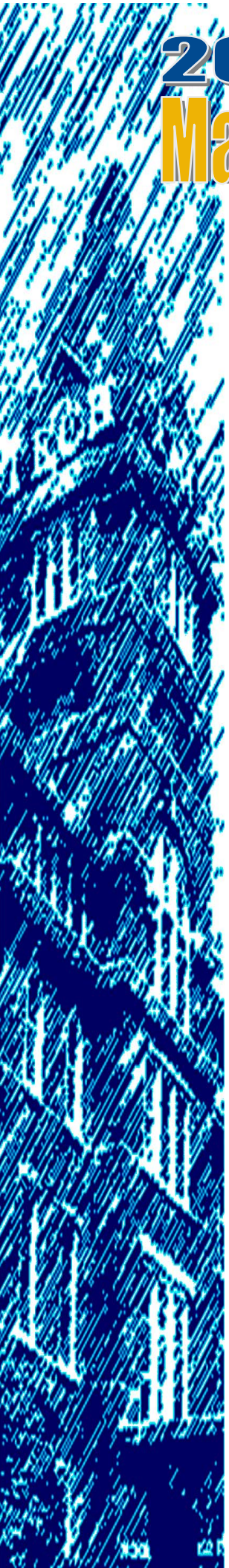

2007-2008 Materials Council Seminar Series

Georgia Institute of Technology

Corey S. O'Hern

Department of Mechanical Engineering and Physics
Yale University

"Computational Studies of Jamming in Model Powders"

Tuesday, November 6, 2007
Verco Classroom 299 – LOVE Bldg.
3:00-4:00PM

ABSTRACT

We investigate the jamming transition in model frictionless powders with short-range attractive interactions by performing extensive discrete element simulations. In contrast to model granular systems with purely repulsive interactions, we find that these systems can possess three distinct regimes of mechanical response---completely floppy, partially rigid, and completely rigid behavior---separated by two critical phase transitions. We characterize the structural and mechanical properties of these model powders and compare our results to those found previously for percolation and rigidity percolation transitions in colloidal gels and other weakly attractive systems.

Host: Prof. Mo Li, 404-385-2472; mo.li@mse.gatech.edu

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