Subject: Re: Approximate convolution - for loop problem
Posted by David Fanning on Sun, 21 Dec 2008 18:03:05 GMT
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samuel.leach@gmail.com writes:

> Hello everyone, I'm trying to execute a 1-d convolution of an array,
> signal.
>
> Using an analytic approximation, obtaining the convolved bolometer
> signal, bolo_signal, at time step ii, is given by the following:
>
> nsamp=n_elements(signal)
> const1 = exp(-tsamp/taubolo)
> const2 = 1.-const1
>
>
> bolo_signal = const2*signal
> for ii= 1L,nsamp-1L do begin
> bolo_signal[ii] += const1*bolo_signal[ii-1]
> endfor
>
> where tsamp and taubolo are scalars. Is there any way to avoid the for
> loop in this case? The hope is to speed up the execution.

I think this gives you the same results:

```
bolo_signal += const1 * shift(bolo_signal,-1)
```

Cheers,

David
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Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")