## Abstract Submitted for the MAR14 Meeting of The American Physical Society

## Contact Network Statistics During Vibration of Disk Packings<sup>1</sup>

MARK R. KANNER, Levich Institute and Physics Department at City College and CUNY Graduate Center, CARL SCHRECK, Lawrence Berkeley National Laboratory, COREY O'HERN, Yale University, MARK D. SHATTUCK, Levich Institute and Physics Department at City College — We use simulations of bidisperse disks that interact via purely repulsive linear springs to determine properties of contact networks during vibration at various energies and pressures. From a set of initially existing contacts in a mechanically stable reference state the contact probability during vibration can be predicted by measuring the inter-particle potential before vibration. We explore the energy regions below particle rearrangement where our prediction is valid and discuss a physical mechanism for this behavior based on the exchange of potential and kinetic energy between particles.

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

Date submitted: 15 Nov 2013 Electronic form version 1.4