Subject: Interpolation: grid --> observation point
Posted by Andy Loughe on Thu, 24 Feb 2000 08:00:00 GMT
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Hello,

I have inherited code that takes atmospheric model (gridded) data
and interpolates it to station observation points that report
hourly precipiation. The model points form a cartesian coordinate
system, while the station observations are spread randomly
within the boundaries of the full model domain.

Currently, a bi-linear approach is used to interpolate the
model data to each observation point. This method uses the
four closest model grid points which surround the observation
point.

I would like to use more than just the four model grid points
which surround the observation point, and weight the more distant
points appropriately.

Any suggestions on effective methods for doing this in IDL?

Thanks!

Andrew F. Loughe email:loughe@fsl.noaa.gov phone:(303)497-6211

Subject: Re: Interpolation: grid --> observation point
Posted by wmc on Fri, 25 Feb 2000 08:00:00 GMT
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Andy Loughe <loughe@fsl.noaa.gov> wrote:
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> model data to each observation point. This method uses the
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> which surround the observation point, and weight the more distant
> points appropriately.

Is this a good idea? If there is any justification for
doing this, its that the model numerics means that more than just the
surrounding grid points influences a point. But in that case, your
interpolation should be based on the model numerics.

This might just be sensible for, say, surface pressure, but I'd have
thought that it would not be appropriate for ppn (by virtue of how its
generated).

In fact, one could probably make a reasonable case for saying that, for
convective ppn, even bilinear interpolation is inappropriate and you
you should just use the value from whichever grid square the station
happens to be in.

-W

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Climate Modeller, British Antarctic Survey | Disclaimer: I speak for myself