Subject: Re: Matching data in different time resolution
Posted by Craig Markwardt on Wed, 26 May 2010 00:38:54 GMT
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On May 25, 4:48 pm, Balt <bindermue...@gmail.com> wrote:
> Hi all,
>
> I'm looking for an elegant solution (i.e. one that does not involve
> nested FOR loops) for the following problem:
>
> I have two independent data acquisition systems that sample data at
> different intervals and different start times. Let's say one samples
> in 10 second intervals, the other one in 5 second intervals. I now
> would like to apply a correction determined by one of the systems to
> the other. This means I need to match up the data points in the
> corresponding vectors. Let's assume s1 is system one, s2 is system 2
> delivering the correction values. I have two vectors for each system,
> one containing the timestamps, the other containing the measured data.
>
> For example:
>
> s1_time = [0, 10, 20, 30, 40, 50]
> s1_data = [4, 5, 6, 7, 8, 9]
>
> s2_time = [35, 40, 45, 50, 55, 60]
> s2_data = [1, 2, 3, 2, 1, 2]
>
> This presumably is a rebinning exercise of sorts to first make s2 data
> match:
>
> s2_time_rebinned = [30, 40, 50]
> s2_data_rebinned = [1, 2.5, 1.5]
>
> Then adding the result to the s1 vectors:
>
> res_time = [30, 40, 50]
> res_data = [8, 10.5, 10.5]
>
> Does anyone have pointers/ideas how to best go about this in IDL?

This sounds like an interpolation problem. Your S2 vector is the
"tabulated" vector, which you want to interpolate onto the grid
specified by S1.

You can do spline interpolation with SPL_INIT() and co. I also use
the linear and quadratic interpolation routines of the IDL Astronomy
Library alot, LINTERP and QUADTERP.

Craig

Subject: Re: Matching data in different time resolution
Posted by Jeremy Bailin on Wed, 26 May 2010 12:42:22 GMT
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On May 25, 8:38 pm, Craig Markwardt <craig.markwa...@gmail.com> wrote:
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>
> Craig

Yeah, I would just throw it into INTERPOL. You'll need to think about what you want to do at the boundaries, though - interpolation schemes will often happily give you wild extrapolations if you ask them to.

-Jeremy.
