Subject: MPFIT update
Posted by Craig Markwardt on Tue, 16 Nov 1999 08:00:00 GMT
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I'd like to announce some updates to my least squares fitting package for IDL called MPFIT. MPFIT is based on the robust routines in MINPACK-1 (available from netlib.org), and generally more crash resistant than the IDL built-in routines. In addition, MPFIT allows you much better control over parameters, including holding them fixed, etc.

* I have tried to optimize MPFIT for speed as much as I can. The scary thing is, when I started to make things more vectorized the routine got *slower*. I think this is the limit!

  As a side note, I wholeheartedly recommend *not* using analytical derivatives. For most applications they appear to be slower to compute and don't necessarily produce a better answer. Just let MPFIT do its numerical-derivative-thang.

* A new routine MPCURVEFIT, a drop-in replacement for IDL's CURVEFIT, but with the bells and whistles you come to know and expect from the MPFIT package.

* A new routine MPFIT2DFUN which makes fitting 2-D images much easier.

* Two new routines MPFITPEAK and MPFIT2DPEAK which are drop-in replacements for IDL's GAUSSFIT and GAUSS2DFIT, but use MPFIT as the fitting engine. I also have a different way of estimating the starting parameters which I feel is superior. Please prove me wrong! Thanks to Octavi Fors <octavi@astro.yale.edu> for prodding me and sending me sample data.

I feel like MPFIT is becoming pretty stable now. I admit that it is not as fast as CURVEFIT, but in my applications, speed is not everything. My highest goals are for the fitting routine not to crash and to return sane answers.

Happy fitting,

Craig
http://cow.physics.wisc.edu/~craigm/idl/idl.html

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