
Subject: mpfit: meaning of status flag

Posted by [Maarten\[1\]](#) on Thu, 26 Apr 2007 09:32:40 GMT

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Hi,

I'm using mpfit (actually mpfitfun) to do some fitting. Even though the fit seems to converge properly, for all fits I get the message: improper input parameters. Is this a problem? I must admit that I thoughtfully abuse the X variable, to pass some extra information around, but as far as I know, mpfit does not touch this variable. On the other hand, looking at the list of possible status values, I wouldn't know exactly what's good, and what isn't.

Maarten

Subject: Re: mpfit: meaning of status flag

Posted by [Christopher Thom](#) on Tue, 01 May 2007 13:27:25 GMT

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Quoth Maarten:

> On Apr 27, 6:32 pm, Craig Markwardt wrote:

>

>> As you suspect, neither MPFIT nor MPFITFUN touches the "X" values. As

>> I note on my FAQ, check the ERRMSG keyword for a text description of

>> the problem. Usually you have specified a model parameter outside of

>> its limits or something like that.

>

> the errmsg string is empty, at least on the output that I've managed

> to generate. All I have is the status variable equal to 1, and the

> model parameters are within the limits, I checked that first.

>

> A plot of the fit looks OK, and the residuals seem to be fine, so I

> suspect it is OK, but the documentation is a bit vague: "STATUS: an

> integer status code is returned. All values other than zero can

> represent success." So I might be successful, but I'm certainly a bit

> uncertain right now ;)

The documentation in mpfit.pro is pretty explicit.

=====

```
; STATUS - an integer status code is returned. All values greater
;         than zero can represent success (however STATUS EQ 5 may
;         indicate failure to converge). It can have one of the
;         following values:
;
;
```

```

; -16 a parameter or function value has become infinite or an
;      undefined number. This is usually a consequence of
;      numerical overflow in the user's model function, which
;      must be avoided.
;
;
; -15 to -1
;      these are error codes that either MYFUNCT or ITERPROC
;      may return to terminate the fitting process (see
;      description of MPFIT_ERROR common below). If either
;      MYFUNCT or ITERPROC set ERROR_CODE to a negative number,
;      then that number is returned in STATUS. Values from -15
;      to -1 are reserved for the user functions and will not
;      clash with MPFIT.
;
;
; 0 improper input parameters.
;
;
; 1 both actual and predicted relative reductions
;    in the sum of squares are at most FTOL.
=====

```

A return status of 1 means that everything is working ok, and that the routine seems to have found the minimum. If your fit looks ok, and the errors seem reasonable, then your work here is done.

cheers
chris

Subject: Re: mpfit: meaning of status flag
 Posted by [Maarten\[1\]](#) on Tue, 01 May 2007 14:33:31 GMT
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On May 1, 1:27 pm, Christopher Thom <c...@oddjob.uchicago.edu> wrote:
 > Quoth Maarten:
 >
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 >> uncertain right now ;)
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 > The documentation in mpfit.pro is pretty explicit.

Thanks, I'd been looking at the mpfitfun docs, which is somewhat less explicit. I should have thought to look at the primary source.

> A return status of 1 means that everything is working ok, and that the
 > routine seems to have found the minimum. If your fit looks ok, and the

> errors seem reasonable, then your work here is done.

I already assumed that that was the case.

Maarten

Subject: Re: mpfit: meaning of status flag

Posted by [Craig Markwardt](#) on Sun, 06 May 2007 05:13:10 GMT

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Maarten <maarten.sneep@knmi.nl> writes:

> On May 1, 1:27 pm, Christopher Thom <c...@oddjob.uchicago.edu> wrote:

>> Quoth Maarten:

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>> errors seem reasonable, then your work here is done.

>

> I already assumed that that was the case.

Wait, you are saying you got a return status value of 1 (success) and
an empty ERRMSG, and yet somehow a message was printed to the screen
that said "improper input parameters"?

Craig

--

Craig B. Markwardt, Ph.D. EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response

Subject: Re: mpfit: meaning of status flag
Posted by [Maarten\[1\]](#) on Mon, 07 May 2007 07:06:41 GMT
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Craig Markwardt wrote:

```
> Maarten <maarten.sneep@knmi.nl> writes:
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> that said "improper input parameters"?
```

No, PEBKAC. Off by one error on my part, after creating a human readable version of the documentation header in LaTeX, the status messages were off by one (insert bright red face here). All is fine now (although the mismatch between the headers of mpfit and mpfitfun is real; the mpfit header seems more readable).

Maarten
