



How do I use the graph-toolbar?

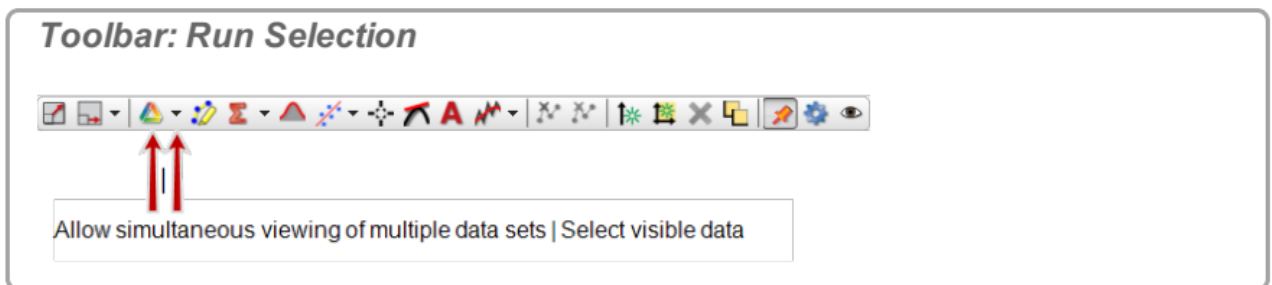


How do I choose one or more runs to display?

By default, PASCO Capstone displays the last run recorded or the currently selected measurement in Replay mode.

To select a different run to display:

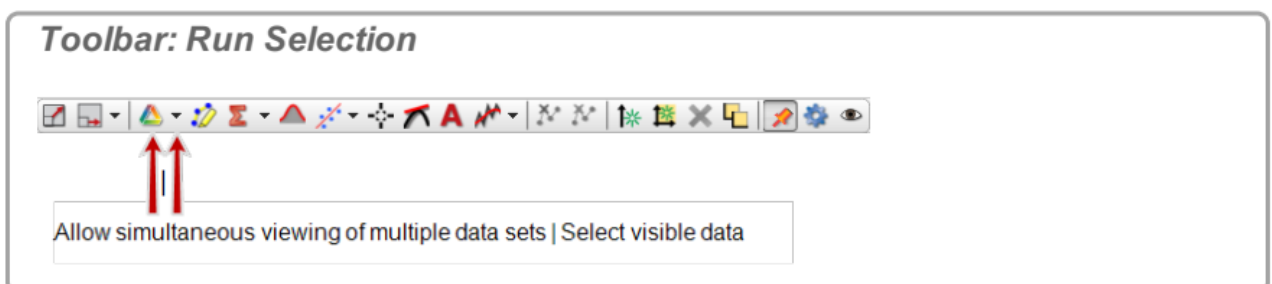
1.  Click the pull-down arrow (▼) next to **Run Selection**  in the toolbar.





2. Select the run to display.

To display multiple runs:

1.  Click to depress **Run Selection**  in the toolbar.



Selected runs display simultaneously.

2.  Click the pull-down arrow (▼) next to **Run Selection**  in the toolbar.
3. Select the one or more runs to display.

How do I curve fit data?



Apply selected curve fits to active data | Select curve fits to be displayed



How do I scale axes to show data?



Scale axes to show all data

How do I plot multiple measurements on separate plot areas with shared X-axis?





Procedure


1.  Click **Add new plot area to the Graph display**  in the toolbar.

Toolbar: Add New Plot



Add new plot area to the Graph display

2.  Click **<Select Measurement>** on the plot and choose the measurement for the vertical axis.
3. To delete a plot area and its corresponding plots,  click on the plot area and  click **Remove active element, axis, or plot area** .

Note: You will not be allowed to have fewer than one plot area. Use **Delete Selected Display**  in main toolbar to remove the display. (Scope display does not allow multiple plots.)

How do I rearrange the axis and plot areas?



Allow rearrangement of axes and plot areas

How do I add a Y-axis?

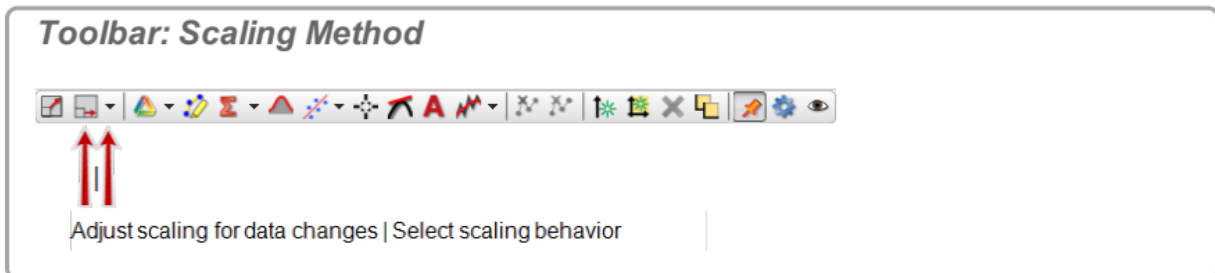



Add new y-axis to active plot area

How do I lock axis panning and scaling?

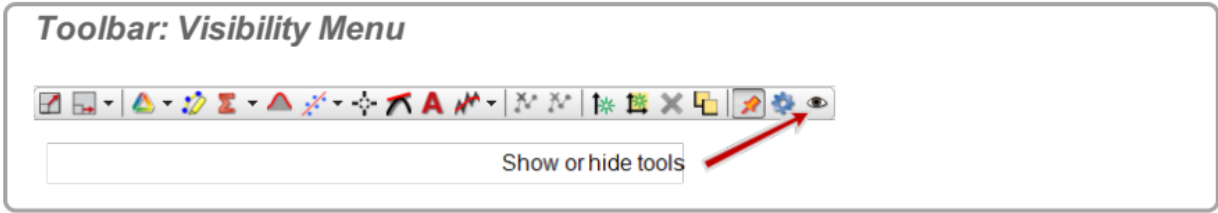
Lock panning or scaling from both user *and* data changes

1. Deselect **Scaling Method**  in the **Display Toolbar**.



2.  Right-click on an axis and select one or both:
 - **Lock Axis Panning**
 - **Lock Axis Scale**

- ➔ Users cannot manually pan or scale.
- 3. Optional: repeat for additional axes.
- 4. 🖱️ Click **Show or hide tools** 👁️ in the **Display Toolbar**.

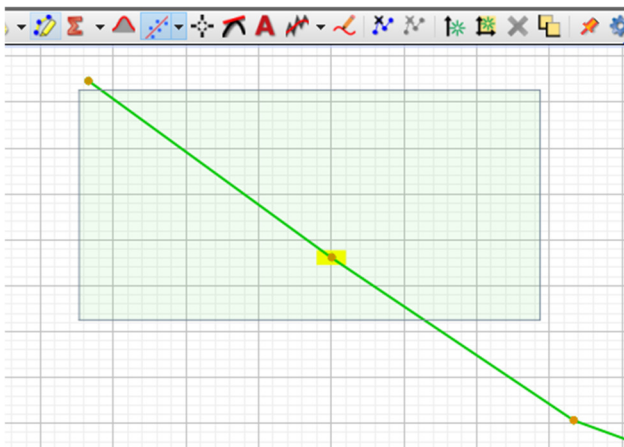


- 5. Deselect **Scale to Fit** 📐 in the list.
 - ➔ Users cannot scale to fit.
- 6. 🖱️ Click anywhere in Capstone to close **Show or hide tools**.

How do I select data?

Click **Highlight range** 📏 in the **Display Toolbar**

Drag to **select** area



Click anywhere outside the box to **deselect**.

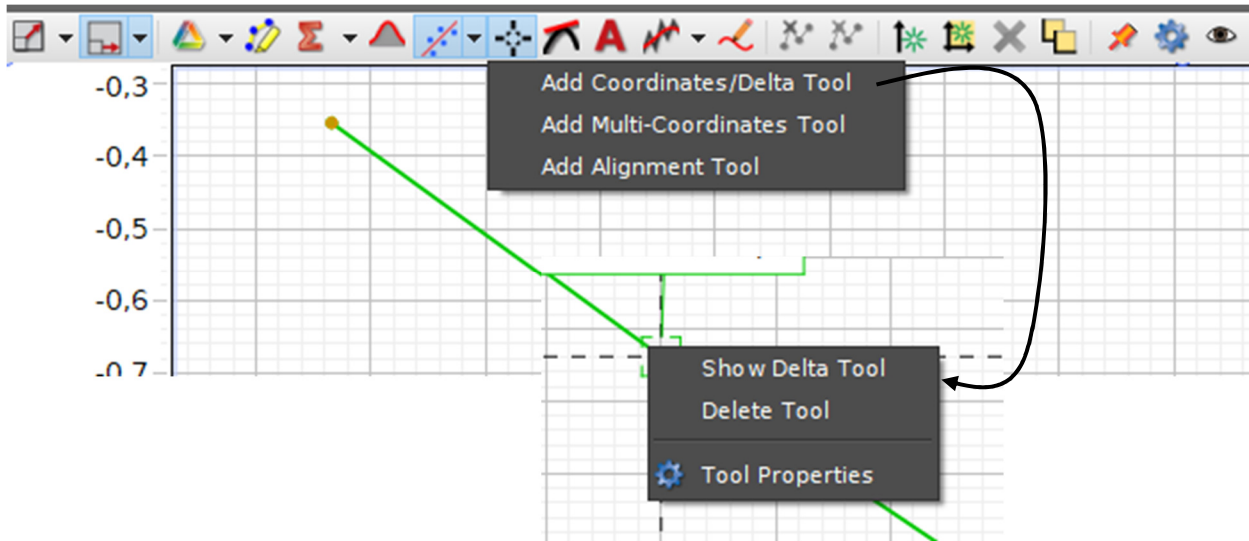
Scrolling / Ctrl+scroll / Shift-scroll -> zooming in or out!

Combined use of scaling-tool 📐 !!!

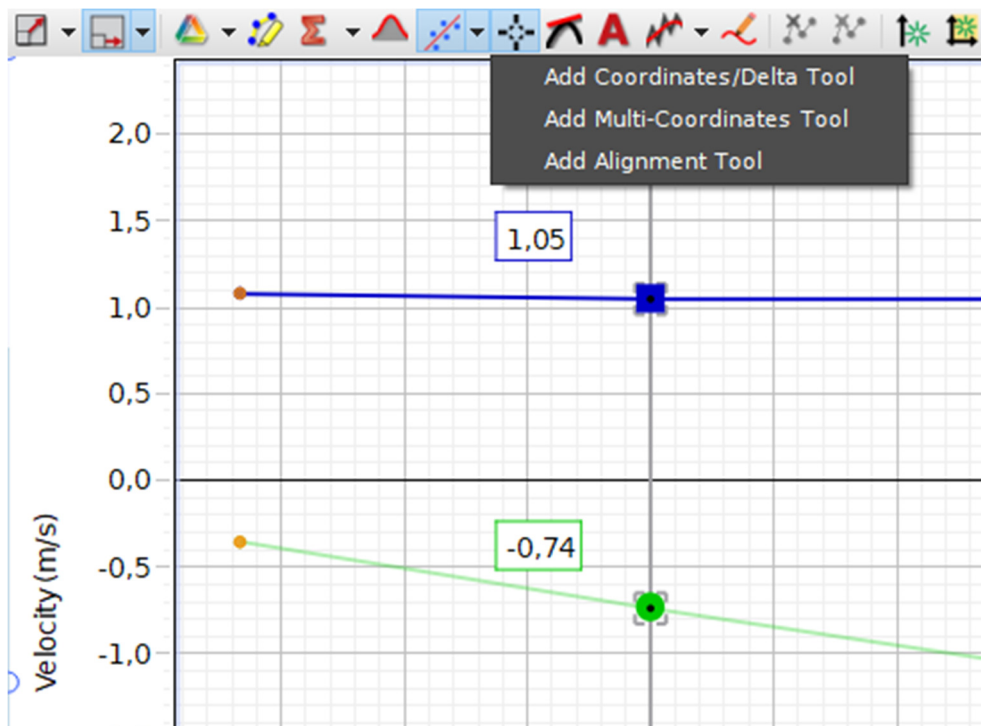
How do I add Coordinates Tools?

Click **Add a coordinates tool**  in the **Display Toolbar**

1. Delta Tool

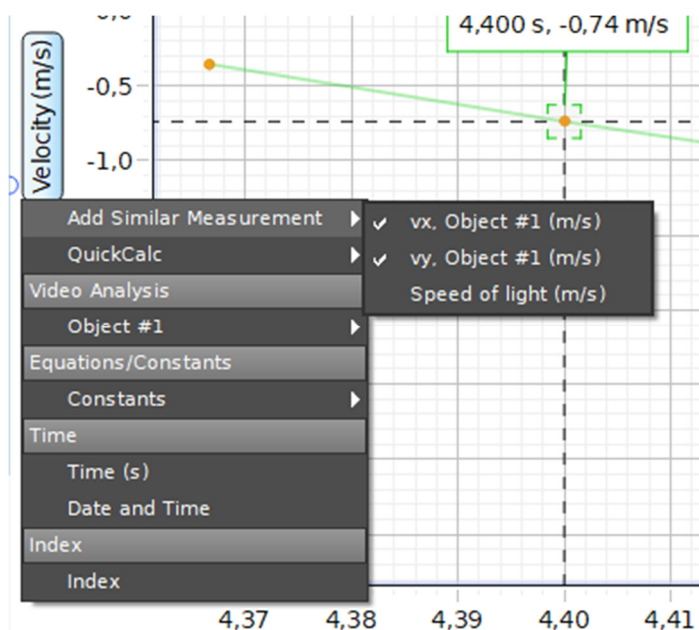


2. Multi-Coordinates Tool



How do I plot multiple but similar measurements on common plot areas with shared X-axis?

Procedure-1



Procedure-2

The figure shows the "Data Summary" panel in a software interface. The panel is titled "Data Summary" and contains a "Video Data Summary" section. The "Video Data Summary" section is expanded to show the following data sets:

- External Camera
 - Video Measurement
 - Run #1
 - Video Analysis: Object #1
 - x, Object #1 (m)
 - y, Object #1 (m)
 - vx, Object #1 (m/s)
 - vy, Object #1 (m/s)
 - ax, Object #1 (m/s²)
 - ay, Object #1 (m/s²)

How do I analyse a video?

Step-1: Use 'Open Movie File'

Step-2: Calibration (frame rate)


right-click on movie, select **properties**, select '**Movie-playback**' and adjust playback frame-rate

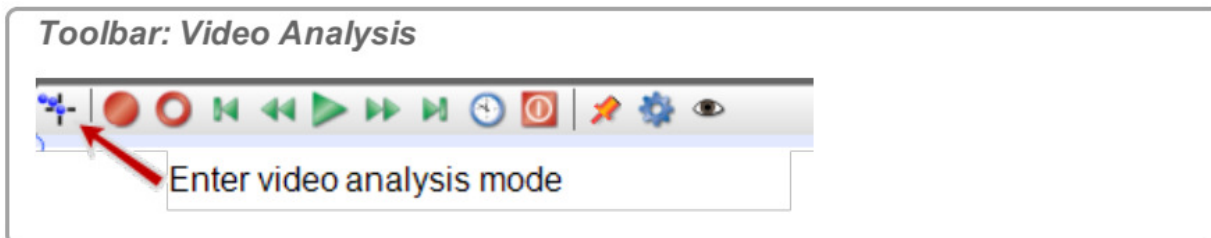
Step-3: Video Analysis Mode


- **Setup Axes / Calibrate calipers;** adjust the scale-tool to match the scale of the ruler (or any object of known length)
- **Adjust frame increment**
right-click on movie, select **properties**, select '**Overlay**' and adjust frame-increment
- **Collect Data (with magnifying glass)**






How do I use video analysis mode?

Click **Enter video analysis mode**  in the toolbar.



Select '**Create Tracked Object**'  (ONLY ONCE; you create only one single object to follow an object until the object has been completely tracked)

Options:

1. You can **manually advance** by means of the play-button  and clicking on the object.
2. You can activate '**Automatically advance the frame after clicking the object**'  (after choosing an appropriate frame-increment)!
3. You can activate '**Auto-tracking**' , use the Object Locator to identify the object and start tracking automatically!!

E.g. Tracking an object by 'Automatically advance the frame after clicking the object':

🖱️ Click on the object that you would like to track.

➡️ Capstone places a + and the video will advance to the next frame.

Repeat until the object has been completely tracked.

➡️ The video analysis data appear on the **Video Data Summary** tab (🎬) in the **Data Summary**, and are selectable from any data display.

Open a Display (such as a **Table**, **Graph**, or **Histogram**). (📎 See "Adding a display": 65)

🖱️ Click **<Select Measurement>** in the display and select a video analysis measurement:

- **x-Position**
- **y-Position**
- **x-Velocity**
- **y-Velocity**
- **x-Acceleration**
- **y-Acceleration**

EVEN PRAKTISCH

Gebruik van motion-sensor

- Bij rijbaan: klik de sensor in de baan
- Reflecterend oppervlak gebruiken als 'doel'
- Plaats bij begin van meting op +/- 15 cm voor de sensor (niet dicht!)
- Monsterfrequentie: afhankelijk van item: 10 Hz → 25 Hz → 50 Hz