

Abstract Submitted  
for the MAR14 Meeting of  
The American Physical Society

**Experimental measure of sphere packing probability in a Quasi-2D channel**<sup>1</sup> HARRY CHARALAMBOUS, MARK D. SHATTUCK, The City College of New York, COREY S. O'HERN, Yale University — We designed an experiment to test exactly solvable models for packings of frictionless disks in confined geometry. We place a fixed number of monodisperse spheres (grains) of diameter ( $D=3.2\text{mm}$ ) in a quasi 2d rectangular column  $1.5D$  wide by  $1D$  thick by  $100D$  tall. In this arrangement only two possible configurations are allowed for a pair of grains; either consecutive grains are on opposite sides of the column or they are on the same side. We used an electromagnetic shaker to create random states by tossing a range from 4 to 26 grains in the air. After each toss, a vibration (perturbation) was applied to remove frictional effects. We measure the probability of finding each possible state and compare with theory. We find that gravity affects the probability distribution and needs to be incorporated into a new theory.

<sup>1</sup>NSF-PREM DMR-0934206 and NSF-CBET-0968013

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Date submitted: 15 Nov 2013

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