

File Exchange > Category:Data Exploration

>

Tangents

Author:	Michael Buess	Date Added:	6/9/2005
Downloads:	710	Last Update:	3/30/2006
Total Ratings:	6	File Size:	2497 Bytes
Average Rating:	★★★★☆	File Name:	Tangent.opk
Created Using:	Origin 7.5	File Version:	1.0
Working Versions:	7.5,7.0		
License:	Free		

Summary:

Plot the tangent to a curve at a selected point.

Description:

PURPOSE

This tool plots the tangent to a curve at a selected point and reports the slope.

INSTALLATION

Run Tangent.opk by double-clicking on the file name or dragging it to Origin's program window. Setup creates a two-button toolbar.

OPERATION

The Tangent toolbar buttons look and act like the Data Reader and Pointer buttons on Origin's Tools toolbar. Use the Data Reader as usual to get the coordinates of a curve. Press Enter or double-click on a point to plot the tangent to the curve at that point. The slope of the tangent is shown in a text label at the top of the graph. Click the Pointer button to close the Data Reader. (The tangent curve and label will remain.)

If column B contains the data for the active curve then two columns will be created in the same worksheet: Column Bdrv (not plotted) contains the derivatives of column B and column Btgt contains the tangent data. The column label for Btgt displays the current data point index and tangent slope. If you rename column Btgt a new column Btgt will be created the next time you enter a point with the Data Reader. In that way you can plot multiple tangents to the same curve and keep track of their positions and slopes.

To keep the tangent curve inside the layer frame as shown in the graph below select Layer on Origin's Format menu, click the Display tab on the resulting dialog and check the Clip Data to Frame option. (Otherwise the tangent curve would extend below the X axis in the figure below.)

PROGRAMMING NOTE

Origin C's Curve_derivative function has a smoothness parameter that affects the calculated derivatives and, therefore, the tangent slope. This tool uses the Origin 7.5 default value for that parameter... BSPLN_OFF. If your slopes appear to be wrong you can adjust the smoothness parameter in the file tangent.c. For details, look for Curve_derivative in the index of Origin's Programming Guide.

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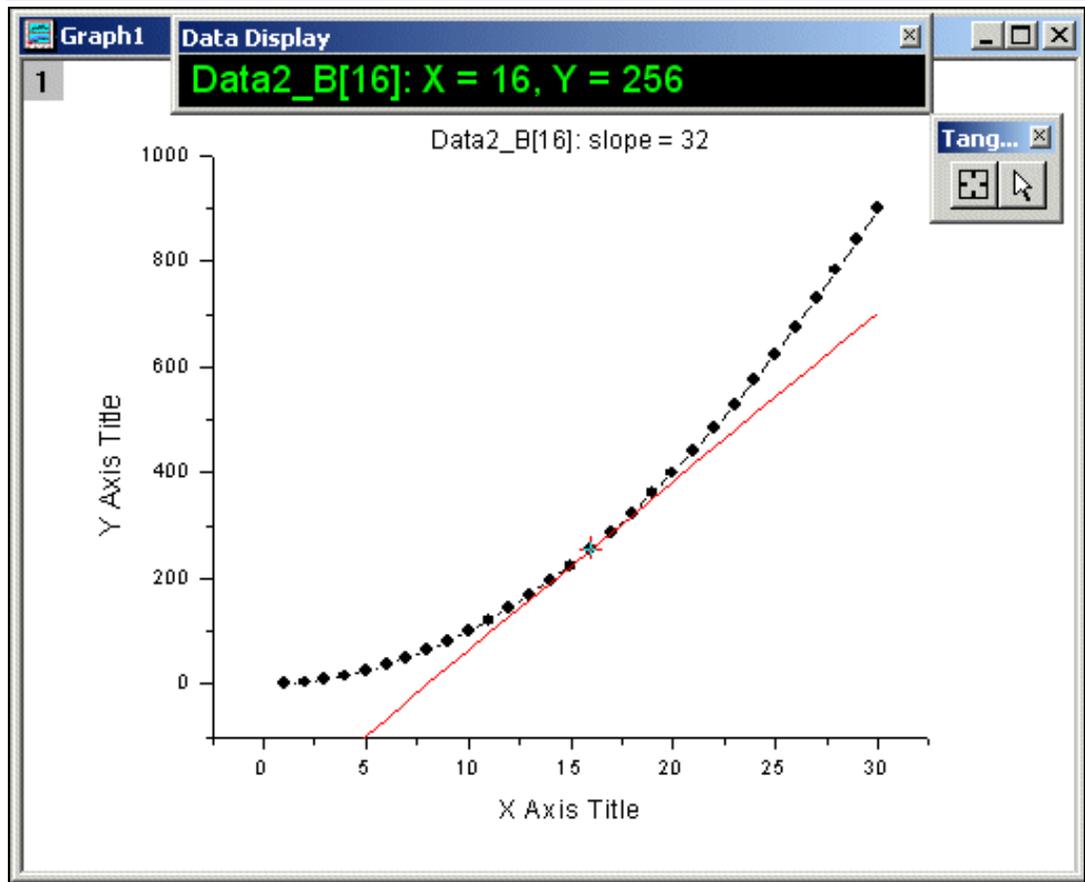
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CONTACT THE AUTHOR

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Screen Shot:



Reviews:

Rated by: [Mike Buess](#)

Date: (3/30/2006 1:17:20 PM)

walker - You may need to update your Origin 7. (This tool has only been tested in 7.0 SR4 and higher.) If you already have 7.0 SR4 or 7.5 contact me with the "click here" link.

Rated by: [walker](#)

Date: (3/27/2006 10:09:57 PM)

Error compiling tangent.c!!!!!!!!!!!!

Rated by: [max](#)

Date: (3/14/2006 2:37:06 AM)

Rated by: [qqq](#)

Date: (8/19/2005 7:15:45 AM)

good!!!!!!!!!!!!

Rated by: [qqq](#)

Date: (8/19/2005 7:15:06 AM)

??!!!!!!!!!!!!

Rated by: [Richard.Li](#)

Date: (6/10/2005 4:34:50 AM)

oh, that's a convenient tool. thx a lot.

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