Subject: Re: What is the difference between 'curvefit', 'lmfit' and 'svdfit' procudure?
Posted by Craig Markwardt on Thu, 08 Mar 2007 02:07:36 GMT
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"duxiyu@gmail.com" <duxiyu@gmail.com> writes:
> Thank you very much!
> I have download the MPFIT package.
> Now I'm studying it. ^_^
> But in your package there is not procedure named 'MPEVALEXPR' which is
> in the sentence 'yfit = MPEVALEXPR(expr, x, p) Expression named expr'.

It's hidden inside mpfitexpr.pro, and only needed if you want to
evaluate a user expression for parameter values *other* than the best
fit values. Given that most people would use MPFITEXPR()
interactively from the command line, this is not a problem. (You can
also use 'forward_function mpevalexpr' to make sure it is available in
canned a script.) This is of course not an issue with MPFITFUN(),
which I recommended.

> By the way, I wonder the difference between LMFIT and CURVEFIT very
> much.
> Are their function the same as each other?

CURVEFIT - poor man's non-linear least squares original to IDL, based
on gradient expansion and not really robust.
LMFIT - probably more robust non-linear least squares with
Levenberg-Marquardt technique. It still has some fatal
flaws, like evaluating the user function one point at a time.
This routine was released after MPFIT.
LINFIT - for fitting a straight line to XY data only.
POLY_FIT - for fitting a polynomial to XY data.
SVDFIT - for fitting a linear combination of any basis functions.
LADFIT - for fitting a straight line, but *not* least squares
(more robust against outliers)

Good luck,
Craig

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