Subject: Problems getting CURVEFIT to work
Posted by Jonathan Greenberg on Tue, 12 Nov 2002 23:24:35 GMT
View Forum Message <> Reply to Message

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
My code is as follows:

```
pro decayfunc, X,A,F,pder
bx=EXP(A[1]*X)
F=A[0]*(1-bx)+A[2]
if N_PARAMS() GE 4 THEN $
pder=[[1-bx],[-A[0]*X*bx],[replicate(1.0,N_ELEMENTS(X))]]
end

X=[30185.0,33897.0,35089.0,35377.0,35665.0]
Y=[0.3002,1.3849,1.3004,1.226,1.3118]
A=[1.25,-1.0,-0.1]
weight=[1.0,1.0,1.0,1.0,1.0]
 yfit=CURVEFIT[X,Y,weights,A,SIGMA,FUNCTION_NAME='decayfunc', /DOUBLE]
```

I get the error:
CURVEFIT: Failed to converge- CHISQ increasing without bound.
and the SIGMA values are:
.44721360,Infinity,.44721360

The plot of the data looks like it should fit a decay equation, but CURVEFIT
can't seem to determine the parameters. I've tried a number of different
starting values for A to no avail. Any suggestions?

--j

--
Jonathan Greenberg
Graduate Group in Ecology, U.C. Davis
http://www.cstars.ucdavis.edu/~jongreen
http://www.cstars.ucdavis.edu
AIM: jgrn307 or jgrn3007
MSN: jgrn307@msn.com or jgrn3007@msn.com

Subject: Re: Problems getting CURVEFIT to work
Posted by Pavel A. Romashkin on Fri, 15 Nov 2002 23:22:01 GMT
View Forum Message <> Reply to Message

Jonathan Greenberg wrote:
>

> Hello again Craig:
>
> You MPCURVEFIT function is terrific! I've started using it instead of
> CURVEFIT. One quick question, how does it deal with NaN values? I started
> including NaN values in my regressions, and I noticed some strange behavior
> from the output -- ideally it should just ignore the X,Y that has a NaN for
> the X value, but is this actually the case?

Aha! This handling of NANs is the only part I couldn't figure out why it
was not there.
All I do is filter my own data for NANs before fitting.
I guess Craig got distracted and didn't put WHERE(FINITE()) into his code...
And of course, the program is excellent. No question there.
Cheers,
Pavel

Subject: Re: Problems getting CURVEFIT to work
Posted by Craig Markwardt on Sat, 16 Nov 2002 04:38:47 GMT
View Forum Message <> Reply to Message

"Pavel A. Romashkin" <pavel_romashkin@hotmail.com> writes:

> Jonathan Greenberg wrote:
>>
>> Hello again Craig:
>>
>> You MPCURVEFIT function is terrific! I've started using it instead of
>> CURVEFIT. One quick question, how does it deal with NaN values? I started
>> including NaN values in my regressions, and I noticed some strange behavior
>> from the output -- ideally it should just ignore the X,Y that has a NaN for
>> the X value, but is this actually the case?
>
> Aha! This handling of NANs is the only part I couldn't figure out why it
> was not there.
> All I do is filter my own data for NANs before fitting.
> I guess Craig got distracted and didn't put WHERE(FINITE()) into his code...
> And of course, the program is excellent. No question there.

Hi Pavel--

There is no formal requirement that X and Y have the same dimensions
for most of the MPFIT family routines. Thus, doing the kind of
filtering you suggest gets a little tricky.

In more recent versions of MPFIT, I actually check for NaNs or
Infinities, and notify the user of a problem. If you have NaNs, that
is a problem. If certain points are to be ignored, then set their

WEIGHTS equal to zero. I don't think that CURVEFIT handles NaNs
either. Not that that's a good excuse (:-) but I think it's better
for the user to be explicit about what to do.

Happy fitting!
Craig

--
-- ----------
Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
-- ----------