Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Macroscopic Velocity Amplification in Stacked Disks[1] SRIVIDYA MURTHY, GARY WHITE, George Washington Univ — When a small sphere rests atop a larger sphere (for example, a basketball with a tennis ball balanced on top), and both are released from a height, the resulting "velocity amplification" of the small sphere when the pair rebound from a hard floor, is a staple of the physics demonstration toolkit—usually impressive, sometimes dangerous. While this phenomenon has been studied in the literature in some detail, we set out to explore this effect by constructing a device involving stacked disks falling in a plane, fashioned after an online design by Wayne Peterson of Brigham Young University. When two disks, stacked edge to edge atop one another and confined to a vertical plane, are dropped, the top disk rebounds to a much greater height than it started from, as expected. In this talk, we report on experiments conducted by dropping the disks and recording the heights to which they rise on rebound, and the comparison of these results with our theoretical predictions and computer simulations.

[1]Frances E. Walker Fellowship

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Date submitted: 20 Jan 2015 Electronic form version 1.4