Subject: MPFIT, PS_FORM updates
Posted by Craig Markwardt on Wed, 09 Dec 1998 08:00:00 GMT
View Forum Message <> Reply to Message

Greetings!

I have made some small improvements to the MPFIT family of curve fitting routines, and to the PS_FORM Postscript configuration function, which you might find useful.

Find them here: http://astrog.physics.wisc.edu/~craigm/idl/idl.html

---

To summarize, MPFIT, MPFITFUN, and MPFITEXPR are routines for curve and surface fitting, based on MINPACK-1. The algorithms are generally more stable than just the raw Levenberg-Marquardt routines of CURVEFIT. The MPFIT function also allows you to place simple constraints on parameter values, to fix parameters, etc. via the PARINFO keyword.

A tutorial is included on the web page above, and the routines are fully documented internally. New changes include:

* some bugs fixed and requested features added.
* the PARINFO keyword now accepts only the tags that are desired. For example, you can pass PARINFO=replicate({fixed:0},5). In the previous version you had to make a structure with all of the tags.
* Analytic derivatives can be computed by the user-supplied function, if the keyword AUTODERIVATIVE=0 is passed.
* you can tie parameter values together using the "TIED" tag in PARINFO. Any arbitrary expression relating parameter values is allowed. For example the following code,

```
PARINFO = replicate({tied:''},5)
PARINFO(2).tied = 'P(0) + P(4)'
P = MPFIT( ..., PARINFO=PARINFO, ...)
```

enforces the constraint that parameter number 2 is the sum of parameters 0 and 4. Parameter 2 would implicitly be considered "fixed" in this case since it is not a free variable.
* the exception handling is meant to be more friendly (we'll see).

PS_FORM is a widget function, originally written by David Fanning to configure the Postscript device for IDL. I have almost entirely re-written the function so that it includes support for an arbitrary number of predefined formats and different paper sizes. For european users, an "A4" selection is supplied.

This version contains slight improvements and bug fixes from the
previous one. Documentation is included with the function.

I'm going away on travel now, so presumably a huge bug will now be
discovered. It's the way of the Internet. Hope these routines are
useful to you!

Craig

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