Subject: Re: MPFIT question
Posted by Craig Markwardt on Wed, 14 Jan 2009 06:41:17 GMT
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On Jan 13, 2:33 pm, "j.coe...@gmail.com" <j.coe...@gmail.com> wrote:
> I'm fitting data to a gamma variate function using Craig Markwardt's
> MPFIT. This has been working great except for a chronic error message
> that occurs once every 50 fits or so:
>
> MPFIT: Error detected while calling mpfitfun_eval:
> MPFIT: Array dimensions must be greater than 0.
> MPFIT: Error condition detected. Returning to MAIN level.
> MPFITFUN: Error detected while calling mpfitfun_eval: Array dimensions
> must be greater than 0.
> Attempt to subscript P with <INT (1)> is out of range.
>
> My five parameters are getting lost. The parameters are first passed
> to MPFITFUN via the parinfo structure because some are constrained.
> Then the parameters are passed along by MPFITFUN to the user-supplied
> model function as a double array, p. When the error occurs, the p
> array has shrunk from five doubles to just one NaN, as you can see
> from the abbreviated output reproduced at the end of this post. The
> subscripting error happens when the user-supplied model function tries
> to subscript the suddenly nonexistent second element of p, which is
> supposed to have five parameters/elements (and had five elements at
> all previous iterations). This can happen during any MPFIT iteration,
> but usually around iteration 4.
>
> Does anyone know what's going on? I checked to make sure that there
> are no NaN values in the data, and that my gamma variate model
> function is not producing any NaN values at any iteration. I have the
> latest version of the MPFIT library. I've just been catching the
> error and fitting the problematic data with IDL's routine, but MPFIT
> does a much better job when it works for me. Hopefully someone else
> who has encountered this issue knows what I am doing wrong. Thanks.
>
> Iter 1 CHI-SQUARE = 9182.7891 DOF = 353
> P DOUBLE = Array[5]
> .
> .
> Iter 2 CHI-SQUARE = 6448.4258 DOF = 353
> P DOUBLE = Array[5]
> .
> .
> Iter 3 CHI-SQUARE = 8402.1122 DOF = 353
> P DOUBLE = Array[5]
> .
> .

> Iter 4 CHI-SQUARE = 1564.3159 DOF = 353
> P DOUBLE = Array[5]
> .
> .
> MPFIT: Error detected while calling mpfitfun_eval:
> MPFIT: Array dimensions must be greater than 0.
> MPFIT: Error condition detected. Returning to MAIN level.
> P DOUBLE = NaN
> Attempt to subscript P with <INT (1)> is out of range.

Greetings--

I don't believe MPFIT should change the number of elements in the parameter array P.

My first guess is that your user-function is redefining the P array. Try doing a HELP on P at both the beginning and the end of your user function to see if that's true.

Another possibility is to set !EXCEPT=2 to see if IDL will indicate where the numerical exceptions first start to occur.

Finally, nothing beats good ol' stepping through line by line until you find the culprit.

Craig
