**Value of “g” using Kater Pendulum**

**Outline**

1. **Read about Kater’s pendulum on the Internet including a more exact way of doing this experiment.**
2. **Set up the equipment using the instructions and pictures from Tel-Atomic. The timer we are using is not the one shown in the pictures. See the instructions for using the timer provided to measure the period. Both periods should be close to 1 sec. Some fine tuning is needed to get the position of the beam and amplitude as specified in the instructions.**
3. **Staring with the hole near one end, follow instructions about getting 50 period measurements and then swapping sides. You may have to restart due to friction to get 50 measurements. You may want to enter the period values into Excel or other spreadsheet as you go.**
4. **Get period measurements using the other hole.**
5. **Determine averages for T(1) and T(2) and standard deviations.**
6. **Use the formula in the instructions to get your value of “g” and its uncertainty.**
7. **Use the Internet to find the local value of latitude and elevation. Use the International Gravity Formula (1967) to find “g” at sea level. Correct for elevation of Auburn above sea level.**
8. **Compare your measured value of “g” to the local value from the International Gravity Formula (adjusted for elevation).**
9. **Compute percent difference. Comment on factors that could cause the difference such as air.**