

THE PENDULUM AND g

Objectives:

- Review notions of dominant error and error propagation.
- Measure the local value gravitational acceleration to a part in 10^3 .

To Do Before Lab:

- Read this lab
- Read Taylor Ch. 3 section 3.5 – 3.10 (you read 3.7 for last week)

Apparatus: string, mass, clamps, etc for pendula, measuring tape, stop watches, Excel

The Lab:

Before you on the lab table are the makings of a pendulum and familiar measuring devices. The objective of the lab is to construct a simple pendulum that allows you to measure the local gravitational constant “ g ” to 1 part in 1000.

Once your group has played around with some theory and the pendulum, take a good look at the sources of uncertainty in your measurements. Reduce these to the maximum extent possible and begin to make a high precision measurement!

Please talk to your lab instructor about your procedure and your result(s). Feel free to try lots of ideas. And do not feel constrained to measure g only once...

Enjoy!