Subject: function minimization
Posted by lyubo on Fri, 20 Jun 2003 20:31:24 GMT
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[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
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> 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 o