having a problem gridding a very large dataset which contains pixel level data into a gridded average. My data looks like this:

>

> Lat and Lon are float [409,13248], the variables I wish to interpolate are also [409,13248]. I wish to grid these into arrays of [360,180] (1 degree spacing). Lon and Lat are irregular.

>

> I have tried several methods of doing this. First, I looked at http://www.idlcoyote.com/code_tips/griddata.html and followed the process there, using qhull. Then, using the griddata command gave the following error: GRIDDATA: Value of Triangle index is out of allowed range. I then used triangulate instead of qhull and did not run into an error, but the result I got does not seem to be correct. Even if it was correct, the amount of time this calculation takes is huge; it runs overnight, and that's only on one file. I have many.

>

> Does anyone know a faster, more memory efficient way of gridding data when your latitude and longitude are irregular and in 2D? This calculation typically freezes my machine with IDL using over 100% of the CPU. Is it possible that there could be some trick using Value_Locate? (Although from what I read, value_locate only works when your lon/lats are monotonically increasing/decreasing)

Well, I have never known GridData NOT to take a lot of time! Although all night does seem a bit excessive. But, I have managed to get it to work, on occasion. Switching from Triangulate to QHull or visa versa rings some bells. Have you tried running Grid_Input on your data first? Have you used the Tolerance keyword to Triangulate? Have you read this article:

http://www.idlcoyote.com/code_tips/usegriddata.html

That is an awful lot of data points. I can see why there is some thrashing going on. Can you get this to work if you take some reasonably small number of random points from your data and worked with those? Maybe you are so oversampled, it won't make any difference. :-)

Cheers,

David

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David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thue. ("Perhaps thou speakest truth.")
