Subject: Re: Like SPLINE but does not go through all points
Posted by greg michael on Tue, 26 Sep 2006 16:16:32 GMT
View Forum Message <> Reply to Message

Take a look at CURVEFIT. You'll need some kind of model function with
free parameters - a polynomial, perhaps.

Greg

Dilkushi@gmail.com wrote:
> Dear all
> I need to plot a smooth line to go through the plotted points but not
> through all of them.. as they are noisy and we need aline through the
> good points to see trends
> Please help
> Thanks
> dilkushi

Subject: Re: Like SPLINE but does not go through all points
Posted by Paul Van Delst[1] on Tue, 26 Sep 2006 16:17:02 GMT
View Forum Message <> Reply to Message

Dilkushi@gmail.com wrote:
> Dear all
> I need to plot a smooth line to go through the plotted points but not
> through all of them.. as they are noisy and we need aline through the
> good points to see trends

A straight line? Try LINFIT ... or any of the other myriad line/curve fitters in IDL.
Links on the IDL help page for LINFIT have the:

<quote>
See Also
COMFIT, CURVEFIT, GAUSSFIT, LADFIT, LMFIT, POLY_FIT, REGRESS, SFIT, SVDFIT
</quote>

And there's Craig Markwardt's MPFIT too.

Or, given an x and y array of n points you could do the following:

```
xAverage = MEAN( x )
yAverage = MEAN( y )
sum_dx2 = TOTAL( ( x - xAverage )^2 )
b = TOTAL( ( x - xAverage ) * ( y - yAverage ) ) / sum_dx2
a = yAverage - ( b * xAverage )
yCalculated = a + ( b * x )
```

with some fit stats:
    Residual_Sum_of_Squares = TOTAL((y - yCalculated)^2)
    Residual_Mean_Square   = Residual_Sum_of_Squares / FLOAT(n-2)

but the IDL routines have more options (and are probably faster, etc).

paulv

--
Paul van Delst   Ride lots.
CIMSS @ NOAA/NCEP/EMC   Eddy Merckx
Ph: (301)763-8000 x7748
Fax:(301)763-8545

Subject: Re: Like SPLINE but does not go through all points
Posted by btt on Tue, 26 Sep 2006 21:28:28 GMT
View Forum Message <> Reply to Message

Dilkushi@gmail.com wrote:
> Dear all
> I need to plot a smooth line to go through the plotted points but not
> through all of them.. as they are noisy and we need aline through the
> good points to see trends

If all you require is a pretty picture, then maybe you want the NSUM
keyword for PLOT and OPLOT.

Cheers,
Ben
