

Video Analysis Using Logger Pro

Getting the video ready

Start the Logger Pro program. From the Insert tab, select Movie. Find the video file you want to analyze. When the video frame appears, you may want to drag one of the corners of the video to make it larger. Click the button in the bottom right corner of the video frame to enable the analysis features.

Setting the scale

If there is a scale in the opening frame of the video, click the button that looks like a horizontal ruler to set the scale for the data. Click one end of the scale object and drag a green line to the other end of the scale object. When you release the mouse, a dialog box will pop up where you will enter the size of the scale object.

Taking a set of position data

For some videos, you may want to see the trail of your previous data points. For others, they'll get in the way. You can click the button that shows three red dots to toggle back and forth between showing them or not.

Click the button that shows a single red dot with cross-hairs. Click the point in the video that you'll be tracking. The video will automatically advance to the next frame. Click the point you're tracking again. The video advances again. And so on until you've clicked through all the frames (or at least all the ones you're analyzing).

While you've been clicking, the graph in the background has been plotting the x and y coordinates of the points you've been clicking as a function of the time elapsed for each of the frames.

Manipulating the graphs

You can change what functions are plotted by clicking the axis labels and selecting different variables from the menu that appears.

There are numerous ways to rescale the graph. The most useful is usually the Autoscale button, which is located at the top of the window and shows a capital A on a graph.

You can select a portion of the data by clicking/dragging the mouse through the region of interest.

You can make a new graph window by going to the Insert menu and selecting Graph.

Making calculations based on experimental data

You can make a new column of data by going to the Data menu and selecting New Calculated Column... . This will bring up a new window where you can enter a name for the column and the units of the quantity you'll calculate. The equation for the new column can be entered in the bottom text box. Common functions can be selected from the Functions> button. Data from other columns can be manipulated by selecting it from the Variables (Columns)> button.

Fitting experimental data

The Curve Fit button is also at the top of the window—it includes " $f(x) =$ " on the button. Pressing that button opens a new window that allows us to fit the selected data on our graph to essentially any function we choose. Many of these functions are already defined by LoggerPro. Simply select a function to fit to your selected data, and LoggerPro will determine the fit parameters automatically.