Lab report #1

- **MYP Question:** Does the acceleration of a D.C (dynamic car) depend on the ramp's angle?

- **Hypothesis:** The acceleration is the change of speed divide by the change of time and in this experiment, the acceleration is the slope in the graph. So the acceleration of a D.C would depend on the ramp's angle. Because the ramp's angles would provide an impulse in the D.C. Causing the speed to increase and the time to decrease depending on the ramp's angle. Therefore if the ramp have a short angle elevation, then the acceleration would be shorter that in a ramp with a higher angle elevation.

- **Procedure:**

  a) Once we had installed all the necessary equipment, we start with the fist data result.
  b) The compilation of data start with a ramp's angle form by one book.
  c) The D.C need to be located at 50cm. Then it is released and you look for the slope in this first try.
  d) For one book, there might be 6 tries and then a final average for these compilations of results. This would make the results more accuracy.
  e) Do this process for the other 2 books.

- **Variables:**

  a) Control Variable: Initial position of the D.C in 50 cm. The mass of the D.C
  b) Independent Variable: The number of books
  c) Dependent Variable: The acceleration for each of the tries.

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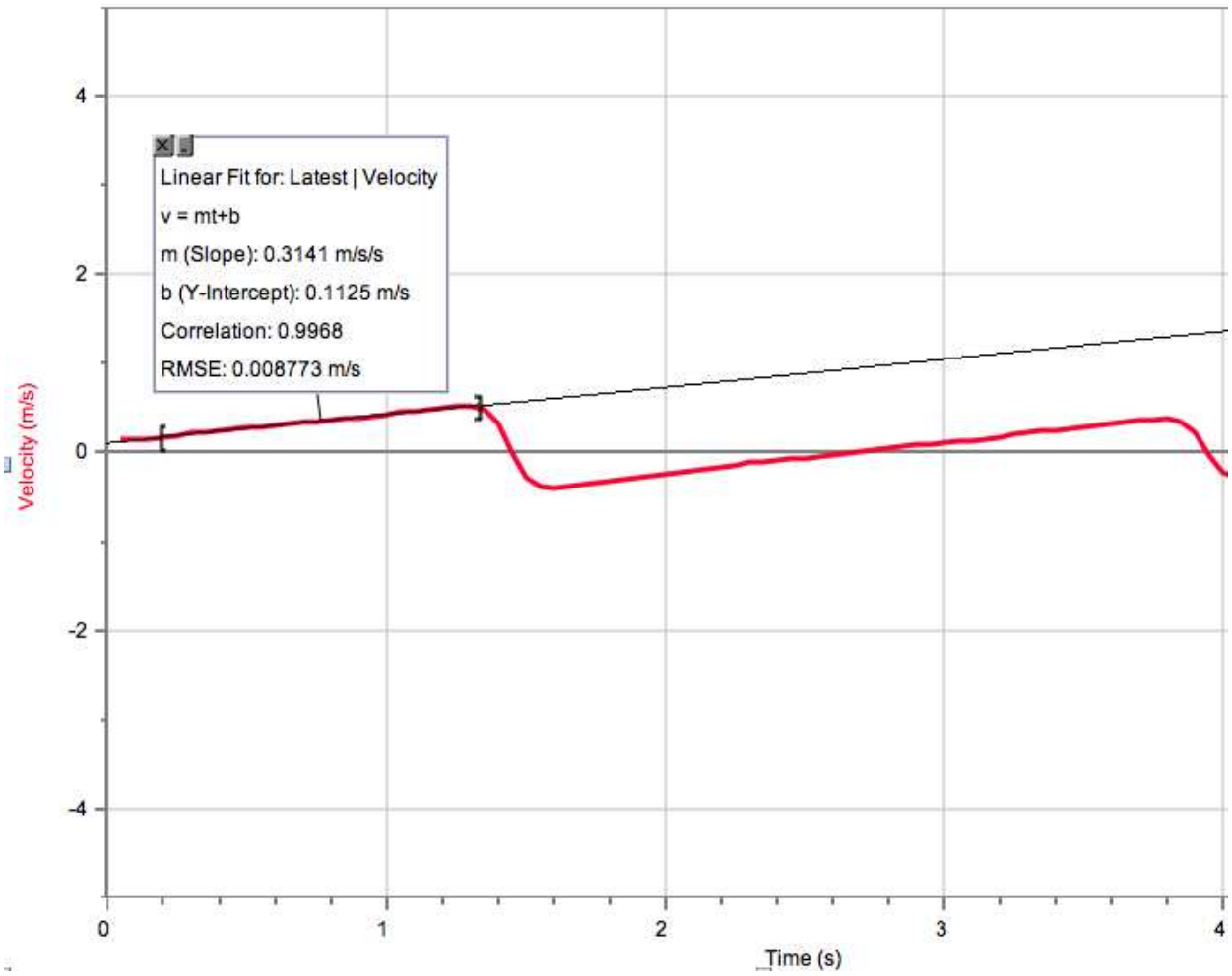
# of Books	Try 1	Try 2	Try 3	Try 4	Try 5	Try 6	Average
1	0.3325	0.3143	0.3289	0.3283	0.3262	0.3141	0.3241

- **Data:**

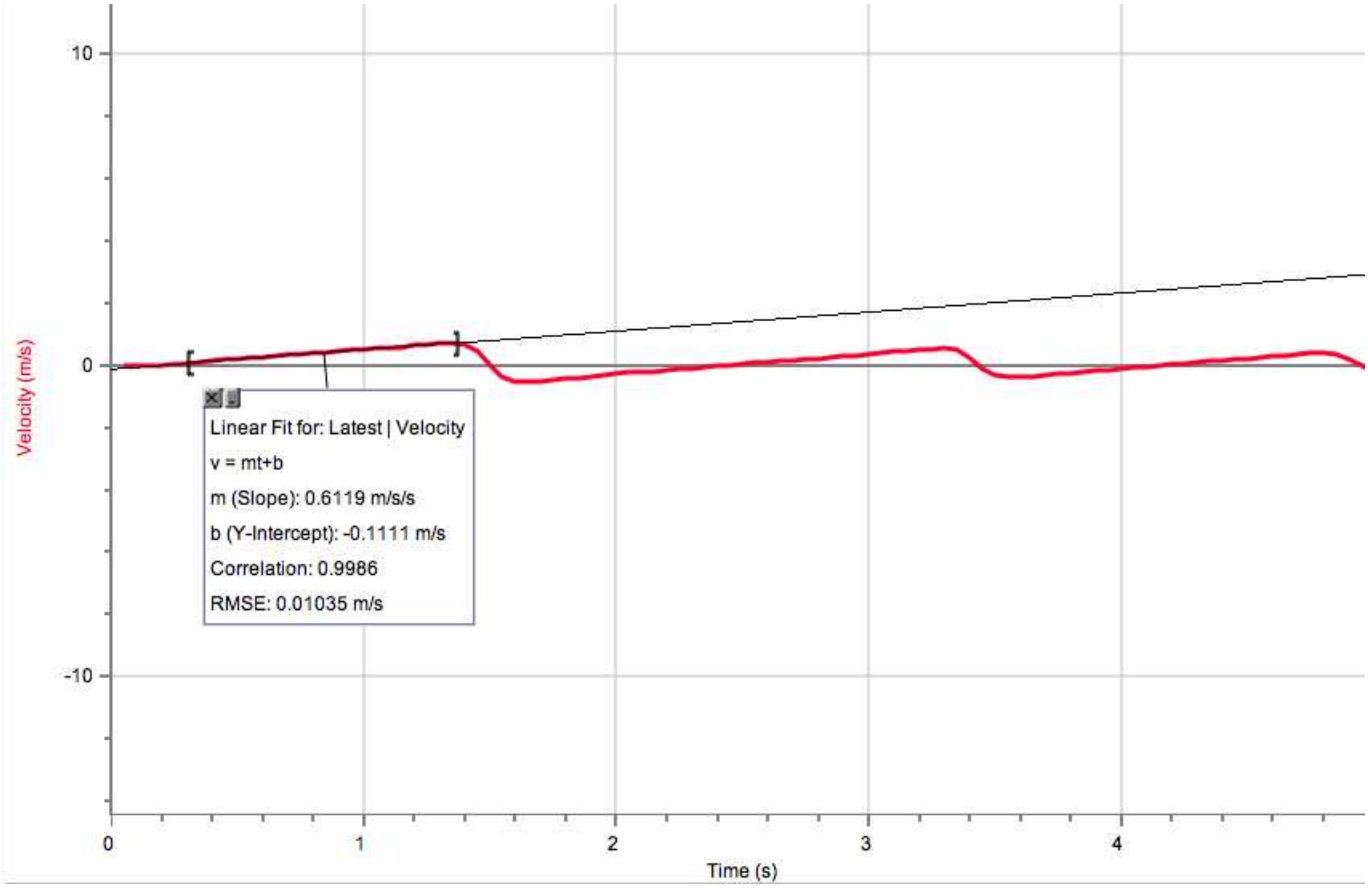
A ms^{-2}	2	0.6244	0.6325	0.6293	0.5938	0.5943	0.6119	0.5587
	3	0.8373	0.8385	0.8488	0.8467	0.8187	0.8150	0.8341

- **Graphs:**

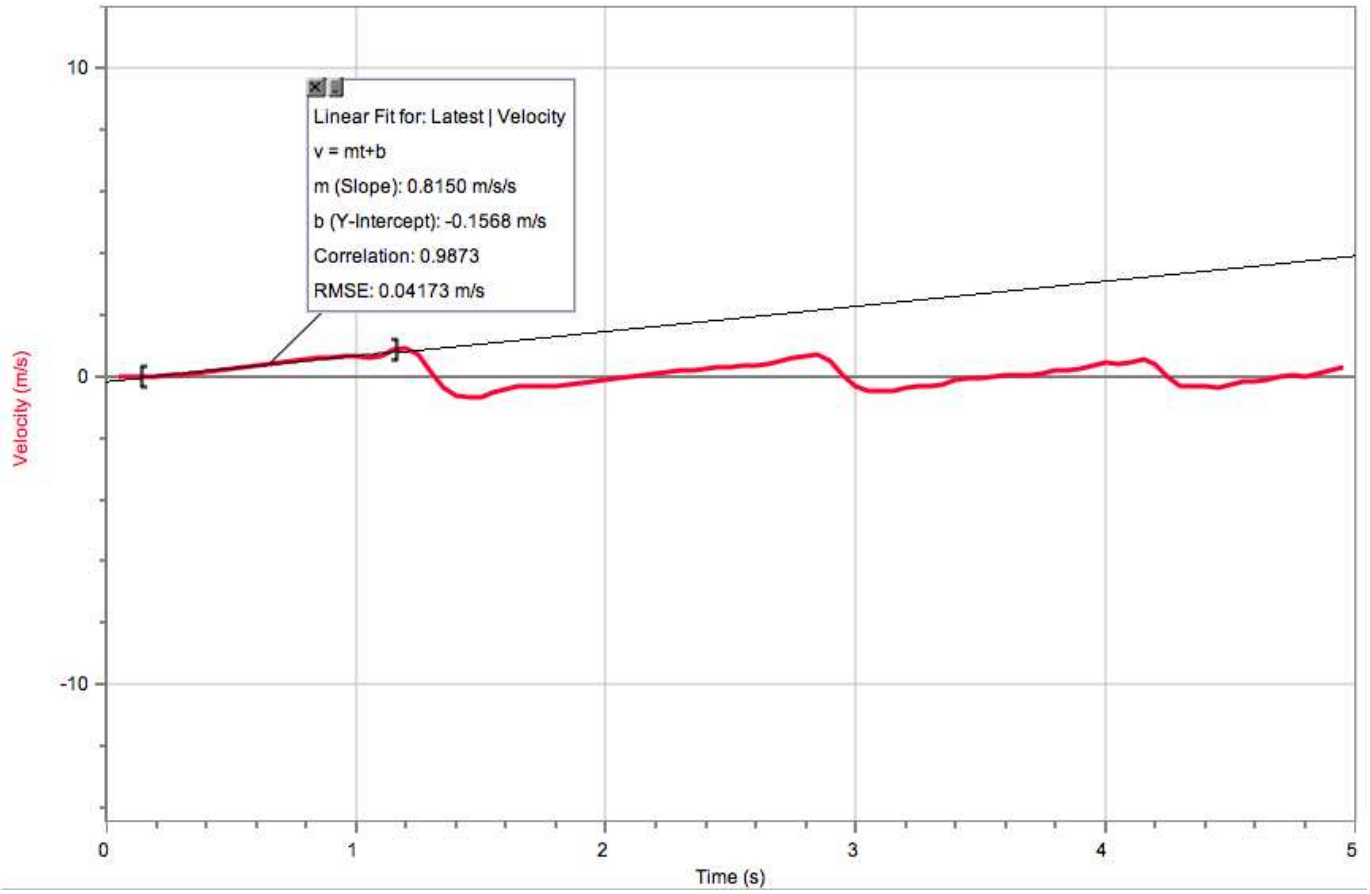
Graph 1: Graph showing the acceleration as the slope with a ramp of 1 book



Graph 2: Graph showing the acceleration as the slope with a ramp of 2 books



Graph 3: Graph showing the accele ration as the slope with a ramp of 3 books



- **Conclusion:**

My hypothesis was right. A D.C depends on a ramp's angle. The data show how the slopes vary depending on the ramp's angle. Because w hen the ramp's angle was higher, the speed increase and the time decrease. So the slope or acceleration increases when the angle was higher. This shows how the high of the angle elevation affects the acceleration.

Some difficulties during the experiments were that we didn't have enough space so our classmates move our sensor. As a consequence we have to install the sensor again and again. An other problem was that the computer was freezing therefore we have to start the experiment to many times.

For a better lab, I would take my laptop for make the experiment faster. And it would be easier to make the experiment in an open space or try to organize better the instruments in order that no one can move anything.