
Subject: Re: 3d Interpolation

Posted by [there _is_hope](#) on Wed, 13 Apr 2016 12:50:47 GMT

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On Wednesday, April 13, 2016 at 8:40:11 AM UTC-4, there _is_hope wrote:

> Dear All IDL users,

>

> I am currently looking for the best way to interpolate an irregular 3-d data set to a regular 3-d grid.

>

> I start with a 2d array of density e.g. 50 x 100, where the first dimension represents the density as a function of energy and the second the density as a function of theta (4) and phi (25) field of view angles.

>

> I wish to interpolate the density data to a regular grid of energy, theta and phi of equal dimensions to that of the initial irregular set.

>

> The energy, theta and phi are all irregularly spaced, but can be converted to an equivalent x, y, z location by considering energy as some sort of radial distance. Due to ease of perform the interpolation the arrays of density, energy, theta, phi, x, y, z can be collapsed to a 1-d array.

>

> The question is there any idl function/procedure that can then perform a 3d interpolation on this data? If not I would very much appreciate any suggestions on how best to perform such an interpolation?

>

> Thank for your time and I look forward to hearing everyones thoughts.

> Regards.

Just in case anyone points me to the various IDL routines for 3d interpolation, such as grid3, please can you provide instructions on how to achieve the above properly.

For example in 1d it is straight forward, `int_data_1d = interpol(data_1d, x_1d, int_x_1d)` where you provide the abscissa values for the input and output.

However I do not immediately see how to achieve a similar result when using grid3 e.g.

Result = GRID3(X, Y, Z, F).

Thanks
