Subject: Re: Curvefit
Posted by thompson on Wed, 21 May 1997 07:00:00 GMT
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zanotti@bali.saclay.cea.fr (J.M. Zanotti) writes:

> Hi,

> I use CURVEFIT (on PV-WAVE CL Version 6.05 (sun4 solaris sparc)) to perform
> non-linear least sqares fitting. It works rather well, but once the fit is
> performed, the vector of standard deviations for parameters (named Sigmaa)
> seems to give very large values:
> for a given set of data, the error on parameters is ten times greater with
> Curvefit than, for exemple, with Kaleidagraph.

> In fact, Curvefit is based on the Gradient-expansion algorithm, and the way
> the programm calculates the error (i.e SIGMAA = SQRT(ARRAY(DIAG)/ALPHA(DIAG))
> ) is perharps wrong (something missing ???).

> Does anybody has an idea ?

It probably depends on the weighting function that you give it. If the weights
are related to true errors on the measurements, i.e. 1/sigma^2, then the SIGMAA
values should normally be realistic. However, if the weights have an arbitrary
normalization, then the SIGMAA values will also be off. A good test is to look
at the chi-squared value, which is returned in the keyword CHI2. Realistic
weights should result in a chi-squared close to 1. If far away from 1, then
the SIGMAA values will be off as well. One way to adjust for this is to
multiply the SIGMAA values by SQRT(CHI2).

Bill Thompson