Abstract Submitted
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Bead on a Spinning Hoop - Theory and Experiment ANDRA PETREAN, Austin College — The bead on a hoop problem is studied in classical mechanics, as an example of "centrifugal force" in a non-inertial frame, or as an exercise of applying Lagrange's equations. Students calculate equilibrium positions for various rotation speeds, and also learn about oscillations of the bead near the equilibrium. In order to complement the theoretical calculations with experimental observations, and to add some change-of-pace activities to a course heavy on theory, we use an experimental apparatus that allows us to observe the behavior of a bead on a spinning hoop. I will discuss the experimental setup, the data taken, and the agreement between the theoretical and the experimental values for the angle of the bead at the equilibrium position.

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