Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Properties Affecting the Angle of Repose in a Vertically Vibrated Container of Granular Materials ODYSSEUS FOX, PAUL QUINN, THOMAS TWEDDLE, Kutztown University of Pennsylvania — Experiments are conducted using various granular materials subject to a vertical vibration. The angle of repose is studied while varying certain parameters of the system, such as vibration amplitude, vibration frequency, initial height, grain size, container size, and container shape. Empirical relationships are found for the angle of repose as a function of each of these variables. In particular, we compare the results when using a homogeneous material as compared to an inhomogeneous material with varied sizes of particles. We also examine the surface structure and relate it to the propagation of energy through the vibrating system of particles.

Paul Quinn
Kutztown University of Pennsylvania

Date submitted: 15 Nov 2013 Electronic form version 1.4