Protocol 2

Motion with Constant Acceleration

Use a separate chronometer

Tasks

1. Estimate the initial position and the constant acceleration of a massless vehicle moving along the "x" axis.

$$x = x_0 + \frac{1}{2}at^2$$

2. Set up the theoretical problem in: https://www.walter-fendt.de/html5/phen/acceleration_en.htm with $x_{0,\mathrm{th}} = +2\,\mathrm{m}$ $a_{\mathrm{th}} = +1.5\,\mathrm{m/s^2}$

3. Record N, x, and t in a table.

4. Plot distance (x) vs. time (t). Is the relation linear? If not, can you make it linear?

5. Do a linear regression using the above method to estimate the initial speed and the constant acceleration with their respective errors.

6. Are these values close to the theoretical ones?