Subject: Re: Robust curve fitting
Posted by Craig Markwardt on Mon, 03 Aug 1998 07:00:00 GMT
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Another point to mention. These MINPACK routines work under both IDL versions 4 and 5.

Craig

>
> I recently had an opportunity to translate the MINPACK-1 curve-fitting
> package into IDL. MINPACK is a minimization package available from
> netlib, and has an excellent reputation. I have found that it is much
> more robust, able to cope with singular matrices, etc. Since people
> have been requesting, I polished it up a little bit, and am making it
> available via my IDL web page:
>
> http://astrog.physics.wisc.edu/~craigm/idl/idl.html
>

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

Subject: Re: Robust curve fitting
Posted by davidf on Tue, 04 Aug 1998 07:00:00 GMT
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Craig Markwardt (craigmnet@astrog.physics.wisc.edu) has made a outstanding contribution to this newsgroup when he writes:

> There has been some recent discussion on this newgroup about curve
> fitting. Specifically, people wanted a faster system with more
> features. I also wanted a curve fitting routine that didn't cause IDL
> to crash.
>
> I recently had an opportunity to translate the MINPACK-1 curve-fitting
> package into IDL. MINPACK is a minimization package available from
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> have been requesting, I polished it up a little bit, and am making it
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Thanks very much, Craig, for these routines and for the work
you have done to make them accessible for the rest of us.
I appreciate it very much.

Best Regards,

David

--
David Fanning, Ph.D.
Fanning Software Consulting
E-Mail: davidf@dfanning.com
Phone: 970-221-0438
Coyote's Guide to IDL Programming: http://www.dfanning.com/

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

Subject: Re: Robust curve fitting
Posted by Mark Elliott on Tue, 04 Aug 1998 07:00:00 GMT
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Thanks so much Craig!

Do you or anyone reading this know if there are similar IDL (or MINPACK) routines which perform Levenberg-Marquardt fitting to COMPLEX functions?

Thanks again.

Craig Markwardt wrote:
>
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> fitting. Specifically, people wanted a faster system with more
> features. I also wanted a curve fitting routine that didn't cause IDL
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>

--

Mark Elliott |
Dept of Radiology | Voice: (215) 898-9357
University of Pennsylvania | FAX : (215) 573-2113
Philadelphia, PA 19104 USA | Email: mark@mail.mmrrcc.upenn.edu

Subject: Re: Robust curve fitting
Posted by rosentha on Tue, 04 Aug 1998 07:00:00 GMT
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On 03 Aug 1998 23:43:46 -0500,
Craig Markwardt <craigmnet@astrog.physics.wisc.edu> wrote:
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> versions 4 and 5.
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> Craig
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>>
>> http://astrog.physics.wisc.edu/~craigm/idl/idl.html

As someone as who is just about to start writing a new code to fit
lines in the solar acoustic power spectrum, can I just say ... er, I'm
lost for words.

--
Colin Rosenthal
High Altitude Observatory
Boulder, Colorado
rosentha@hao.ucar.edu