Subject: function minimization

Posted by lyubo on Fri, 20 Jun 2003 20:31:24 GMT

View Forum Message <> Reply to Message

 $[f1(x,y)-A]^2+[f2(x,y)-B]^2=0$ 

Is there any function in IDL that I can use to minimize the above equation with respect to x and y? (A and B are constants).

I was looking at LMFIT but I am not sure if I can apply in this case.

Any feedback would be appreciated.

Thanks,

Lyubo

Subject: Re: Function minimization
Posted by news.verizon.net on Thu, 12 Apr 2007 20:29:35 GMT
View Forum Message <> Reply to Message

- > I have been singularly unsuccessful on implementing a procedure/
- > function which implements minF\_parabolic to minimize a quadratic
- > function. Specifically, I am not at all clear how any function gets
- > minimized if only a scalar px is being passed. Wouldn't one want
- > to pass an array of independent variables?

Not necessarily, because the function gets called iteratively, as one refines the the position of the minimum.

For a simple example, consider a simple quadratic

function quadfunc, x return, (x[0]-2.345)^2 end

In this case we know the position of the minimum is at 2.345, but we'll let minf\_parabolic figure it out numerically. As a starting point , we need 3 points which bracket the minimum, i.e. f(b) < f(a) and f(b) < f(c) with a<b<c. You could get these using minf\_bracket.pro for example, but let's say we know that the 3 points 0, 2, and 5 bracket the minimum. Then

IDL> minf\_parabolic,0,2,5,xmin,func\_name='quadfunc' & print,xmin 2.34508

(MINF_PARABOLIC is an IDL	implementation of the "Brent" algorithm in	
"Numerical Recipes" available	at http://idlastro.gsfc.nasa.gov/ftp/pro/math/minf_	_parabolic.pr c

Page 2 of 2 ---- Generated from comp.lang.idl-pvwave archive