Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Craig Markwardt on Tue, 22 Jun 2010 07:48:13 GMT
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On Jun 21, 3:15 pm, Fermiona Fermiona <fermion...@gmail.com> wrote:
> Hello,
>
> I used MPFIT within a loop and I got the following errors:
>
> % MPFIT: Error detected while calling MPFIT_FDJAC2:
> % MPFIT: Out of range subscript encountered: FJAC.
> % MPFIT: Error condition detected. Returning to MAIN level.
>
> The function carried out "Iter 1", calculated "CHI-SQUARE" and
> "DOF" then found the value of the parameters P(0), P(1), etc ..
> After that, it reported the above errors, and increased the dof by 1
> (and consequently skipped finding the value of one of the Params),
> then carried out the rest of iterations.
>
> What could be wrong?

Well the obvious answer is that there was an error while calling
MPFIT_FDJAC2! That is where the user function and its derivatives are
evaluated.

I suspect you are attempting to compute your own explicit derivatives
and not returning an array with the right dimensions and/or sizes.

Regards,
Craig Markwardt

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Fermiona Fermiona on Tue, 22 Jun 2010 09:40:57 GMT
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Hello Dr. Craige,

I didn't compute the derivatives. The user function returnes the
residual:

```
FUNCTION LinearFit, p, X=x, Y=y, ERR=err, $
                perror=perror, bestnorm=bestnorm, dof=dof

   model = p[0]+p[1]*x
   resid = (y-model)/err

   return, resid
```

END

and inside the procedure, I had:

p0 = [51.0,-0.5]
args = {X:x_n, Y:y_n, ERR:yerr}
fit_res = mpfit('LinearFit', p0, functargs=args,perror=perror,
bestnorm=bestnorm, dof=dof)

The first time I called mpfit outside of the loop, there was no
error.
When mpfit was called again, from inside the loop this time, I got the
error I mentioned.

Many thanks!

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Craig Markwardt on Wed, 23 Jun 2010 04:47:16 GMT
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On Jun 22, 5:40 am, Fermiona Fermiona <fermion...@gmail.com> wrote:
> Hello Dr. Craige,
>
> I didn't compute the derivatives. The user function returnes the
> residual:
>
> FUNCTION LinearFit, p, X=x, Y=y, ERR=err, $
> perror=perror, bestnorm=bestnorm, dof=dof
>
> model = p[0]+p[1]*x
> resid = (y-model)/err
>
> return, resid
> END
>
> and inside the procedure, I had:
>
> p0 = [51.0,-0.5]
> args = {X:x_n, Y:y_n, ERR:yerr}
> fit_res = mpfit('LinearFit', p0, functargs=args,perror=perror,
> bestnorm=bestnorm, dof=dof)
>
> The first time I called mpfit outside of the loop, there was no
> error.
> When mpfit was called again, from inside the loop this time, I got the
> error I mentioned.

>

I'm guessing what "inside" and "outside" of a loop might mean.

Forgetting a loop, does your experience mean that you can call MPFIT with some arguments a first time, and it works; and then you do it again with *exactly* the same arguments and it fails? That would be odd.

Or, do you mean you are calling MPFIT recursively?

Craig

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Fermiona Fermiona on Wed, 23 Jun 2010 06:35:32 GMT
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The first time I called MPFIT was to fit an entire set of data (30 points), i.e. no need for a loop

The second time I called MPFIT was to fit a subset of the entire set (6 points at a time, hence the need for a loop)--> this fails

Thank you!!

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Fermiona Fermiona on Wed, 23 Jun 2010 08:39:36 GMT
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It works now after I found the "transpose" of the subarrays:

args = {X:transpose(x_n), Y:transpose(y_n), ERR:transpose(yerr)}

It would have been really nice if we could get an error about the wrong type of structure MPFIT accepts.

Thaaanks!!!

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Craig Markwardt on Thu, 24 Jun 2010 00:16:17 GMT
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On Jun 23, 4:39 am, Fermiona Fermiona <fermion...@gmail.com> wrote:

> It works now after I found the "transpose" of the subarrays:
>
> args = {X:transpose(x_n), Y:transpose(y_n), ERR:transpose(yerr)}
>
> It would have been really nice if we could get an error about the
> wrong type of structure MPFIT accepts.
>
> Thaaanks!!!

Quoting the documentation...
; In general there are no restrictions on the number of dimensions in
; X, Y or ERR. However the deviates *must* be returned in a
; one-dimensional array, and must have the same type (float or
; double) as the input arrays.

CM

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by pete.petrus on Thu, 01 May 2014 14:28:01 GMT
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On Wednesday, June 23, 2010 8:16:17 PM UTC-4, Craig Markwardt wrote:
> On Jun 23, 4:39 am, Fermiona Fermiona <fermion...@gmail.com> wrote:
>> It works now after I found the "transpose" of the subarrays:
>>
>> args = {X:transpose(x_n), Y:transpose(y_n), ERR:transpose(yerr)}
>>
>> It would have been really nice if we could get an error about the
>> wrong type of structure MPFIT accepts.
>>
>> Thaaanks!!!
>
> Quoting the documentation...
> ; In general there are no restrictions on the number of dimensions in
> ; X, Y or ERR. However the deviates *must* be returned in a
> ; one-dimensional array, and must have the same type (float or
> ; double) as the input arrays.
>
> CM

Ha ha bit me too.

"However the deviates *must* be returned in a
; one-dimensional array"

A error code for this (when the residuals are not 1-D) with something like STATUS "-19 Hey dumb-ass read the documentation" would be helpful

Cheers

-- Pete

Subject: Re: Error detected while calling MPFIT_FDJAC2
Posted by Craig Markwardt on Thu, 01 May 2014 17:34:42 GMT
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On Thursday, May 1, 2014 10:28:01 AM UTC-4, pete....@gmail.com wrote:
> On Wednesday, June 23, 2010 8:16:17 PM UTC-4, Craig Markwardt wrote:
>
>> On Jun 23, 4:39 am, Fermiona Fermiona <fermion...@gmail.com> wrote:
>
>>> It works now after I found the "transpose" of the subarrays:
>
>>>
>
>>> args = {X:transpose(x_n), Y:transpose(y_n), ERR:transpose(yerr)}
>
>>>
>
>>> It would have been really nice if we could get an error about the
>
>>> wrong type of structure MPFIT accepts.
>
>>>
>
>>> Thaaanks!!!
>
>>
>
>> Quoting the documentation...
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>> ; In general there are no restrictions on the number of dimensions in
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>> ; X, Y or ERR. However the deviates *must* be returned in a
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>> ; one-dimensional array, and must have the same type (float or
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>> ; double) as the input arrays.
>
>>
>
>> CM
>
>

>
> Ha ha bit me too.
>
>
>
> "However the deviates *must* be returned in a
>
> ; one-dimensional array"
>
>
>
> A error code for this (when the residuals are not 1-D) with something like STATUS "-19 Hey dumb-ass read the documentation" would be helpful

Good point. Could you run MPFIT with /NOCATCH set, to find out where it crashes specifically?

Thanks,
Craig
