Subject: Re: Trouble with MPFITFUN
Posted by Helder Marchetto on Wed, 11 Apr 2012 18:08:31 GMT
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On Wednesday, April 11, 2012 6:34:23 PM UTC+2, Helder wrote:
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> The fitting function is:
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Ok, just had some dinner and the head is a bit clearer now. I think everything is working fine. The only problem is that the square residuals don't change a lot when changing the position of the step. It's like finding the minimum on a flat 100 square meter surface with a little 1 square cm hole hidden somewhere...

I think this is it, if anybody has a suggestion on how to better estimate the step, that would be appreciated... I'll go for dessert and maybe get a good idea on how to do that.

Cheers,
Helder

Subject: Re: Trouble with MPFITFUN
Posted by Helder Marchetto on Wed, 11 Apr 2012 19:51:36 GMT
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Ok, even dessert helped. By doing a smooth+deriv operations and then fitting the peak, I can get

quite reliably a peak.
I think I'll try to delete this post tomorrow and insert it in the hall of shame...
Cheers, h

Subject: Re: Trouble with MPFITFUN
Posted by David Fanning on Wed, 11 Apr 2012 19:55:59 GMT
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Helder writes:

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Coyote was telling me they have pretty much run out
of space in the current location. They are looking
for an airport hanger, apparently, but won't be
accepting new donations until they find something
suitable. :-(

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Trouble with MPFITFUN
Posted by Craig Markwardt on Thu, 12 Apr 2012 05:10:08 GMT
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On Wednesday, April 11, 2012 12:34:23 PM UTC-4, Helder wrote:
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Posted by Helder Marchetto on Thu, 12 Apr 2012 08:48:44 GMT
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> Craig Markwardt

Thanks Craig,

your tip was very useful. I never thought about the ERF!
Here is the function I am now using:

```
FUNCTION StepErrFun, X, P
;Parameter definition
;P[0] = Step height
;P[1] = Location of step
;P[2] = 2*SQRT(ALOG(P[2])) is the FWHM
;P[3] = Step offset
RETURN,(P[0]/2D)* ERFC((P[1]-X)/P[2])+P[3]
END
```

So far it worked fine!
Thanks again.
I will see what I can do with the Parinfo parameters. I'm currently using the procedure to show live fitting whilst moving a cross section on an image and it seems stable enough... Fits edges also where one would not see one.

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Posted by Craig Markwardt on Thu, 12 Apr 2012 12:35:06 GMT
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I'm glad that it's working. The reason I suggested PARINFO is that the fitter can get stuck. If it tries to make the step too narrow (P[2] -> 0) during its iterations, then it will have a hard time getting out of that condition in later iterations. A step function with width 0.0001x(grid spacing) gives essentially the same chi-square as a step function with 0.00010001x(grid spacing), so the partial derivative goes to zero, or is noisy.

By setting up PARINFO.STEP, you can make sure that MPFIT takes large enough steps for partial derivatives.

Craig