Subject: GRID3
Posted by Tim Hodges on Fri, 15 Sep 1995 07:00:00 GMT
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I'm having trouble with the GRID3 function. I have a series of data points in 3D space with associated values (X,Y,Z,F) just as GRID3 asks for. Hoever, when I try to execute the function, I get "Ill-defined matrix or all points are co-planar" as an error message. I don't know what an ill-defined matrix is. Any help (by e-mail) would be greatly appreciated.

Subject: Re: GRID3
Posted by David Fanning on Tue, 14 Dec 2010 16:59:59 GMT
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Fourier writes:

> Hello, I am trying to use the GRID3 routine for a set of volume
> emission rates for a given altitude, latitude, and longitude. The alt,
> lat, and lon data are initially in three 1D arrays so I converted them
> into three 3D arrays, matching in size to the volume emission rate 3D
> array. When I run the GRID3 rountine on the arrays the compiler
> returns the error message
>
> Ill-conditioned matrix or all nodes co-planar
>
> I am not really sure what is going on. I have tried increasing the
> value of DTOL, but this does not seem to help. I have compared the
> arrays I am using as input into GRID3 with another program that has a
> working example of GRID3 and things seem to match up. Does anyone know
> of a trick of getting GRID3 to work?

I think GRID3 is designed to work with "scattered nodes". I don't think it is going to like the sort of regularly gridded data it sounds like you are giving it. Do you have anything you are really trying to grid here, or are you just trying to get these arrays into Slicer?

If you really want to grid something, I would try giving your Grid locations a "shake" and adding a little bit of random noise to their positions.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: GRID3
Posted by penteado on Tue, 14 Dec 2010 17:07:32 GMT
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On Dec 14, 2:59 pm, David Fanning <n...@dfanning.com> wrote:
> I think GRID3 is designed to work with "scattered nodes".
> I don't think it is going to like the sort of regularly
> gridded data it sounds like you are giving it. Do you have
> anything you are really trying to grid here, or are you
> just trying to get these arrays into Slicer?
>
> If you really want to grid something, I would try giving
> your Grid locations a "shake" and adding a little bit of
> random noise to their positions.

That is what I was wondering. If the points are already in a regular
grid, why grid them?

Subject: Re: GRID3
Posted by Fourier on Tue, 14 Dec 2010 17:27:28 GMT
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On Dec 14, 12:07 pm, Paulo Penteado <pp.pente...@gmail.com> wrote:
> On Dec 14, 2:59 pm, David Fanning <n...@dfanning.com> wrote:
>
>> I think GRID3 is designed to work with "scattered nodes".
>> I don't think it is going to like the sort of regularly
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>> If you really want to grid something, I would try giving
>> your Grid locations a "shake" and adding a little bit of
>> random noise to their positions.
>
> That is what I was wondering. If the points are already in a regular
> grid, why grid them?

Thanks for the quick replies. As you can see I am relatively new to

using IDL.

What I am trying to do is interpolated the volume emission rates for a given line of sight through the volume emission rate grid. The line of sight has a set of three 1D arrays specifying the alt, lat, and lon along the line of sight for a given distance away from a satellite's detector. I was hoping to use these line of sight arrays as the (Gx,Gy,Gz) of the GRID3 routine. The desired output is the interpolated volume emission rates along the desired line of sight.

Would there be a better way of doing this interpolation? I will check into the SLICER routine. Again thanks for any help.
