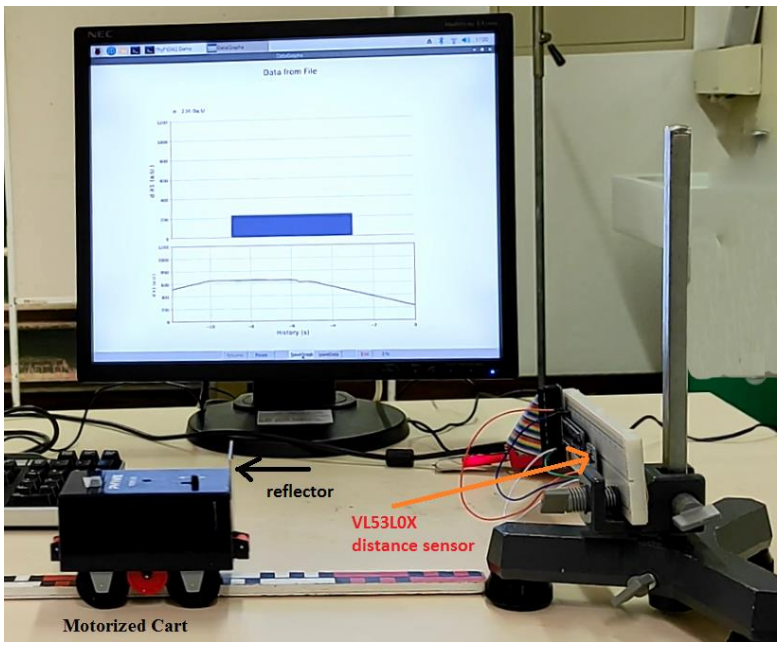
Speed and Velocity

PhyPiDAQ
Digital Measurement System Based on Raspberry Pi

Objectives:

- Measure the position of an object against time by using the Time-of-Flight VL53L0X Motion Sensor connected at the Raspberry Pi and explain the similarities and differences between speed and velocity.
- Use various graphical capabilities of the PhyPiDAQ-Software to compare the speed of a moving object to the shape and slope of the position-time graph.
- Employ spreadsheets like LibreOffice or Excel to compute the instantaneous and the average speed and velocity.



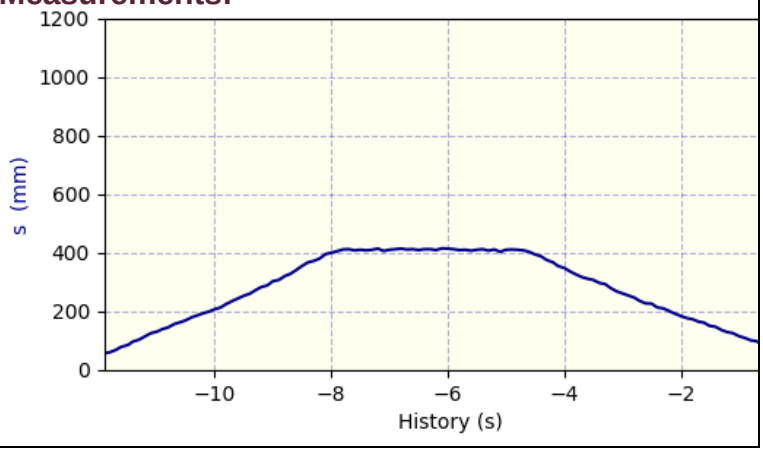
Experimental setup with the VL53L0X Distance Sensor to visualise and record the position-time graphs of a Variable Speed Motorized Cart with three-stage switch for forward, off, and reverse motion.

Procedure:

-On the Graphical Interface of the PhyPiDAQ Software one has to configure the experiment according to the VL53L0x_postion_vs_time.daq

−The Analog-to-digital convertor has to be configured according to the VL53LxConfig.yaml .

Measurements:



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