

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Shape effect on dynamical properties of granular materials<sup>1</sup>**

SOMAYEH FARHADI, Duke University, Department of Physics, ROBERT P. BEHRINGER, Duke University — We have investigated the effect of shape on dynamical and rheological properties of granular materials through Couette shear and cyclic isotropic compression experiments. We track the evolution of our systems by measuring the mean velocity local density, orientational order, and local stress. This set of experiments which were performed on systems of bidisperse disks and identical ellipses at exactly same conditions, reveals striking differences between the dynamics of disks and ellipses. In particular we observe a very slow relaxation in various dynamical quantities for systems of ellipses. We also demonstrate that the strain history of the system (i.e. shear vs. compression) highly impacts the aging process.

<sup>1</sup>NSF-DMR grant DMR1206351 and NASA grant NNX10AU01G

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Date submitted: 09 Nov 2012

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