

THE EFFECT OF VARIED ELASTICITY ON AN AIR DAMPED BALL BOUNCING ON A SINUSOIDALLY VIBRATING PLATE. *Melanie Day, Franklin*, Department of Physics, mamday@epals.com*

In previous experiments, the relationship between drag, driving force and the motion of a ball on a vibrating plate have been examined. Expanding this idea, our simulation investigates the effect of elasticity and varied coefficient of restitution in the ball-plate system. The relationship between typical chaotic dynamics and those found in a system with partial elasticity will be discussed, including delayed periodic bifurcation, continued sticking with increased plate acceleration, and chattering down solutions.