Subject: Re: spatial interpolation
Posted by Mark Hadfield on Sat, 27 Sep 2003 23:13:22 GMT
View Forum Message <> Reply to Message

Isa Usman wrote:
> Hello All,
>
> I have a program which interpolates an irregularly gridded set of data
> points onto another irregular grid. I have tried as much as possible to make
> the calculations as fast as possible (using the dreaded reverse indices in
> Histogram) but i am at my wits end. It currently takes about two days to go
> through the whole data. Anybody got any suggestions on speed-up
> improvements? The code is shown below.

What do you mean by "irregularly gridded"? (Sorry, but I can't determine
this from your code.) Are your data points randomly scattered about, or
are they on some sort of deformed, stretched, or rotated Cartesian grid?
Or something else?

If you do have two grids (taking the word to mean a set of nodes with
some sort of geometric structure) then the key part of your regridding
is to determine where the nodes of the first grid are relative to the
nodes of the second. I have some routines to do this for 2D curvilinear
grids, one using triangular linear interpolation and the other using
Powell minimisation. I can explain further or send you the code, but
first I need to know more about what you are trying to do.

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