

Abstract Submitted
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Damping of a Simple Pendulum Due to Drag on Its String SIVA SHANKAR, PIROOZ MOHAZZABI, Univ of Wisconsin, Parkside — A basic classical example of simple harmonic motion is the simple pendulum, consisting of a small bob and a massless string. In a vacuum with zero air resistance, such a pendulum will continue to oscillate indefinitely with a constant amplitude. However, the amplitude of a simple pendulum oscillating in air continuously decreases as its mechanical energy is gradually lost due to air resistance. To this end, it is generally perceived that the main role in the dissipation of mechanical energy is played by the bob of the pendulum, and that the string's contribution is negligible. The purpose of this research is to experimentally investigate the merit of this assumption. Thus, we experimentally investigate the damping of a simple pendulum as a function of its string diameter and compare that to the contribution from its bob. We find out that although in some cases the effect of the string might be small or even negligible, in general the string can play a significant role, and in some cases even a greater role on the damping of the pendulum than its bob.

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