Subject: Re: Constrained Optimization routine
Posted by James Kuyper on Fri, 26 Aug 2005 15:05:49 GMT
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Gianluca Li Causi wrote:
> Hi all,
> I'm wondering if anybody knows an IDL routine to perform minimization
> of a nonlinear function given functional constraints on the variables.
>
> I mean: I would minimize a nonlinear F(x0,...,xn) subject to the
> constraint G(x0,...,xn)=0, where G is another nonlinear function of the
> same variables.
>
> I know the very good TNMIN routine from Craig B. Markwardt, it can deal
> very well with simple boundary constraints on each variable (e.g. xi >
> low_boundary or xi < high_boundary), but it is not possible to define a
> limit constraint which is a function of more variables.

Have you tried CONSTRAINED_MIN()? It sounds like exactly what you're
looking for.

Subject: Re: Constrained Optimization routine
Posted by Gianluca Li Causi on Mon, 29 Aug 2005 13:55:23 GMT
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Thanks James, I'd not tried it!

I've done it now upon your suggestion: it really does what I've
described, but I've realized that it does not work with my specific
problem, probably because one of my boundary G functions is a discrete
one!
In fact i have to minimize F so that a continuous G1 constraint is
satisfied AND a second discrete constraint, G2, (which is the number of
local maxima of F, so an integer value) is fixed.

Can you or anybody else suggest me a similar routine which also handle
discrete functions?

Many thanks!
Gianluca