Subject: Re: Speaking of curve fitting...
Posted by pgrigis on Thu, 31 Jan 2008 16:34:17 GMT
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I guess this may have something to do with the finite precision
of your computer, which affects differently a polynomial
of 6th order evaluated at x=1000 than a polynomial of 6th
order evaluated at x=2E6 (as the ratio between the term
of different order in x is different in the two cases).

Whatever algorithm poly_fit use is likely to run into a problem
in the latter case, where the lower order terms are so small in
comparison with the high order terms. As the fit critically
depend in balancing out all the coefficients, this may well
lead to failure. It is not a good idea to use high order polynomial
on large numbers anyway...

Ciao,
Paolo

Lasse Clausen wrote:
> ... run the following code, spot the difference and explain, s'il vous
> plait.
>
> nn = 1000
> xx1 = dindgen(nn)
> xx2 = timegen(nn, start=julday(5,25,1980,11,23))
>
> yy1 = sin(2.*2.*!pi*xx1/(nn-1.))
>
> d = poly_fit(xx1, yy1, 6, yfit=yfit1, /double)
> d = poly_fit(xx2, yy1, 6, yfit=yfit2, /double)
>
> !p.multi = [0,1,2]
> plot, xx1, yy1, /xstyle
> oplot, xx1, yfit1, linestyle=1
> plot, xx2, yy1,/xstyle
> oplot, xx2, yfit2, linestyle=1
>
> end
>
> I had a quick look at POLY_FIT.PRO but I can spot nothing which could
> explain the above behaviour. I run 32bit IDL 6.4 on some Linux.
>
> Cheers
> Lasse Clausen