Subject: Re: MPFIT and initial Guesses
Posted by wlandsman on Mon, 10 Mar 2014 17:01:54 GMT
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This doesn't directly address your question but I wanted to know if anyone had implemented the Covariance Matrix Adaptation Evolution Strategy (CMA-ES) in IDL before I try to do it myself. Unlike the Levenberg_marquardt algorithm, CMS-ES does find the global minimum. It has been coded in most scientific programming languages (https://www.lri.fr/~hansen/cmaes_inmatlab.html) but not IDL as far as I know.

--Wayne

On Monday, March 10, 2014 12:32:35 PM UTC-4, Steve Kaeppler wrote:
> Hi All-
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> I have been trying to use the MPfunfit and MPfit function that I downloaded directly off Craig's UW-Madison website for idl. I am attempting to fit an accelerated Maxwellian to electron flux data that was obtained on a sounding rocket. I have gotten the function up and running correctly (I think), and it does produce a solution.
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> However, I have found that the resulting parameter estimates change depending upon the initial guesses put in. I have tried to implement doing a small grid search on one of the parameters and then using the lowest chi square value from that grid search as the initial guess. I know that Levenberg-Marquardt routines do not converge to a global solution, but I am concerned that there are multiple local solutions that produce similar values of chi-squared.
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> To that end, I am trying to track down whether I am properly implementing this function.
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> I have tried to manually play with setting various step sizes in the parameters. Is there a location within the code or a parameter I could set which would allow me to see what the step size is? I am concerned I am either setting the step sizes too large or too small.
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> A second question, which may be harder to answer, how close does the initial guess need to be to obtain a global minimum or something close? I suspect this has to do with how well defined the problem is.

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> Any help would be appreciated and please let me know if you would like me to post some code or results I am getting.
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> Thank you,
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> Steve
