Subject: Re: On errors calculated by curve-fitting routines
Posted by Gernot Hassenpflug on Fri, 07 Mar 2008 02:25:49 GMT
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Anthony <anthonysmith80@gmail.com> writes:

> On Mar 6, 3:08 am, Gernot Hassenpflug <ger...@nict.go.jp> wrote:
>> Hello all,
>>
>> I'm using IDL 6.1, as well as Maple 11, Mathematica 6.0, Matlab 7.5
>> and the statistical language R. My goal is to calculate the covariance
>> matrix of parameters of a second order polynomial curve fit. To
>> clarify: I refer to this as linear fitting, since the parameters are
>> linear; however, many books, papers and routines refer to this as
>> non-linear fitting.
/../
>> I am hoping that contributors to this list could give their comments
>> and opinions on what method of parameter variance and covariance is
>> most sound, and which routines are therefore preferred for a
>> polynomial fitting case (possibly over-determined).
/../
> It's worth looking into MPFIT ("Robust non-linear least squares curve
> fitting"):
>
> http://cow.physics.wisc.edu/~craigm/idl/fitting.html

Hello Anthony and thanks. That was actually the last page I studied before posting my original query! There are just so many possibilities, and I am wondering what is the most accepted method of calculating not the fit so much as the covariance matrix of the fitted parameters. Mr. Markwardt's page gives another reference for this which I have to look at:

Bevington, P. R. and Robinson, D. K. 1992, Data Reduction and Error Analysis for the Physical Sciences, 2nd Ed., McGraw-Hill, Inc.

Best regards,
Gernot Hassenpflug
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BOFH excuse #448:

vi needs to be upgraded to vii