Subject: More problems with Curvefit
Posted by heather.williams on Mon, 30 Jun 2003 14:35:26 GMT
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Good afternoon, everyone. I'm having some problems using Curvefit (in IDL 5.4) to fit my data. I've reviewed the messages which have already been posted on this subject, and had a good look at the MPCURVEFIT substitute, but am no wiser.

My code looks like this:

```
PRO data_fit

;Define the vectors of tabulated:

F18_x = FLTARR(12) & F18_x(0) = 9.055227833
F18_x(1) = 9.908886278 & F18_x(2) = 11.86860889
F18_x(3) = 13.281685 & F18_x(4) = 16.69834393
F18_x(5) = 19.52864256 & F18_x(6) = 23.17273836
F18_x(7) = 28.51793219 & F18_x(8) = 31.23624055
F18_x(9) = 33.53401408 & F18_x(10) = 38.12262897
F18_x(11) = 39.15701348
F18_y = FLTARR(12) & F18_y(0) = 0.108598707
F18_y(1) = 0.329883541 & F18_y(2) = 0.504690343
F18_y(3) = 0.685805013 & F18_y(4) = 0.780161321
F18_y(5) = 0.87284238 & F18_y(6) = 0.890067419
F18_y(7) = 0.907523914 & F18_y(8) = 0.98011631
F18_y(9) = 0.943832957 & F18_y(10) = 0.966238284
F18_y(11) = 1

X = FLTARR(12) & X(*) = F18_x(*) - F18_x(0)
Y = FLTARR(12) & Y(*) = F18_y(*) - F18_x(0)

;Define a vector of weights:
W = 1.0
;Provide an initial guess of the function's parameters:
A = [1.0, 1.0]
;Compute the parameters a0 and a1:
yfit = CURVEFIT(X, Y, W, A, SIGMA_A, FUNCTION_NAME = 'fit_funct')
;Print the parameters, which are returned in A:
PRINT, A

END

PRO fit_funct, X, A, F, PDER

  F = (1.0 - EXP(-A[0] * X)) + (1.0 - EXP(-A[1]*X))
  ; PDER's column dimension is equal to the number of
```

```
   ; elements in xi and its row dimension is equal to
   ; the number of parameters in the function F:
   pder = FLTARR(N_ELEMENTS(X), 2)
   ; Compute the partial derivatives with respect to
   ; a0 and place in the first row of PDER:
 pder[*, 0] = A[0] * EXP(-A[0] * X)
 pder[*, 1] = A[1] * EXP(-A[1] * X)

END
```

Which looks alright, if not particularly elegant, to me. However, when I run it, I get this error message (which relates to the line beginning y_fit =) :

```
% Operands of matrix multiply have incompatible dimensions: <FLOAT
Array[2, 12]>, <FLOAT     Array[1, 2]>.
% Error occurred at:  CURVEFIT         269
O:\Rsi\Idl54\lib\curvefit.pro
%                DATA_FIT         21 H:\PhD
IDL\Progs\data_fit.pro
%                $MAIN$
```

How do I avoid this error and get the fit to work?

Thanks for your help,
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