Subject: Re: Robust curve fitting
Posted by Craig Markwardt on Tue, 04 Aug 1998 07:00:00 GMT
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Mark Elliott <mark@mail.mmrrcc.upenn.edu> writes:
>
> Do you or anyone reading this know if there are similar IDL (or
> MINPACK) routines which perform Levenberg-Marquardt fitting to COMPLEX
> functions?
>

I'm not an expert in the field, I just translated the program!

I can tell you that MPFIT itself does not understand complex variables; they have to be either FLOAT or DOUBLE. I am not even sure what the least-squares problem means when you talk about complex numbers. If you want to minimize the Euclidean distance between data and model points on the complex plane, and if your data have independent errors in the real and imaginary components, then the solution should be easy.

You should be able to treat your data as a two-dimensional function. In principle, MPFIT and its siblings can fit a function of any number of dimensions. So you could possibly just separate the real and imaginary components out in both your data and function. MPFIT will minimize the sum of the squared differences between individual components, which amounts to minimizing the Euclidean distance I think.

Good luck,

Craig

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