

Hi, Group 9 members,

Overall, we think you did a great job on this first draft of the final project. At first glance, your Latex format impressed us a lot, and the presentation of descriptions, equations, and figures is very clear and easy to read. The sections in the project follow smoothly from one to another.

The introduction part is very clear, including all things that will be covered in the project with some key results. You start analyzing the topic with Lagrangian and Hamiltonian mechanics, which surprises us on how the materials that we all have learnt in class can be used in a complicated situation. Then, you discuss the analytical solutions, which we think it's very nice because as you mention later, thinking about analytical solutions can help to identify the limitation of numerical solutions (what we didn't do in our project). Finally, we see your numerical results and are amazed by how a small change in the initial conditions would lead to a large difference in the solutions.

We would say that your report is very detailed-written and easily understood by peers. You also include extra sources for further interest, which is good.

Some suggestions:

The labels for the figures can be larger.

The title for figure 8 is inconsistent with the label.

Equation (31) looks incorrect.

Before equation (42) and (44), you could change "we got" to "we get" to maintain consistency on time tense.

Some thoughts:

In section 4.2, you assume that both bobs have same masses and both strings have same lengths; however, we wonder what the case would be when one mass is much larger than the other one, or one string is much longer than the other one (even though we think the assumption you make is very reasonable and your project discusses the problem with this assumption in details).

In the conclusion, you ask a very interesting question. Your project illustrates that the real world could be much more complicated than what we could do with math and physics.

(Your project gives us some suggestions on how we can refine our project. Thank you!)

By Group 8