Subject: interpol
Posted by Earl Thompson on Thu, 30 Jul 1998 07:00:00 GMT
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greetings...

I am calling interpol and getting results that do not make sense.
The call is of the form

x=interpol(xin,yin,y2in)

I run two cases -
 1. In the first case, xin, yin, and y2in each have 30 elements.
 2. In the second case xin, yin, and y2in are each only 20 elements
    long. They contain a portion of the the first cases's data
    (the last 20 points).

The problem is that the values of x in the 20 element
case are different than in the 30 element case even
though the xin, yin, and y2in arrays are the same
for the 20 input elements common to both cases.

I could be doing something stupid and just not seeing
it or the routine has a bug.

Anybody got a few words of wisdom?

Subject: Re: INTERPOL
Posted by Craig Markwardt on Thu, 04 Oct 2001 01:10:28 GMT
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Hi Roland,

Can you fill us in a little on what this procedure should do, like
with an example of what you did, what was the result, and what you
were expecting?

Craig

"Roland Bammer, Ph.D." <roland@s-word.stanford.edu> writes:
> Hi all,
>
> I have encountered some problems (some data fluctuations at the edges)
> with the INTERPOL-Function:
> when warp_x(0) > 0 or warp(ydim-1) < ydim-1 in the code below.
> Moreover, it seems that the overall signal values are shifted towards

> higher values. Restricting the values of regrid to CEIL(warp_x(0))<=
> regrid <= FLOOR(warp(ydim-1)) (i.e. no extrapolation) did not help at all.
>
> Any suggestions?
>
> PRO regridding, in_vec, new_vec, ydim, mag, shift_y
> x0   = ydim/2.0 - 0.5
> regrid = FINDGEN(ydim)
> x1 = x0 + (regrid-x0)*mag
> warp_x = x1 + shift_y
> new_vec = INTERPOL(in_vec,warp_x,regrid,/SPLINE)
> END;
>
> Roland.
>

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 --- --------------
Craig B. Markwardt, Ph.D.   EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: INTERPOL
Posted by Roland Bammer, Ph.D. on Thu, 04 Oct 2001 02:09:23 GMT
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Hi Craig and others,

"in_vec" is a vector of length "ydim" taken from a column of an image.
the content of this vector should be shifted "shift" and scaled "mag"
(squeezed or magnified) and resampled on a regular grid ("new_vec").
The first and last few elements of "in_vec" are usually mere noise.
Problems occur at the edges of the array when warp_x(0) > 0 or
warp_x(ydim-1) < ydim-1, ie. some elements have some unreasonable high
values. I would understand if this problem arises in the "extrapolation
zone" but these distortions extent into the area where gridpoints are
available (from in_vec and warp_y); and the slightly (a few %) elevated
signal intensity compared to the input is still an enigma.
Any guesses? It occurs for all interpolation schemes (/SPLINE, ...)
Mirroring the data around warp_x(0) and warp_x(ydim-1) helps but the
intensity shift is still there...

Roland.

Craig Markwardt wrote:

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Subject: Re: INTERPOL
Posted by Craig Markwardt on Mon, 08 Oct 2001 20:15:47 GMT
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Hi Roland--

Sorry for the delay, I got preoccupied.

I guess what I was hoping for is some simplified example of why you
think something is not working right. It doesn't actually have to be
the original data, in fact it is better if it is *not*. Best if you

can make a 20-element vector that shows the problem.

I can't see anything obviously wrong with your code. However I use
INTERPOL() regularly inside of PLOTIMAGE and it rarely misses a beat.
Have you tried SPL_INIT/SPL_INTERP? That has also always been a
winner for me.

Craig

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