Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

**Particle velocity distribution in a 3-dimensional vibration fluidized granular medium**[1] HONG-QIANG WANG, University of Massachusetts Amherst, KLEBERT FEITOSA, NARAYANAN MENON — We report an experimental study of particle kinematics in a 3-dimensional system of inelastic spheres fluidized by intense vibration. The motion of particles in the interior of the medium is tracked by high speed video imaging, yielding a spatially- resolved measurement of the velocity distribution. The distribution is wider than a Gaussian and broadens continuously with increasing volume fraction. The deviations from a Gaussian distribution for this boundary-driven system are different in sign and larger in magnitude than predictions for homogeneously driven systems. We also find correlations between velocity components which grow with increasing volume fraction.

[1]We are grateful for support through NASA NNC05AA35A and NSF-DMR0606216

Hong-Qiang Wang
University of Massachusetts Amherst

Date submitted: 20 Nov 2009 Electronic form version 1.4