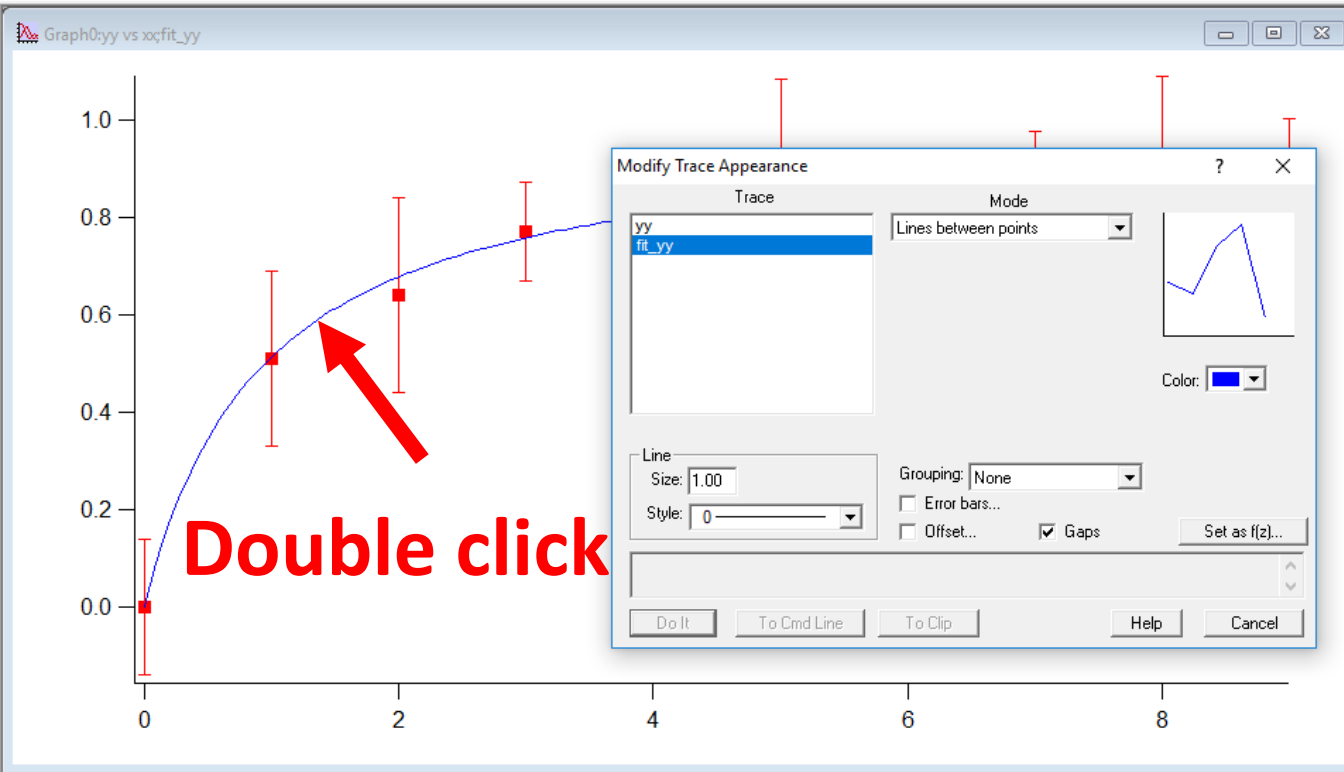


Making figures using Igor

To modify the appearance of any trace (data) in a figure, just double click on the trace. The menu that appears is called Modify Trace Appearance.

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File Edit Data Analysis Macros Windows Graph Misc Help



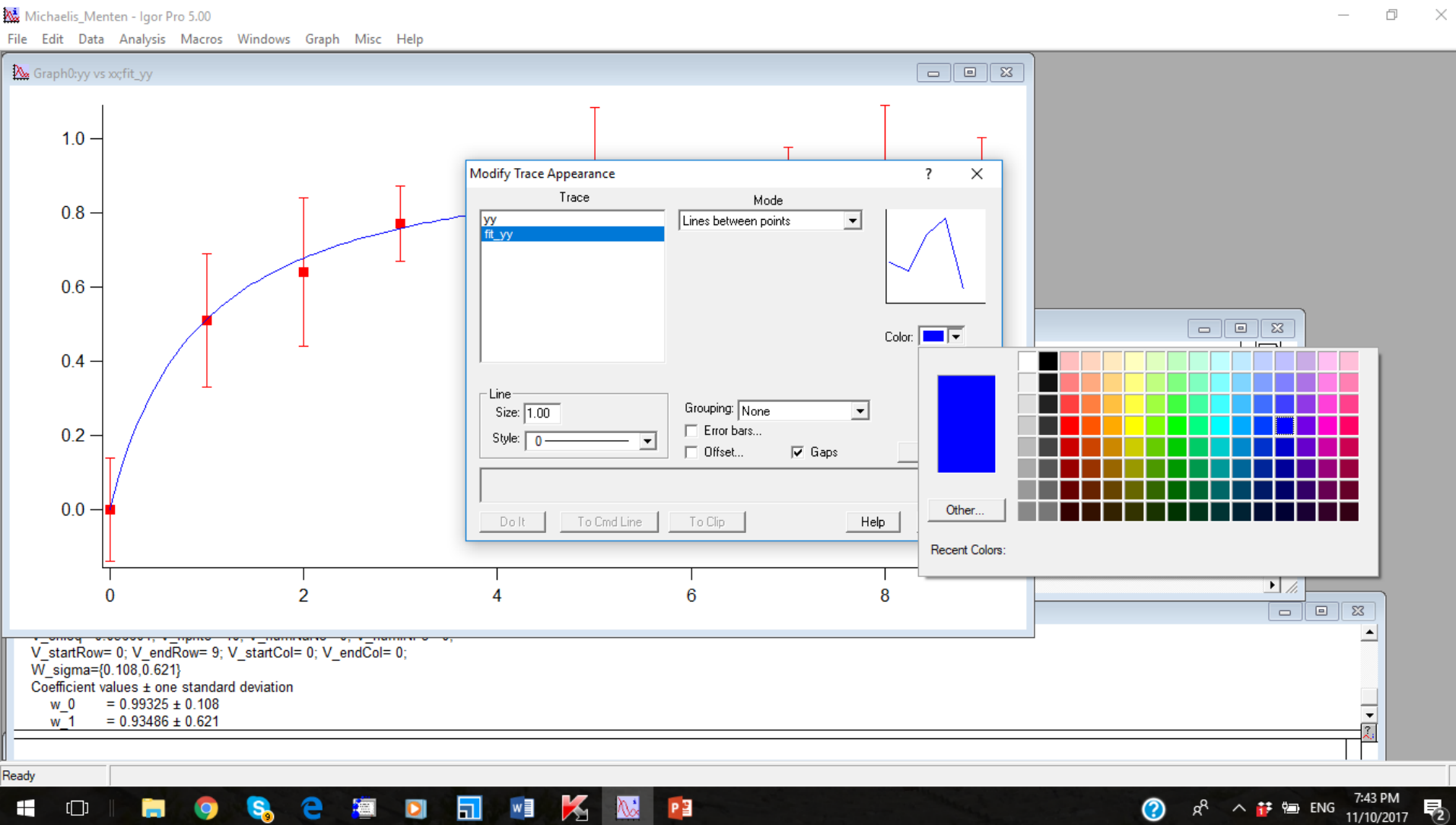
V_startRow= 0; V_endRow= 9; V_startCol= 0; V_endCol= 0;
W_sigma={0.108,0.621}
Coefficient values ± one standard deviation
w_0 = 0.99325 ± 0.108
w_1 = 0.93486 ± 0.621

You can change the color, thickness and even the Style of the line.

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File Edit Data Analysis Macros Windows Graph Misc Help

Graph0:yy vs xcfit_yy



Modify Trace Appearance

Trace: yy, fit_yy

Mode: Lines between points

Color: Blue

Line: Size: 1.00, Style: 0

Grouping: None

Error bars... Offset... Gaps

Do It To Cmd Line To Clip Help

Recent Colors:

V_startRow= 0; V_endRow= 9; V_startCol= 0; V_endCol= 0;
W_sigma={0.108,0.621}

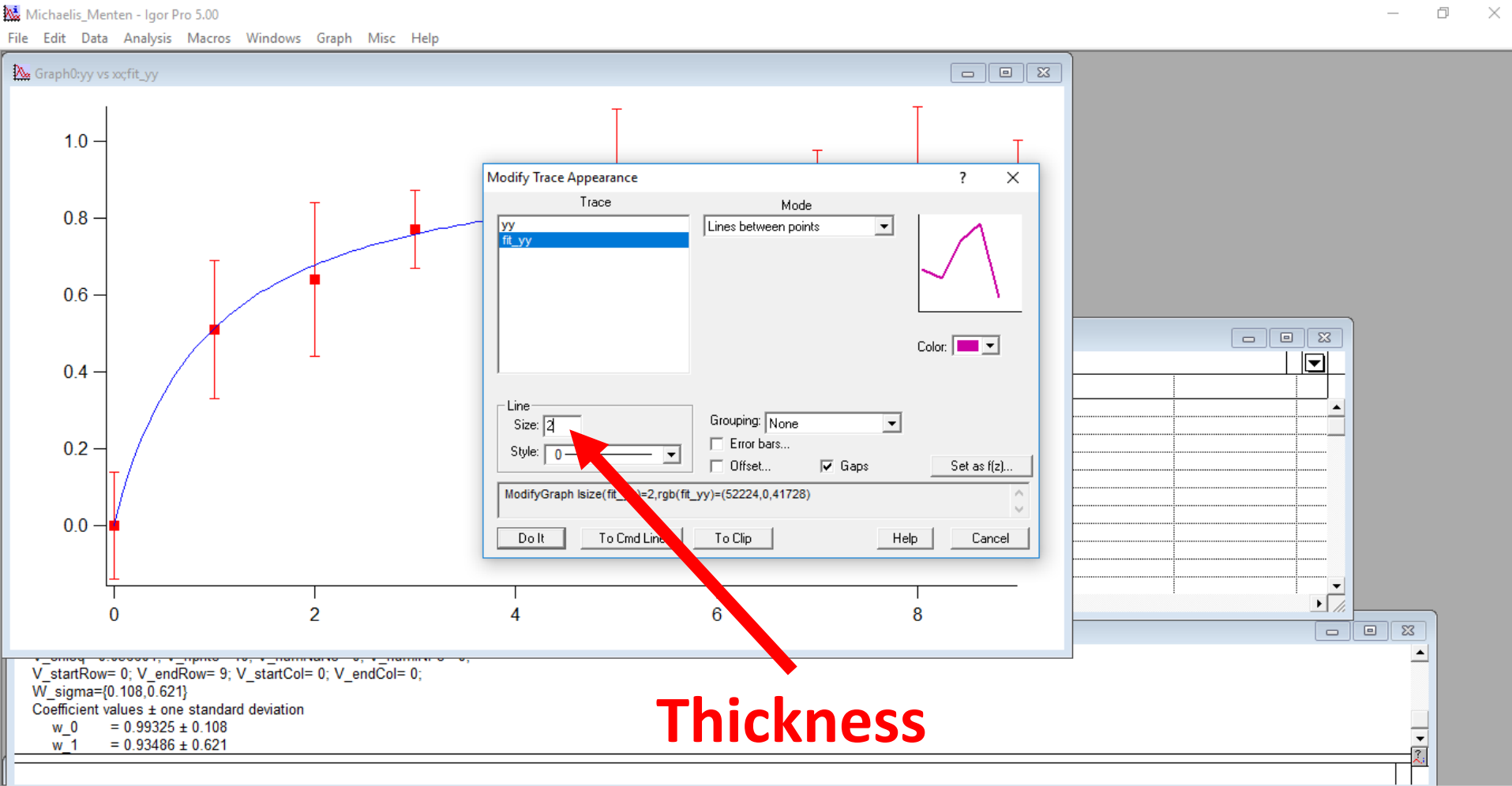
Coefficient values \pm one standard deviation

w_0 = 0.99325 \pm 0.108
w_1 = 0.93486 \pm 0.621

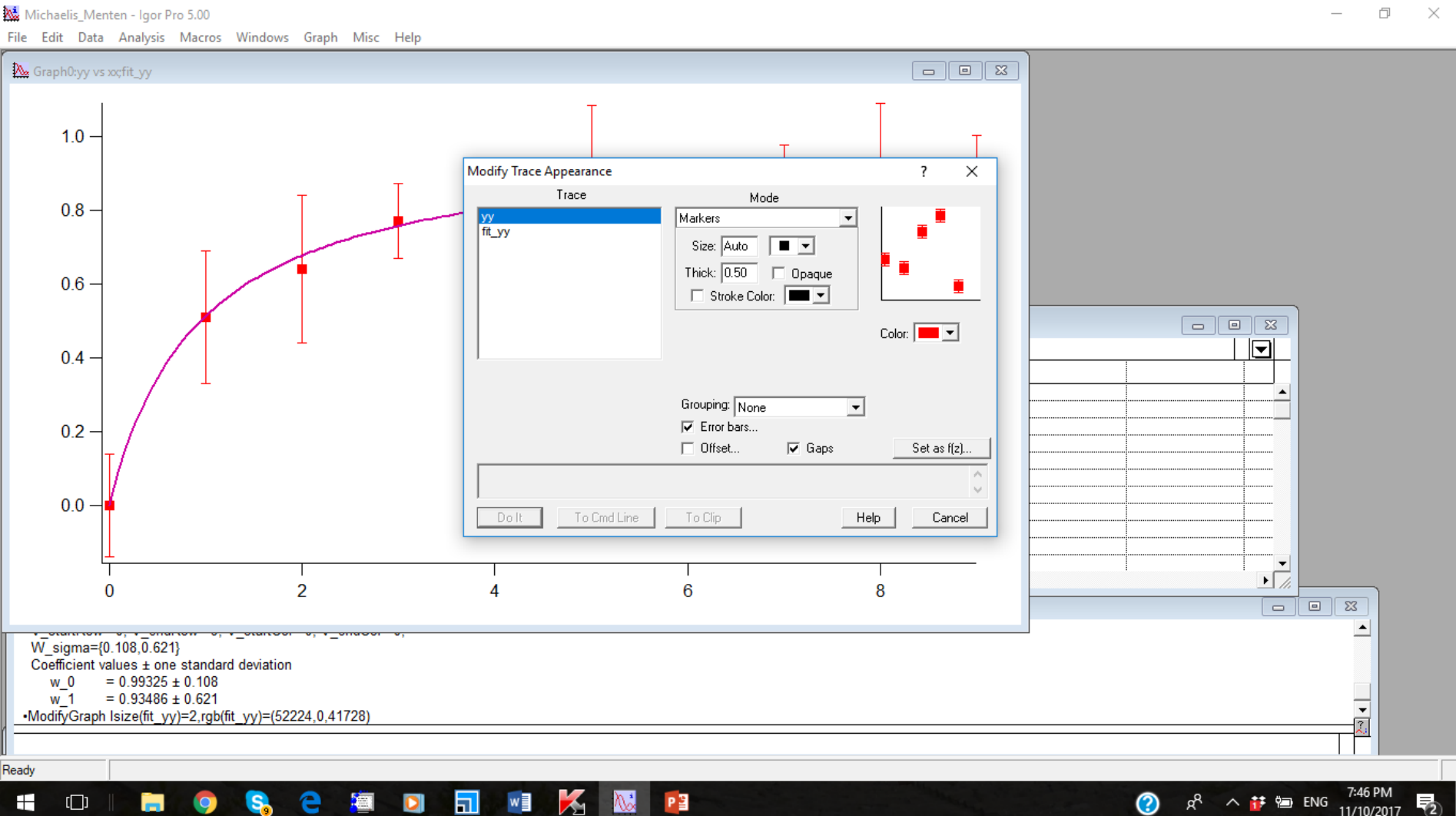
Ready

7:43 PM 11/10/2017

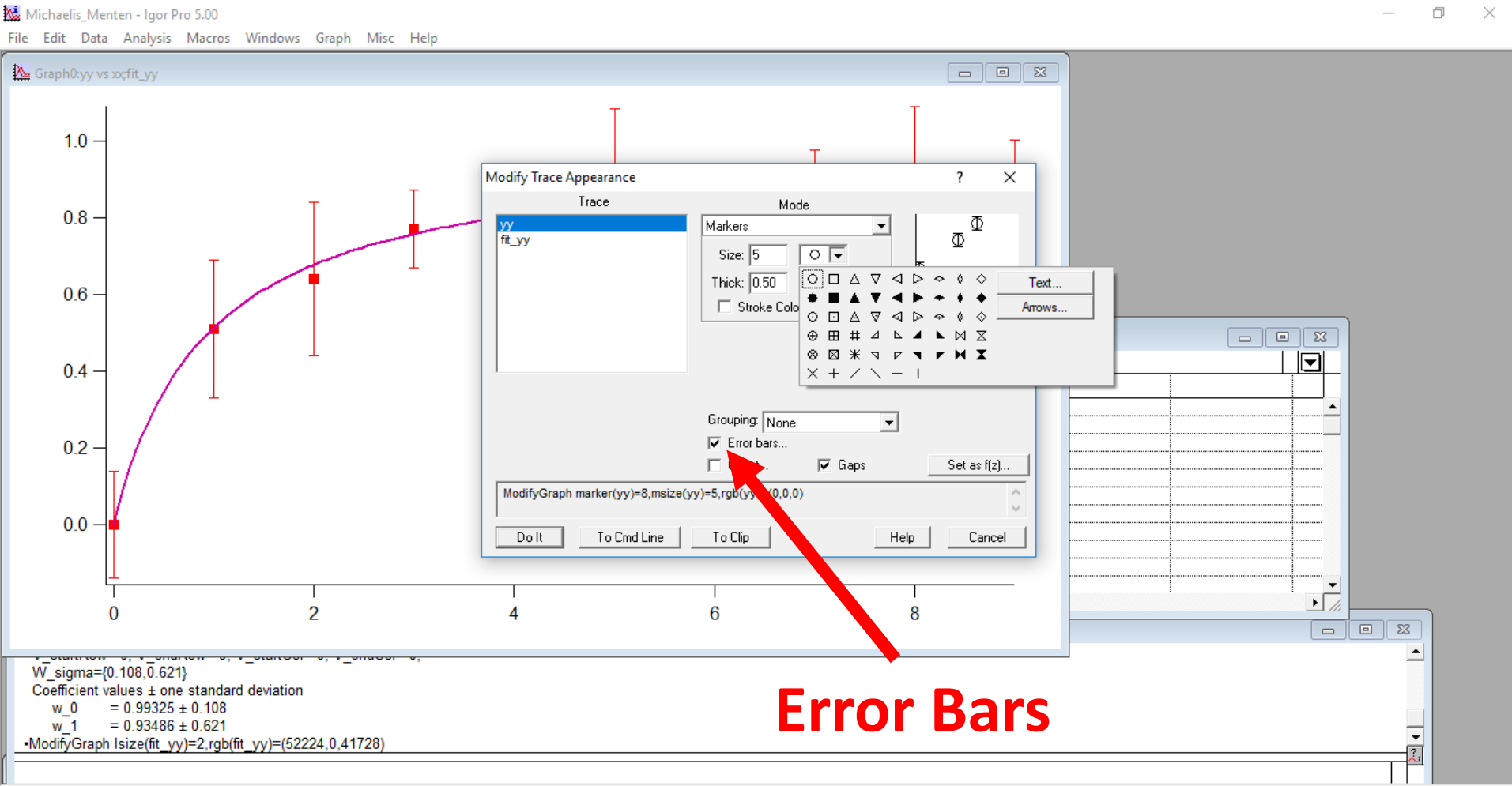
Here we will make the fitted curve thicker (2) and color it purple. Then click Do It.



Next we click on one of the data points. We can change the color and the type of marker.

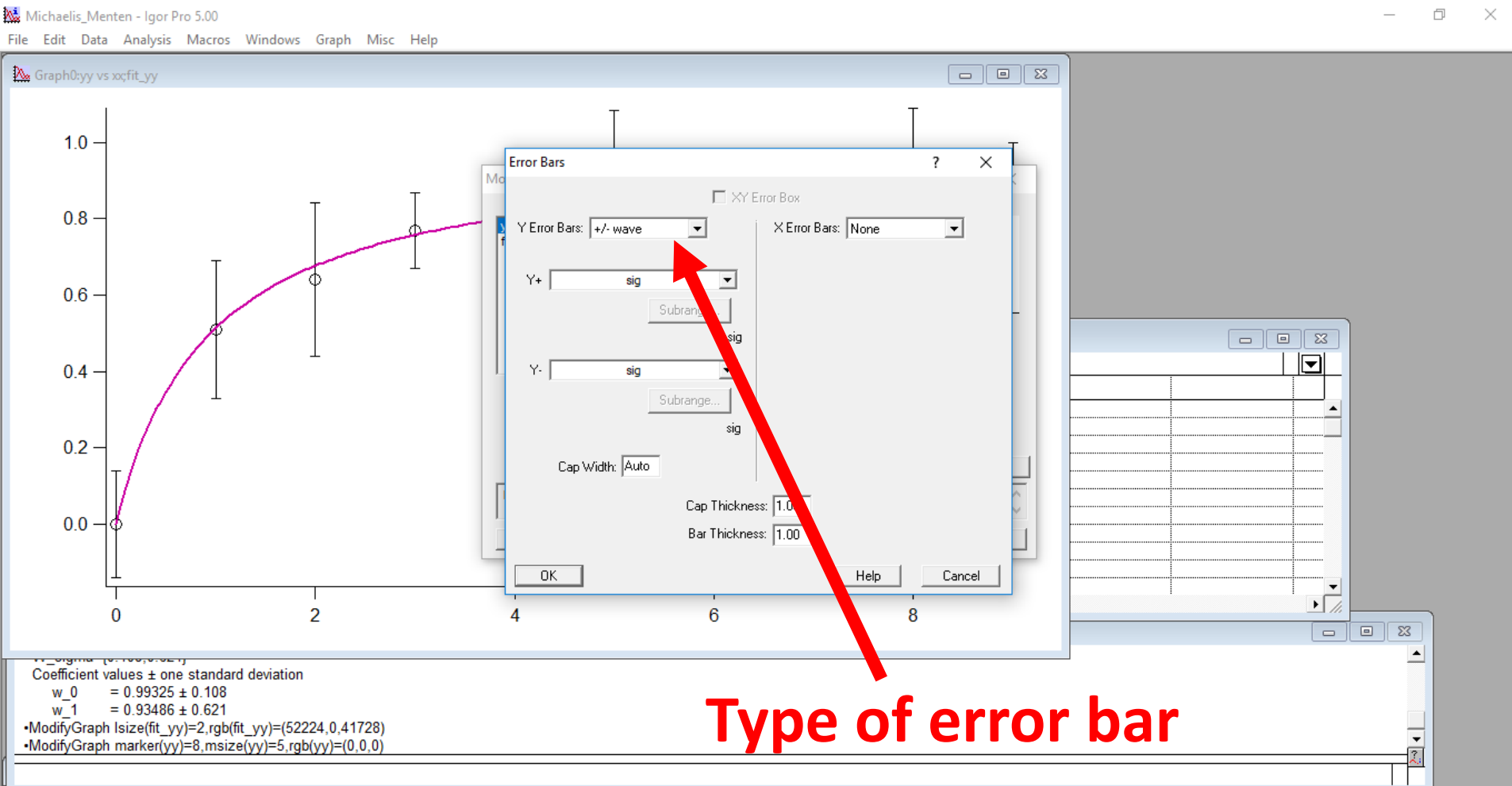


Here we changed the color to black (as before) and The size to 5. You can see the menu selections for Style of Marker. We selected open circle. Then Do It.

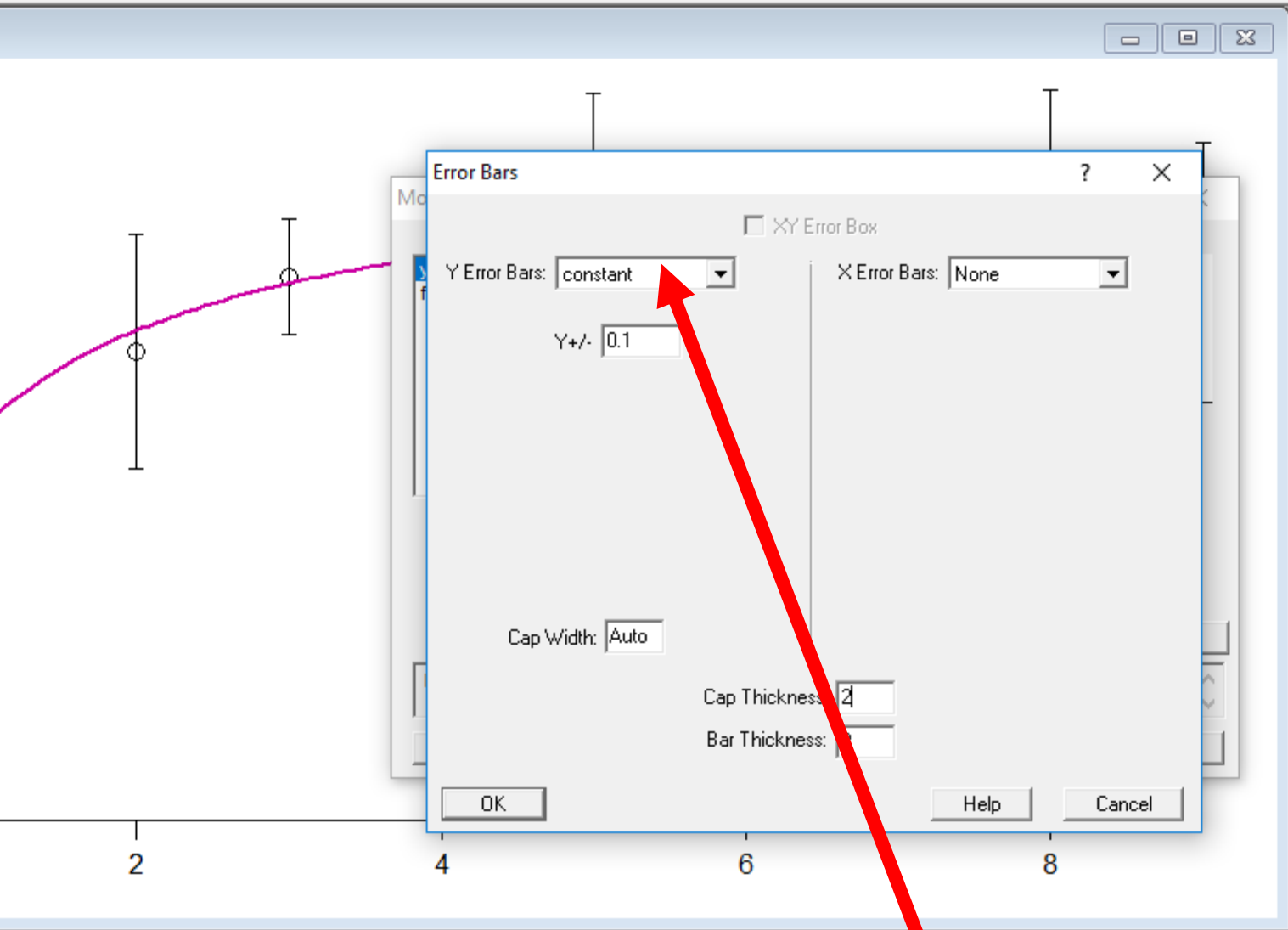


Error Bars

We click on the error bar box (see previous slide) and the Error Bar menu appears.



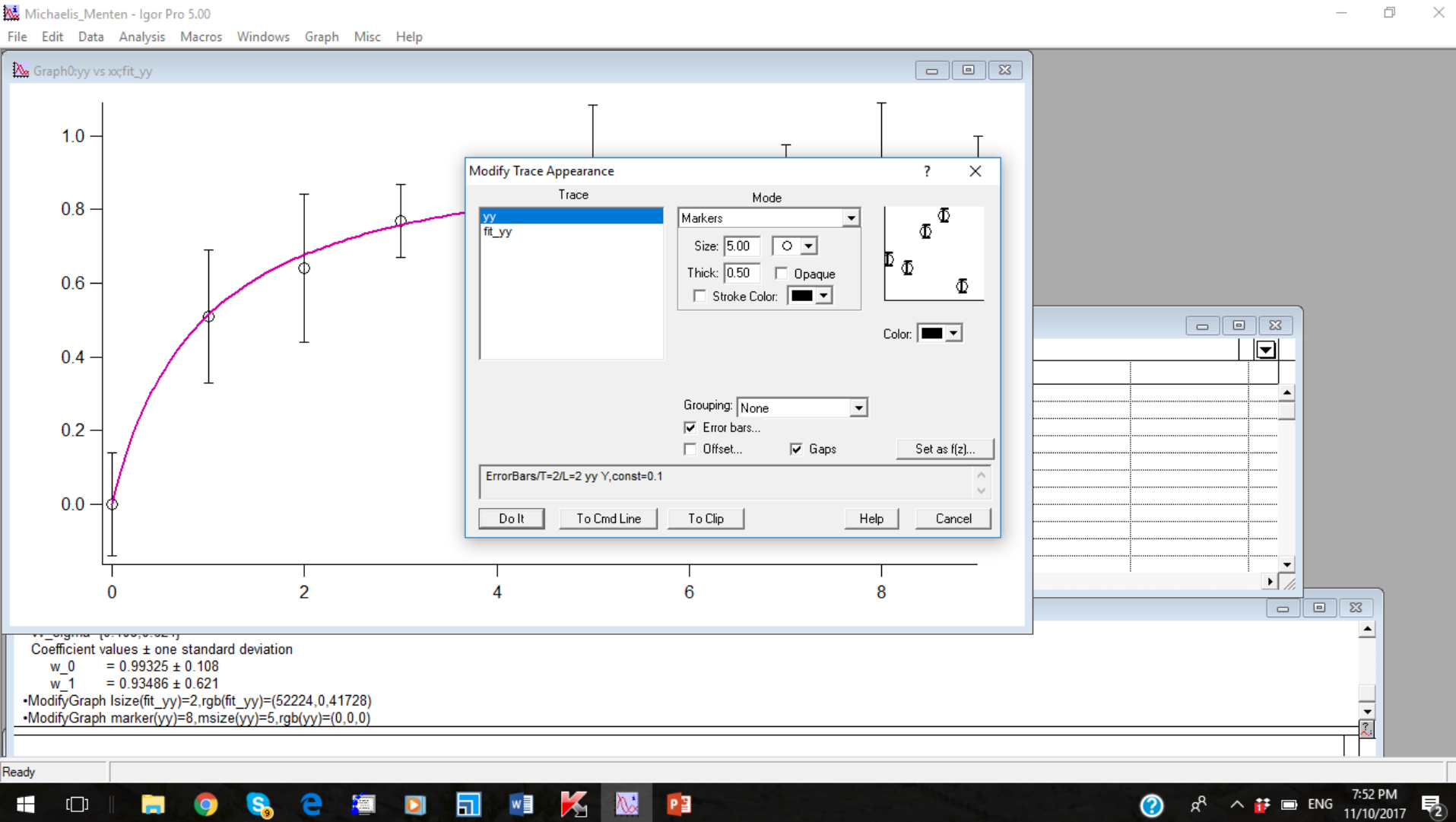
Type of error bar



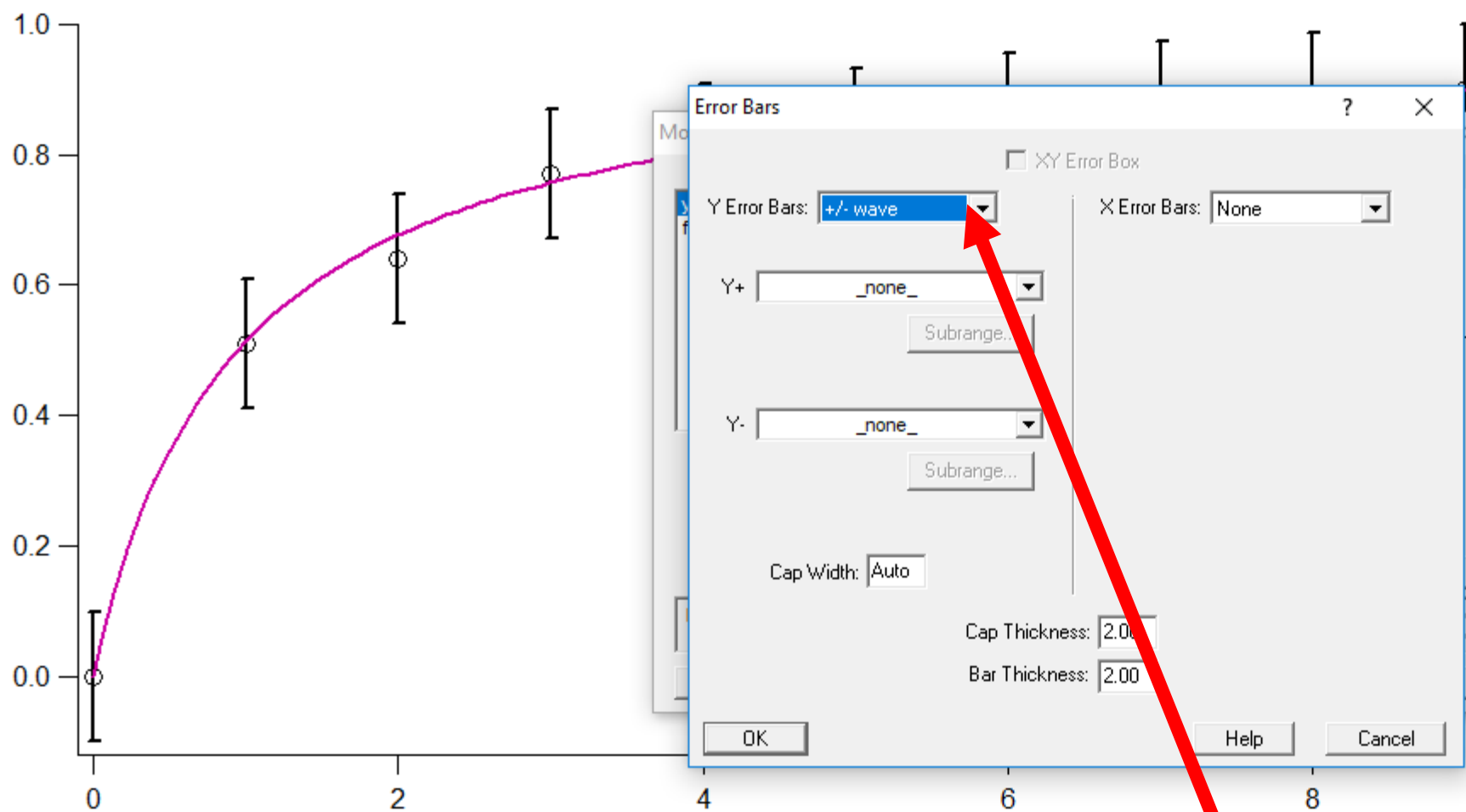
Constant assumes all errors are the same

(fit_yy)=(52224,0,41728)
size(yy)=5,rgb(yy)=(0,0,0)

Now it is all set up. Click Do It. Look on the next slide to see how we can change it back to individual errors using a file. The error wave is called "sig".



Graph0:yy vs xx;fit_yy

Component values \pm one standard deviation:w_0 = 0.99325 \pm 0.108w_1 = 0.93486 \pm 0.621

•ModifyGraph lsize(fit_yy)=2,rgb(fit_yy)=(52224,0,41728)

•ModifyGraph marker(yy)=8,msize(yy)=5,rgb(yy)=(0,0,0)

•ErrorBars/T=2/L=2 yy Y,const=0.1

Select +/- wave

Note that we have to make the error wave. Using the experimental data enter the errors and give the data file (wave) a name. I called it sig. Then Do It.

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File Edit Data Analysis Macros Windows Graph Misc Help

Graph0:yy vs xxfit_yy

Error Bars

XY Error Box

Y Error Bars: +/- wave

X Error Bars: None

Y+ sig

Subrange...

sig

Y- _none_

root

fit_yy

sig

xx

yy

Thickness: 2.00

Thickness: 2.00

OK Help Cancel

Document Values ± One Standard Deviation

w_0 = 0.99325 ± 0.108

w_1 = 0.93486 ± 0.621

- ModifyGraph lsize(fit_yy)=2,rgb(fit_yy)=(52224,0,41728)
- ModifyGraph marker(yy)=8,msize(yy)=5,rgb(yy)=(0,0,0)
- ErrorBars/T=2/L=2 yy Y.const=0.1

Ready

7:58 PM 11/10/2017

If you click on the plot boundary (i.e. the lines defining the x and y axis) you will see the Modify Axis menu. You can change many things here.

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File Edit Data Analysis Macros Windows Graph Misc Help

Graph0:yy vs xx;fit_yy

Modify Axis

Axis: bottom Live Update

Axis | Auto/Man Ticks | Ticks and Grids | Tick Options | **Axis Label** | Label Options | Axis Range

Insert:

- Font
- Font Size
- Units
- Special

Trial Exponent

- Zero
- Six

Axis label:

Label Preview

$x10^6$

Do It | To Cmd Line | To Clip | Help | Cancel

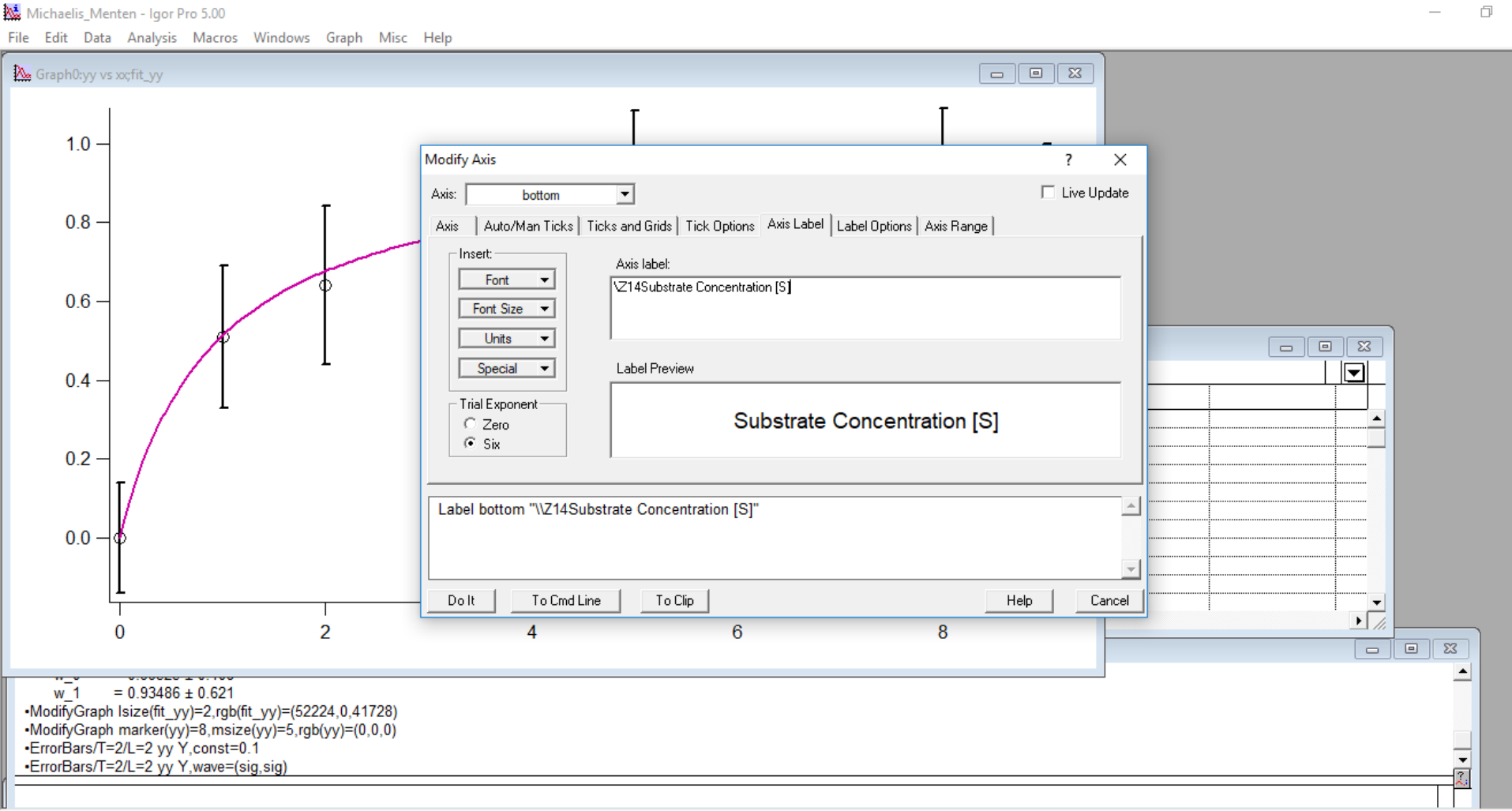
w_1 = 0.93486 ± 0.621

- ModifyGraph lsize(fit_yy)=2,rgb(fit_yy)=(52224,0,41728)
- ModifyGraph marker(yy)=8,msize(yy)=5,rgb(yy)=(0,0,0)
- ErrorBars/T=2/L=2 yy Y.const=0.1
- ErrorBars/T=2/L=2 yy Y.wave=(sig,sig)

Ready

11/10/2017 7:59 PM

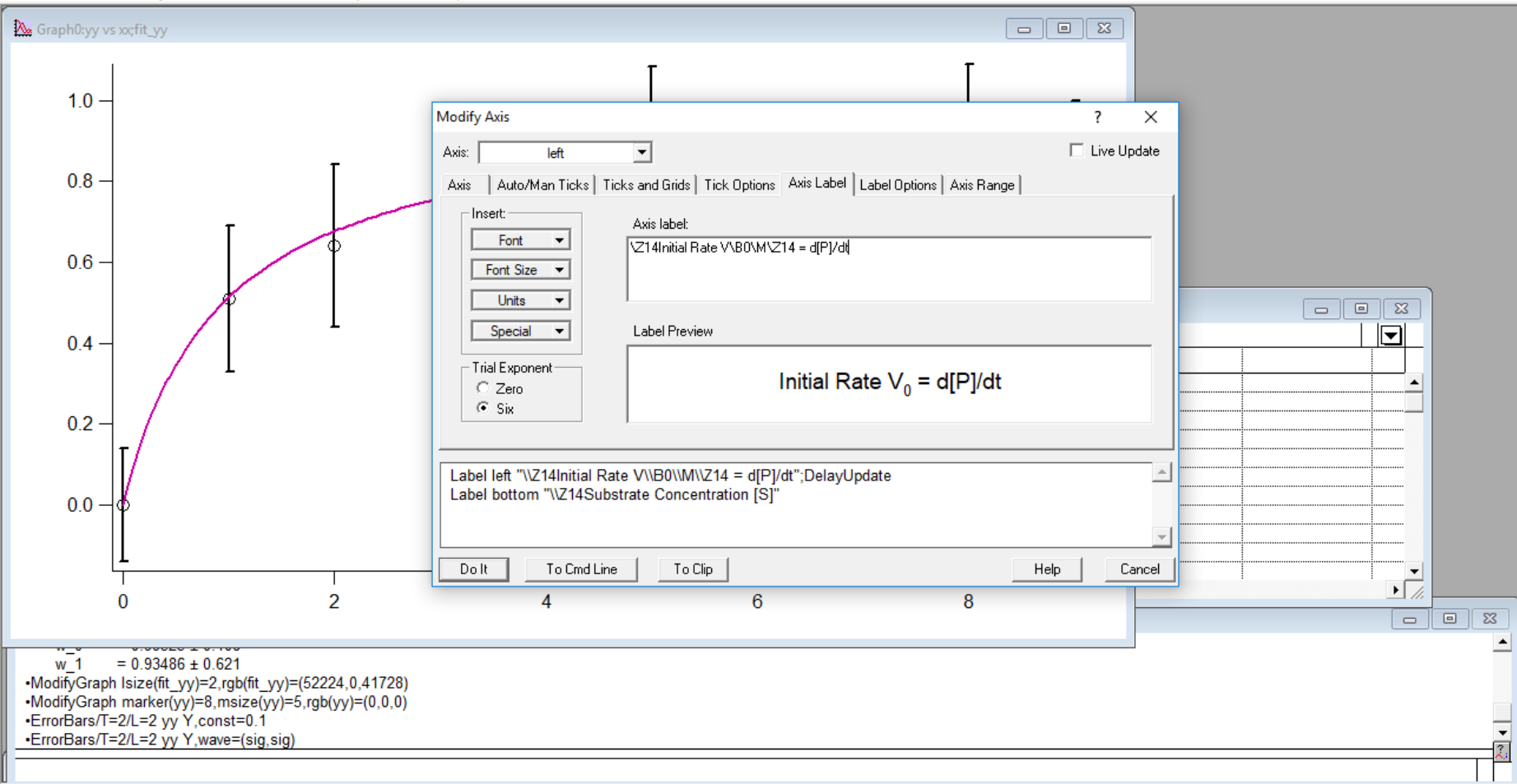
To put in a label you can type the information into the Axis Label window. Note that the Inserts are on the left for Font Size etc.



You can also type $\backslash Z14$ for size 14 font. Then $\backslash B$ for subscript and $\backslash M$ for return to normal and then $\backslash Z14$ again to make sure that the font is size 14.

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File Edit Data Analysis Macros Windows Graph Misc Help

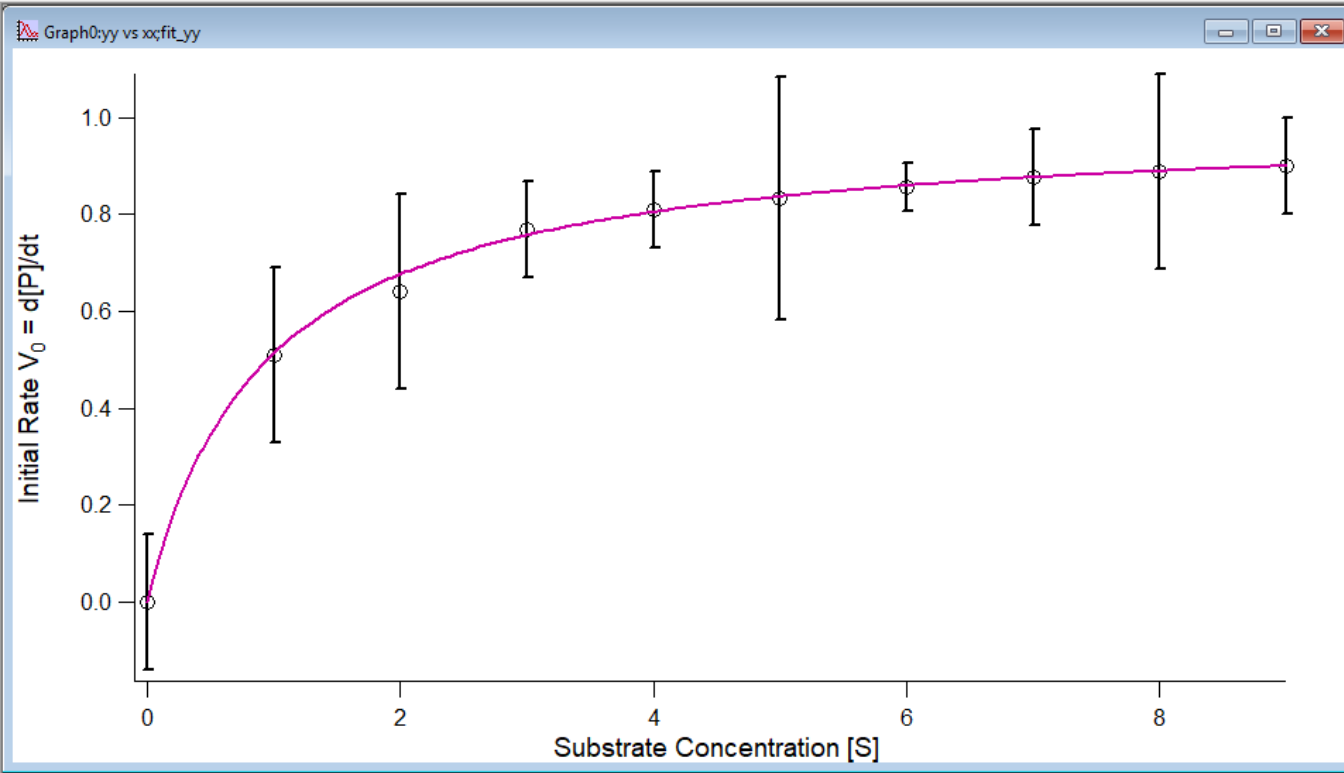


Ready

Do It. Now you see what the labels look like. You can learn the syntax using the Insert buttons. For example, \S is superscript.

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File Edit Data Analysis Macros Windows Graph Misc Help



```
ModifyGraph marker(yy)=8,msize(yy)=5,rgb(yy)=(0,0,0)  
•ErrorBars/T=2/L=2 yy Y,const=0.1  
•ErrorBars/T=2/L=2 yy Y,wave=(sig,sig)  
•Label left "\14Initial Rate V\B0\14 = d[P]/dt";DelayUpdate  
•Label bottom "\14Substrate Concentration [S]"
```

Ready

Now the Axis numbers look a bit small. Let's change Those to size 14 font as well. We click on the axis (anywhere) and get the menu back. Select Axis.

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File Edit Data Analysis Macros Windows Graph Misc Help

Graph0:yy vs xx:fit_yy

Initial Rate $V_0 = d[P]/dt$

Substrate Concentration [S]

Modify Axis

Axis: bottom

Axis

Font

Size: 14

Axis tab

Font size

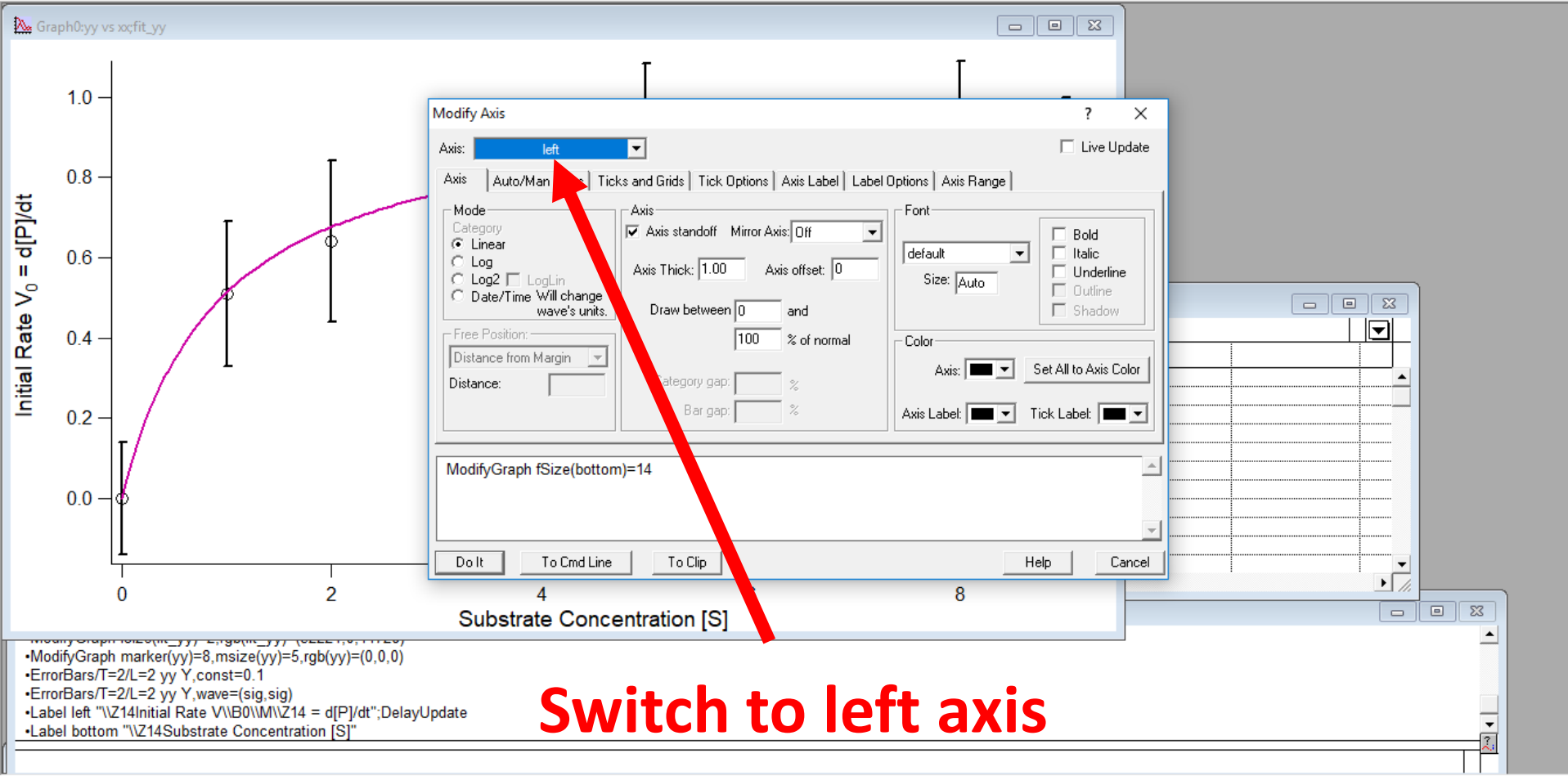
ModifyGraph fSize(bottom)=14

- ModifyGraph marker(yy)=8,msize(yy)=5,rgb(yy)=(0,0,0)
- ErrorBars/T=2/L=2 yy Y,const=0.1
- ErrorBars/T=2/L=2 yy Y,wave=(sig,sig)
- Label left "\Z14Initial Rate V\B0\W\Z14 = d[P]/dt";DelayUpdate
- Label bottom "\Z14Substrate Concentration [S]"

Now change from the bottom axis to the left axis.

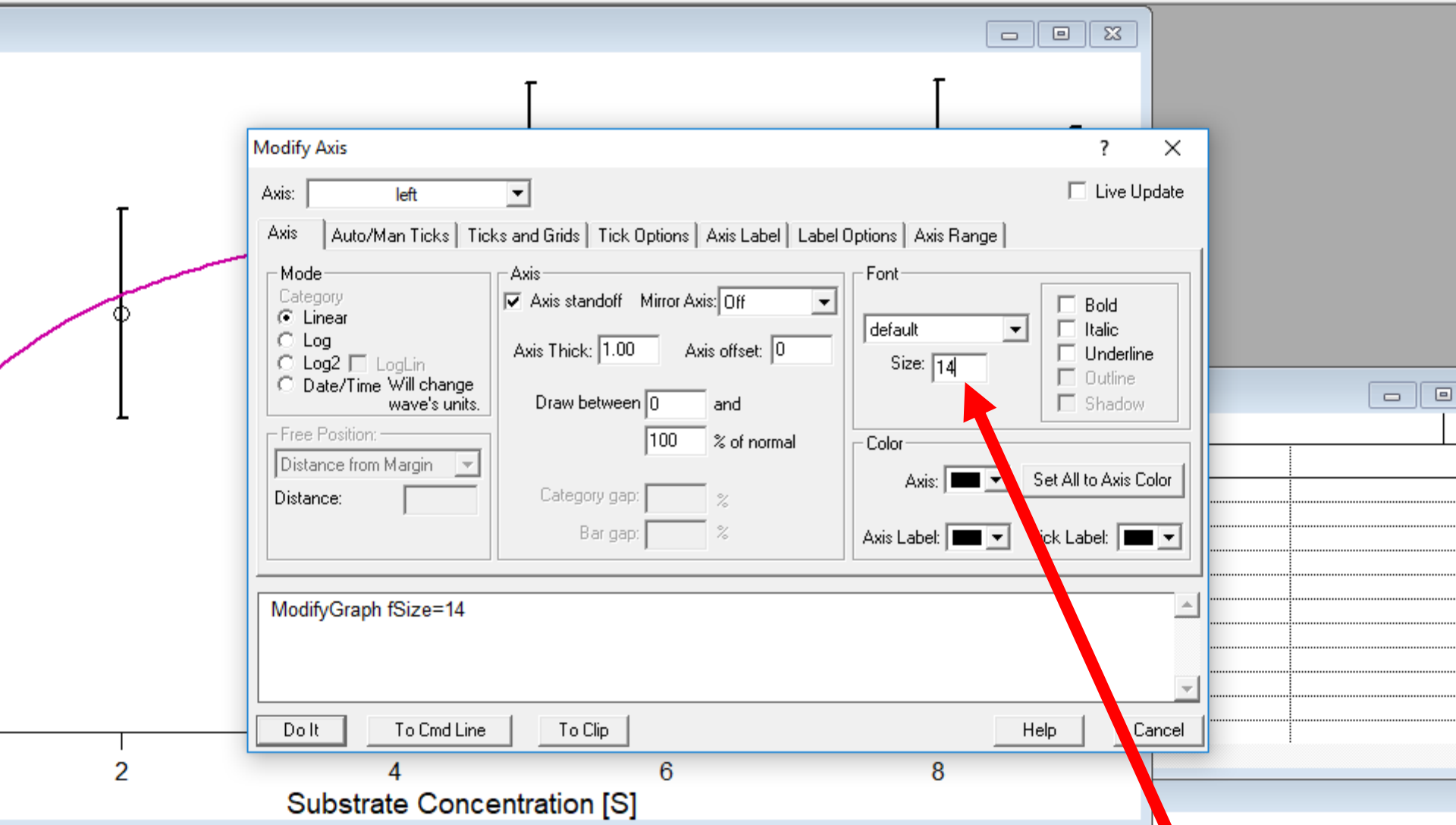
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File Edit Data Analysis Macros Windows Graph Misc Help



Switch to left axis

Ready



Modify Axis [?] [X]

Axis: Live Update

Axis | Auto/Man Ticks | Ticks and Grids | Tick Options | Axis Label | Label Options | Axis Range

Mode
Category
 Linear
 Log
 Log2 LogLin
 Date/Time Will change wave's units.

Free Position:

Distance:

Axis
 Axis standoff Mirror Axis:
Axis Thick: Axis offset:
Draw between and % of normal
Category gap: %
Bar gap: %

Font

Size:
 Bold
 Italic
 Underline
 Outline
 Shadow

Color
Axis: Set All to Axis Color
Axis Label: Tick Label:

ModifyGraph fSize=14

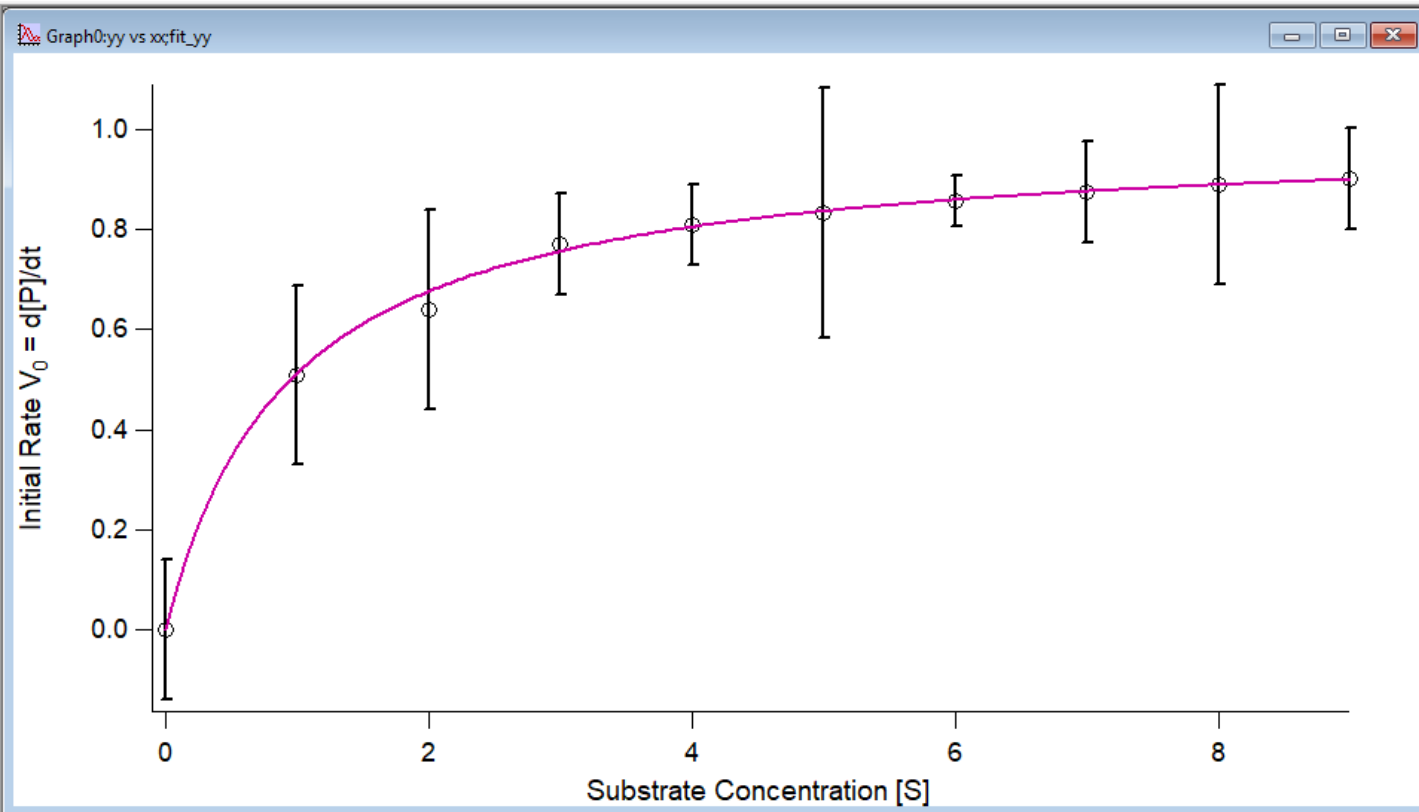
Enter number 14 for the font

```
(m_yy) (0,0,0,1,1,2)  
size(yy)=5,rgb(yy)=(0,0,0)  
=0.1  
(sig,sig)  
30\\M\\Z14 = d[P]/dt";DelayUpdate  
Concentration [S]"
```

After clicking Do It you see a graph that has size 14 font. The default is size 12. Even larger font can be good for small figures.

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File Edit Data Analysis Macros Windows Graph Misc Help



```
ModifyGraph name(y) color(y) size(y) (14)
•ErrorBars/T=2/L=2 yy Y,const=0.1
•ErrorBars/T=2/L=2 yy Y,wave=(sig,sig)
•Label left "\Z14Initial Rate V\B0\M\Z14 = d[P]/dt";DelayUpdate
•Label bottom "\Z14Substrate Concentration [S]"
•ModifyGraph fSize=14
```

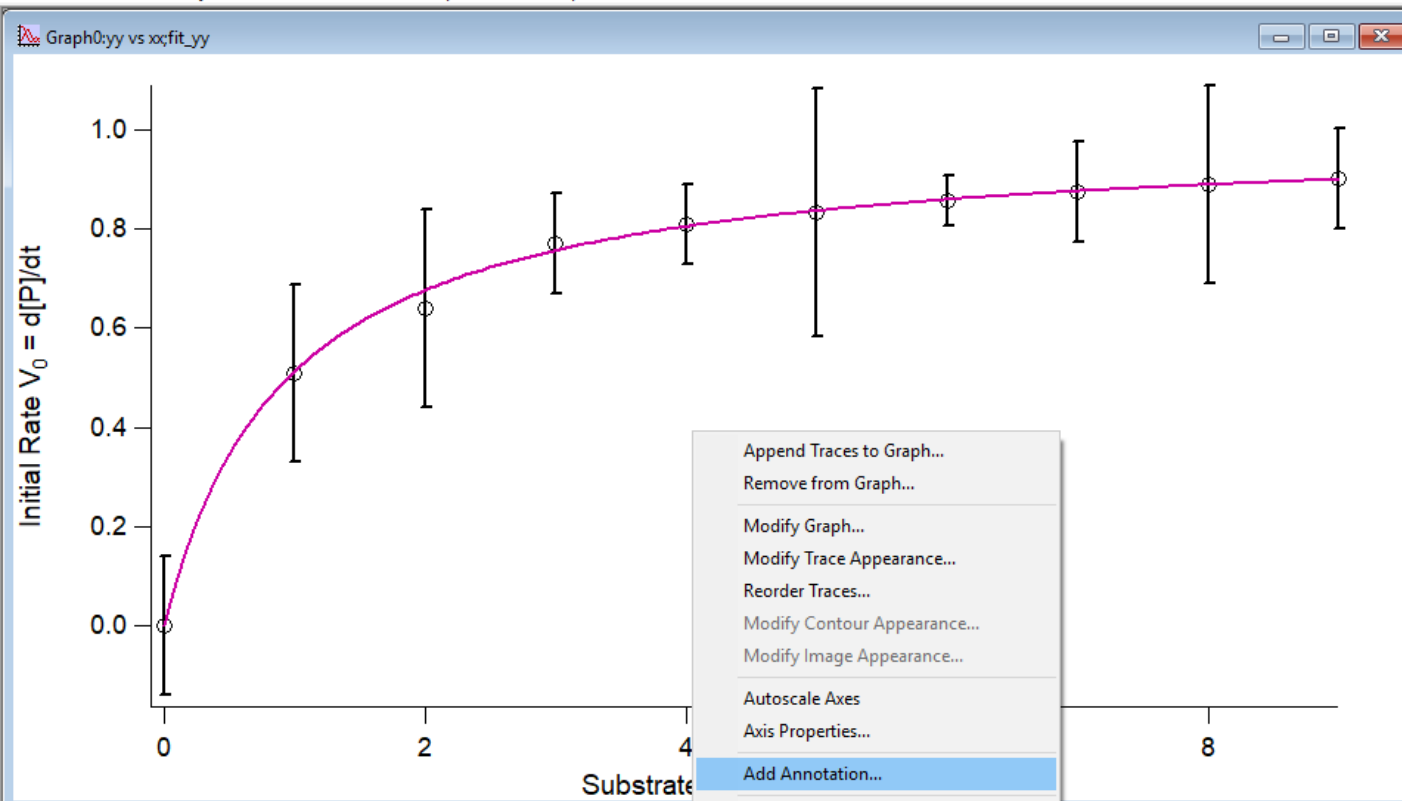
Ready



Click anywhere in the figure (not on the data) to get a menu that allows you to do a number of things. One of this is Add Annotation.

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File Edit Data Analysis Macros Windows Graph Misc Help

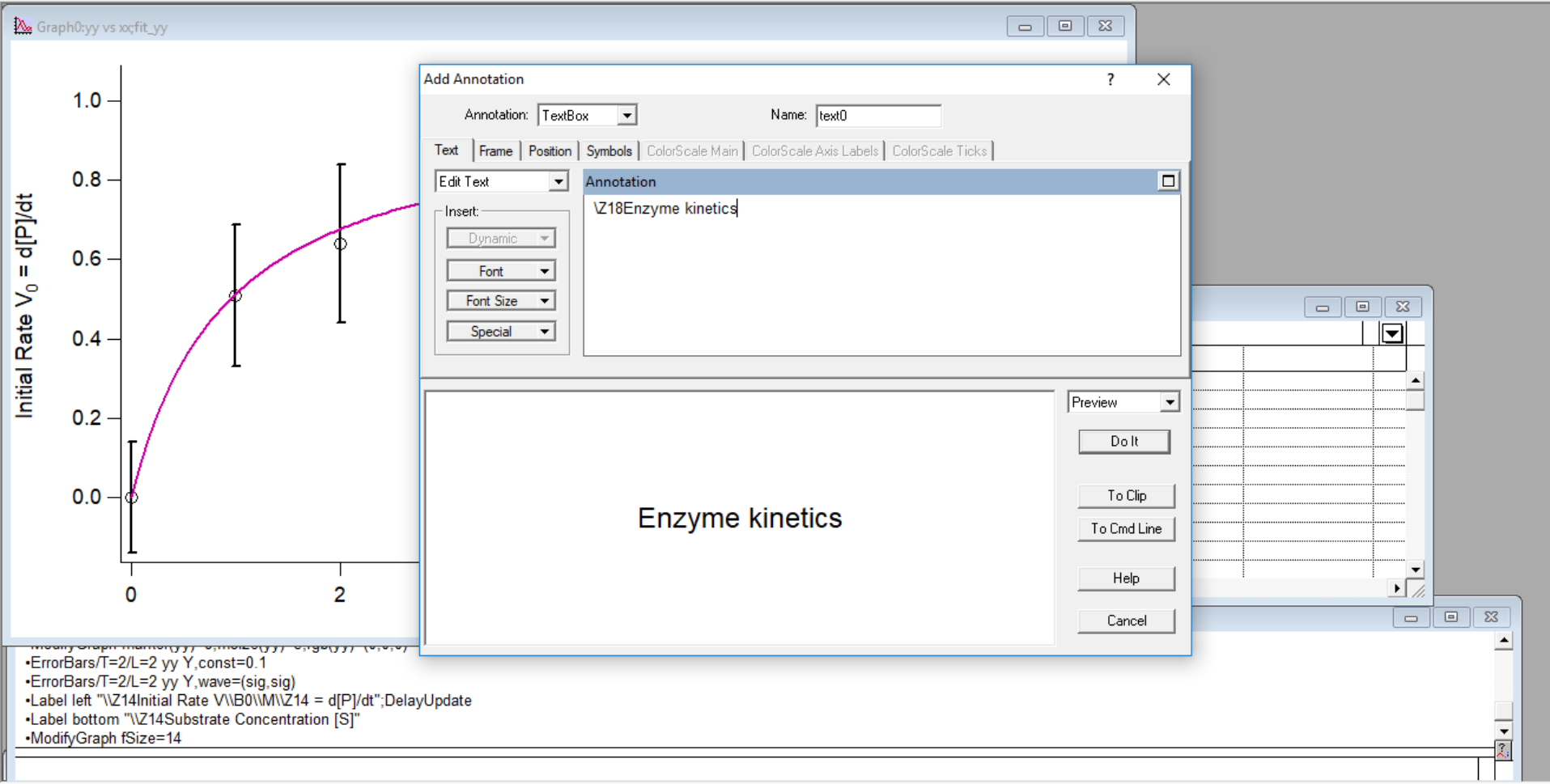


```
•ModifyGraph name(y) = moles(y) / (y * V)
•ErrorBars/T=2/L=2 yy Y,const=0.1
•ErrorBars/T=2/L=2 yy Y,wave=(sig,sig)
•Label left "\Z14Initial Rate V\B0\W\Z14 = d[P]/dt";DelayUpdate
•Label bottom "\Z14Substrate Concentration [S]"
•ModifyGraph fSize=14
```

Here we put in Enzyme kinetics in size 16 font.

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File Edit Data Analysis Macros Windows Graph Misc Help



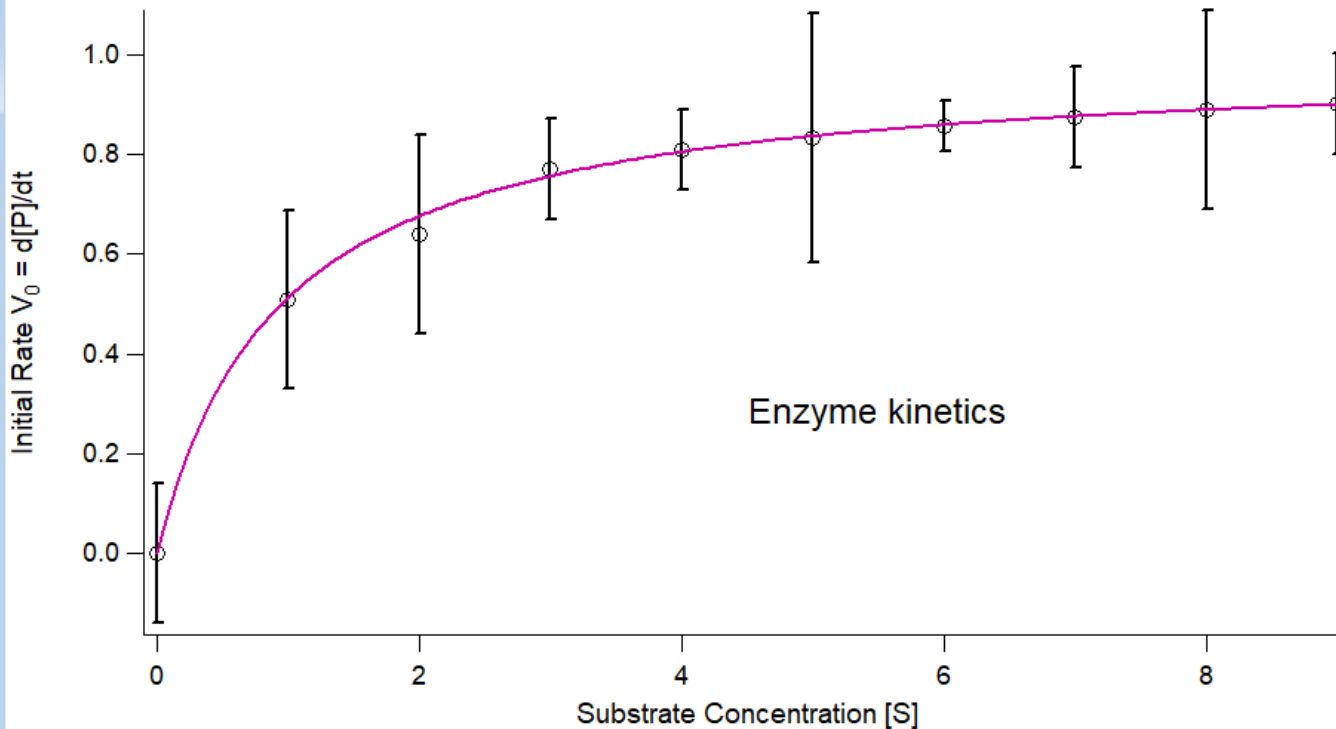
Ready

And this is the finished product.

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File Edit Data Analysis Macros Windows Graph Misc Help

Graph0:yy vs xx;fit_yy



- ErrorBars/T=2/L=2 yy Y,wave=(sig,sig)
- Label left "\Z14Initial Rate V\B0\W\Z14 = d[P]/dt";DelayUpdate
- Label bottom "\Z14Substrate Concentration [S]"
- ModifyGraph fSize=14
- TextBox/C/N=text0/F=0/A=MC "\Z18Enzyme kinetics"

Ready