Subject: Re: Resampling data with irregular time base
Posted by Richard G. French on Sat, 05 Jun 1999 07:00:00 GMT
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Karl Krieger wrote:
>
> I have data with an irregular time base, which I would like to resample
> in a regular spaced time base. How can I average over all original data
> points in each interval of the new time vector without resorting to a
> FOR loop?
> Currently I am using this horrible kludge:
>
> deltat = newtime[1] - newtime[0]
> FOR n=0, n_elements(newtime)-1 DO BEGIN
> index = where((oldtime GT (newtime[n]-deltat/2.)) AND $
> (oldtime LE (newtime[n]+deltat/2.)), $
> count)
> IF count GT 0 THEN newdata[n] = total(olddata[index]) / count
> ENDFOR
>

Another idea! Make sure that oldtime is a sorted array.
Then do a simple interpolation into the oldtime array to find the bin location boundaries that correspond to the newtime locations. This gives you the indices in the oldtime[] array that correspond to the points you are after for each newtime[]
data point. You still have to do a loop, but you are saving a LOT of time by not having to use WHERE over the full range of oldtime[] - you already know the approximate range of data in oldtime[] that fall withing the newtime[] bin, and you can interrogate this MUCH smaller set of points inside your loop to see if there are actually any data points within the deltat range of each newdata[] point.
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