Subject: Re: Help Wanted: IDL Math Expert
Posted by John Votaw on Tue, 19 Aug 1997 07:00:00 GMT
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David Fanning wrote:
>
> Hi Folks,
>
> I had a friend ask a question about IDL that I didn't know how
> to answer. (Uh, math is not my strength, you understand. :-))
>
> Suppose I have a set of raw data that is described
> theoretically by two parametric equations. And suppose
> I need to fit these two parametric equations to the data
> since there is no mathematical way to convert the x(t)
> and y(t) equations into a y(x) form. Is there a
> curve fitting routine in IDL that can handle parametric
> equations? Or, failing that, has anyone handled something
> like this in IDL and would be willing to give us a little
> help?
>> Many thanks,

The real question here is what do you mean by a good fit? You must write an equation in terms of the parameters in your parametric equations that is minimal when the desired fit is achieved.

For example, suppose your data is (x,y) pairs and you would like to fit it to a generalized ellipse. Do you want to minimize the squared distance along a vector from the center of the ellipse between the data and the fit? Perhaps you want to minimize the distance along a line normal to the fit curve.

The difficult part is writting this 'figure of merit' equation. Once you have it, you can use any of the function minimization routines. I suggest you start by looking at Powell.

Good Luck,

John R. Votaw
votaw@commander.eushc.org