Subject: Re: MPfit question

Posted by Wox on Wed, 01 Oct 2008 08:31:54 GMT

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On 30 Sep 2008 11:49:46 -0400, Craig Markwardt <craigmnet@REMOVEcow.physics.wisc.edu> wrote:

- > If you look at the code, the value of ALPHA is adjusted so that, at
- > the next iteration, a parameter will exactly touch its boundary,
- > within a small tolerance. At that point, the parameter will be
- > considered fixed, and will no longer enter into the calculation of the
- > value of ALPHA. [*] Thus, the step *is* adaptive, it just doesn't
- > happen in a single iteration.

I'm sorry, but I don't see how it does this. ALPHA is adjusted and immediatly used (see below). In the next iteration, the increments are calculated again by mpfit Impar and used again to calculate ALPHA. whether the param was at the limit in the previous iteration or not.

The thing is, my problem is solved when I adjust the increments themselves and leave ALPHA=1. I was just wondering whether I introduce some errors by doing this.

```
INNER_LOOP:
; mpfit_lmpar:
; solve A.wa1=B and sqrt(par).D.wa1=0
; where wa1 is the parameter increment
; When some param goes outside boundary, make alpha smaller so it
touches the boundary:
dwa1 = abs(wa1) GT MACHEP0
whl = where(dwa1 AND gllim AND (x + wa1 LT llim), lct)
if lct GT 0 then $
       alpha = min([alpha, (llim[whl]-x[whl])/wa1[whl]])
whu = where(dwa1 AND qulim AND (x + wa1 GT ulim), uct)
if uct GT 0 then $
       alpha = min([alpha, (ulim[whu]-x[whu])/wa1[whu]])
; Apply increment!
xnew = x + alpha * wa1
; When the step puts us on a boundary, make sure it is exact
; Convergence tests + succesfull inner loop test
```

Page 2 of 2 ---- Generated from comp.lang.idl-pvwave archive