Subject: Griddata and Contour questions
Posted by julia.kamenetzky on Wed, 11 Jul 2007 15:09:30 GMT
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I'm somewhat new to IDL, and attempting to create contour plots of sets of astronomical data. We'd like to interpolate data points based on the known Gaussian beam size. It seems to me like the only routine in IDL to accomplish this would be the Kriging method of GRIDDATA using Gaussian covariance? I have a few questions about this...

1) In what units are parameters such as d and R (as specified in the help section on the variogram)? I am assuming that they are in units of spacing between adjacent grid points (ie, the distance from one to the next is equal to one), but please let me know if this is incorrect.

2) When I use this method, I receive an array that contains values way outside the range of the data. (My data is from about 20 to 200, and the returned array has values from about negative to positive 12,000!) I cannot get correct results, even with changing around my range value in the variogram, dimensions, or if I triangulate the data before.

Some examples of ones I've tried:

KRIGGRID2=GRIDDATA(158_ASCII.L,158_ASCII.B,158_ASCII.INTENSI TY, /
KRIGING, DIMENSION=[500,386], VARIOGRAM=[3,24,0,1])

KRIGGRID=GRIDDATA(158_ASCII.L,ASCII.B,158_ASCII.INTENSITY, /KRIGING,
TRIANGLES=TR, ANISOTROPY=[1,1], DIMENSION=[500,386],
VARIOGRAM=[3,24,0,1], SEARCH_ELLIPSE=20)

Any idea what I'm doing wrong, and why I'm getting values that are clearly not interpolations of the defined points? I am able to grid using other methods and get reasonable contours with this data, but I cannot seem to get this method to work.

3) Once I have this data gridded, how can I then display it on the original coordinate axes, rather than axes that are just numbered by indices of the gridded array?

It would be preferable to do this all using the iContour gridding wizard (as you can tell, I have little IDL command line experience), but as of yet I am not sure that any of the options in the wizard will interpolate the right way. If there is a suitable option, or one that is "close enough", I'd love to hear about it!

Thank you for your time.