Subject: Re: spatial interpolation
Posted by Mark Hadfield on Wed, 01 Oct 2003 22:09:35 GMT
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Hjalti Sig wrote:
> Has anyone interpolated values from one set of scattered points (say
> the terrain height of digitized contour lines from a map) to another
> set of scattered points (say those points that are to be used in a
> finite element model for groundwater flow). Note that this does not
> involve any type of grids, regular nor irregular.
> What would be tho most straightforward way to do this?

The GRIDDATA function (introduced in 5.5). The XOUT and YOUT arguments
can be used to specify any set of output points you want.

--
Mark Hadfield "Ka puwaha te tai nei, Hoea tatou"
m.hadfield@niwa.co.nz
National Institute for Water and Atmospheric Research (NIWA)

Subject: Re: spatial interpolation
Posted by hjalti on Fri, 03 Oct 2003 10:32:07 GMT
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Thank you so much. The description for this function in the reference
guide does not mention this - only regular grids. And the only
possible return value mentioned is a two dimensional array. This is
somewhat misleading.
Regards, Hjalti

Mark Hadfield <m.hadfield@niwa.co.nz> wrote in message
news:<blfjb1bgs1@newsreader.mailgate.org>...
> Hjalti Sig wrote:
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> can be used to specify any set of output points you want.

Subject: Re: spatial interpolation

Posted by Richard French on Fri, 03 Oct 2003 11:07:53 GMT
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On 10/3/03 6:32 AM, in article
e1330fff.0310030232.52e4cea4@posting.google.com, "Hjalti Sig"
<hjalti@vatnaskil.is> wrote:

> Thank you so much. The description for this function in the reference
> guide does not mention this - only regular grids. And the only
> possible return value mentioned is a two dimensional array. This is
> somewhat misleading.
> Regards, Hjalti
>
I've just looked this up in the IDL6.0 manual and the KEYWORDS XOUT and YOUT
(NOT the same as a returned value of a function) are definitely described,
albeit in the midst of about another 20 definitions for other keywords. So,
I don't find it misleading, but it does show that you need to read through
the documentation with great care to see the capabilities of some of the
more complex IDL procedures/functions such as AXIS.

I hope GRIDDATA does what you need.

Dick French

Subject: Re: spatial interpolation
Posted by Mark Hadfield on Sun, 05 Oct 2003 21:18:00 GMT
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Richard G. French wrote:
> On 10/3/03 6:32 AM, in article
> e1330fff.0310030232.52e4cea4@posting.google.com, "Hjalti Sig"
> <hjalti@vatnaskil.is> wrote:
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> I don't find it misleading, but it does show that you need to read through
> the documentation with great care to see the capabilities of some of the
> more complex IDL procedures/functions such as AXIS.

Great care and a grain or two of salt.

The opening sentence of the GRIDDATA documentation says:

> The GRIDDATA function interpolates scattered data values and
> locations sampled on a plane or a sphere to a regular grid.

This is true, but incomplete. As noted, GRIDDATA also does interpolation onto irregular grids and scattered data points.

And the "return value" section says

> The function result is a two-dimensional floating point array.

This is just plain wrong. It can also return 1-D output data.

A documentation bug report to RSI is warranted. Any volunteers? (They're tired of hearing from me.)

--
Mark Hadfield "Ka puwaha te tai nei, Hoea tatou"
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National Institute for Water and Atmospheric Research (NIWA)