Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

An experimental investigation of the force network ensemble JONATHAN KOLLMER, KAREN DANIELS, North Carolina State University — In granular packings, the particle positions alone are insufficient to determine the force network that carries the load on that packing. While this has been studied numerically, there have been few experiments to examine this question in real, frictional materials. We present an experiment in which a horizontal quasi-2D granular system with a fixed neighbor network is cyclically compressed and decompressed over many cycles, allowing the system to explore different force configurations. We characterize several statistical properties of the packing, including the probability density function of contact forces, and compare them with predictions from the force network ensemble theory.

Jonathan Kollmer
North Carolina State University

Date submitted: 11 Nov 2016 Electronic form version 1.4