
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
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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 a line 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

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Paul van Delst Ride lots.
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