

LAB 02 - MOTION 2

FOLLOW THE STANDARD OUTLINE.

1 Objective

1-2 lines

2 Theory

Detail the theory of the materials relevant to this lab.

3 Experimental data

NO PRINT OUT.

3.1 Position, Velocity, Constant acceleration

- 1) Calculate θ and measure m .
- 2) Sketch x , v and a for your best run.
- 3) Discuss your graph: are they what you expect and what is predicted by theory? By inspections, are the graphs are related, and if so how?
- 4) Is it reasonable that the velocity curve is noisier than the position curve, and the acceleration curve noisier than the velocity curve?
- 5) For the velocity plot the acceleration is given by a_2 . Why?
- 6) Compare the mean to a_2 (percent error). Compare a_2 and the mean to the theoretical value (percent error).
- 7) What is a_4 ? What does the theory say it should be?

3.2 Mass and θ dependence

- 1) Sketch x , v , a graphs for your best runs.
- 2) Summarize your data in a table:

m	θ	a

- 3) Compare and discuss your results. Compare to the theory.

3.3 A Bigger Picture and Dissipation

- 1) Discuss your graphs and results? Point out where on your graphs the glider hits the end of the air track.
- 2) Does the velocity curve cross the axis (velocity=0) where you expect it to?
- 3) Are the curves the same from bounce to bounce? If not, could you suggest why?

4 Error Analysis

Discuss the sources of error in this Lab.

5 Conclusion

2-3 lines.