
Subject: cubic spline fitting

Posted by iansmith@bigpond.net on Fri, 14 Nov 2014 02:18:33 GMT

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I am trying to use the IDL routines

spl_init and spl_interp

to do a cubic spline fit to variables that are vectors with 45 elements.

ie y is not a function of x.

I am getting 2 compilation errors where it seems to be objecting to using a vector for y instead of y being a function of x.

```
IDL> .compile -v 'C:\lan_Plots\complines 27102014 FYZ Clumps SiO 2-1 and 5-4 Peak Tbs dV30.pro'
```

```
% Compiled module: LOAD_MOLDATA.
```

```
spl_init,(x_nH_5,y_Tb13N_5,double)
      ^
```

```
% Syntax error.
```

```
At: C:\lan_Plots\complines 27102014 FYZ Clumps SiO 2-1 and 5-4 Peak Tbs dV30.pro, Line 476
```

```
spl_interp,(x_nH_5,y_Tb13N_5,x2_nH_5,y2_13N_5,double)
      ^
```

```
% Syntax error.
```

```
At: C:\lan_Plots\complines 27102014 FYZ Clumps SiO 2-1 and 5-4 Peak Tbs dV30.pro, Line 481
```

```
% 2 Compilation error(s) in module $MAIN$.
```

Is my diagnosis correct?

Is there a way around this problem ?

I would appreciate some help.

Regards

Ian Smith

Dept of Science and Engineering
Macquarie University

Subject: Re: cubic spline fitting

Posted by [wlandsman](#) on Fri, 14 Nov 2014 02:50:57 GMT

The documentation gives an example of how to call `spl_init` and `spl_interp`

```
X = (FINDGEN(21)/20.0) * 2.0 * !PI
Y = SIN(X)
; Calculate interpolating cubic spline:
Y2 = SPL_INIT(X, Y)
; Define the X values P at which we desire interpolated Y values:
X2= FINDGEN(11)/11.0 * !PI
; Calculate the interpolated Y values corresponding to X2[i]:
result = SPL_INTERP(X, Y, Y2, X2)
PRINT, result
```

Note that

- (1) there is no comma prior to the parentheses
- (2) one must set the output equal to a variable e.g. `Y = SPL_INTERP(X,Y,Y2,X2)`

The confusion may be due to the fact that IDL has both procedure calls and function calls, with quite different syntax.

On Thursday, November 13, 2014 9:18:36 PM UTC-5, ian....@mq.edu.au wrote:

```
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>
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>
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476
>
> spl_interp,(x_nH_5,y_Tb13N_5,x2_nH_5,y2_13N_5,double)
>      ^
> % Syntax error.
> At: C:\lan_Plots\complines 27102014 FYZ Clumps SiO 2-1 and 5-4 Peak Tbs dV30.pro, Line
481
> % 2 Compilation error(s) in module $MAIN$.
```

>

Subject: Re: cubic spline fitting

Posted by iansmith@bigpond.net on Wed, 19 Nov 2014 04:22:13 GMT

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Thank you for your help. I can report that your suggested approach works even where the Y variable in the SPL_INIT procedure is an array of discrete values and not a function of X

On Friday, November 14, 2014 1:51:01 PM UTC+11, wlandsman wrote:

> The documentation gives an example of how to call spl_init and spl_interp

>

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>

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>> IDL> .compile -v 'C:\Ian_Plots\complines 27102014 FYZ Clumps SiO 2-1 and 5-4 Peak Tbs dV30.pro'

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>> % Compiled module: LOAD_MOLDATA.
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