Subject: Re: Problems getting CURVEFIT to work
Posted by James Kuyper on Wed, 13 Nov 2002 15:41:10 GMT
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Jonathan Greenberg wrote:
>
> Thanks!
>
> On 11/12/02 5:14 PM, in article onk7jiuv7e.fsf@cow.physics.wisc.edu, "Craig
> Markwardt" <craigmnet@cow.physics.wisc.edu> wrote:
>
>>
>> Jonathan Greenberg <greenberg@ucdavis.edu> writes:
>>> Hi there, I'm trying to use CURVEFIT to fit data to a decay function of the
>>> form:
>>> f(x) = a(1-e^(bx))+c
>>
>> Problem 1. Your parameters A and C are very highly (anti) correlated
>> with each other.  It would be better to recast as A*EXP(B*X) + C.
>
> The problem is I need a curve that starts low and asymptotes higher -- I

Which is precisely what a*exp(b*x)+c will do, for the appropriate values
of a, b, and c. For example, y=-80690323.0D*exp(-0.0006D*x)+1.340D is a
curve with those features, which makes a rough match to your data. It
can be converted to the form of your equation by re-writing it as:

y = 80690323.0D*(1.0D - exp(-0.0006D*x))-80690321.66D

But as you can see, that form obscures the assymptotic value, which is
1.34 for this curve. The assymptote in your form is a-c, which is a
small difference of two very large numbers. That causes problems for any
numerical approach to
fitting this equation to data.