Subject: Re: Least Square
Posted by J.D. Smith on Thu, 07 Aug 1997 07:00:00 GMT
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R.J. Hall wrote:
>
> Dear all,
>
> I was windering if the following can be solced using IDL (V4)
>
> Data:- Change in voltage against time
>
> Result:- Sinusoidal wave
>
> Is it possible to find the line of best fit, and thus derive its
> equation using IDL?
>
> The form of the equation is as follows:-
>
> y = a * sin (b*x + c)
>
> Many thanks in advance
>
> Richard

You can use curvefit() as follows

Result = CURVEFIT(time, voltage, Weights, A, FUNCTION_NAME='sinfunc')

Weights can be replicate(1.0,n_elements(time)) if there is no
weighting.
A is a vector of your parameters ... A=[a,b,c], set to an initial guess.
and sinfunc must be a function as follows:

```
function sinfunc,time, A, funcval, pder
 s=sin(A[1]*time+A[2])
 funcval=A[0]*s
 IF N_PARAMS() GE 4 THEN BEGIN
  cfac=funcval*cos(A[1]*time+A[2])
  pder=[s,time*cfac, cfac]
 ENDIF
end
```

Subject: Re: Least Square
Posted by John Lawrence on Fri, 08 Aug 1997 07:00:00 GMT
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R.J. Hall wrote:
+> I was windering if the following can be solced using IDL (V4)

+> Is it possible to find the line of best fit, and thus derive its
=>equation using IDL?
=>
+> The form of the equation is as follows:-
+> y = a * sin (b*x + c)

If you do the algebra on paper, IDL can do the arithmetic.
It is a large number of summations, and then a matrix inversion.
Actually, I used to do it in Excel. IDL is heaps easier.

- ;-} --- :-{ --- ;-} --- :-{ --- ;-} -
The fundamental particle of stupidity is called the Bozon.
