Subject: Re: least square error for a regression
Posted by Kenneth P. Bowman on Thu, 16 Sep 2004 00:25:32 GMT

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In article <ciafmg$al3$1@sunburst.ccs.yorku.ca>,
 "yaj" <tgupta2000@hotmail.com> wrote:

> Hello,
> I am fitting a function of the form
> ASin(wt + theta) + constant to a set of points. Instead of a readymade
> fitting routine from IDL (to avoid any potential problems with small numbers
> later), I use the three linear equations to minimize the least square error,
> then use an IDL function to solve the matrix equation. Could someone suggest
> a simple way to calculate the least squares error and goodness of fit using
> some higher level IDL functions ?
> Thanks in advance
> Y. Bhattacharya
> yajnaval_at-hotmail
>
>

I think you want something like this:

```
n   = 32
eps = 0.1D0
x   = DINDGEN(n)/n
y   = COS(2.0D0*!DPI*x - !DPI/4) + eps*RANDOMN(seed, n, /DOUBLE)

c   = COS(2.0*!PI*x)
s   = SIN(2.0*!PI*x)
f   = TRANSPOSE([[c], [s]])

coeff = REGRESS(f, y, CONST = a0, YFIT = yfit, CHISQ = chisq, FTEST =
ftest, /DOUBLE)

a   = coeff[0]
b   = coeff[1]
amp = SQRT(a^2 + b^2)
phz = ATAN(b, a)

PRINT, a0, a, b, amp, phz, chisq, ftest

PLOT, x, y
OPLOT, x, yfit
```

Regards, Ken Bowman