Subject: Re: Regrid / Interpolation Question
Posted by Kenneth P. Bowman on Fri, 23 Mar 2012 18:20:30 GMT

In article < 16619448.872.1332525871438.JavaMail.geo-discussion-forums@pb jk8 >,
 Sean <seand13@gmail.com> wrote:

>> Use INTERPOLATE instead of INTERPOL, and compute a 2-D array of
>> coordinates to match yin that contains the row index of each point.
>>
>> Ken Bowman
>
> I can see the general idea for doing this with interpolate --The code should
> look something like
>
> yinterpolates = REBIN(transpose(lindgen(nj)), n_elements(yout), nj)
> yout = interpolate(yin, xinterpolates, yinterpolates)
>
> but I don't quite get how to calculate the x-interpolates. The problem is
> that the values in vin, while ordered in each row, are not evenly spaced --
> Am I missing something simple here?

INTERPOLATE uses the concept of 'fractional coordinates', which you can think
of as floating-point indices into the array.

If your tabulated points are not evenly spaced, you need to first reverse
interpolate the desired output coordinates onto the unevenly spaced grid to get
the fractional coordinates. That is, think of your unevenly spaced x's as a
function of array index.

Then use those fractional coordinates to interpolate the dependent variable
to the output points.

Since you are doing the interpolation row-by-row, the y-coordinate should be
trivial. That is, it should just be the row index itself.

Ken Bowman