

# *Chez Pierre*

Presents ...

**Monday, April 24, 2017**

**12:00pm noon**

**MIT Room 4-331**

## **Chez Pierre Seminar**

**Bulbul Chakraborty - Brandeis University**

**“Theory of Force Transmission and Rigidity in Granular Systems”**

As illustrated by the Carbon-paper experiments of the Chicago group a couple of decades ago, force transmission in granular materials occurs via localized structures that have come to be known as force chains. Experiments using photoelastic beads provide clear evidence of this phenomenon of force localization, and force-chains have emerged as the defining characteristic of granular solids. Yet, we do not have a theory of force localization and the role played by disorder on this localization phenomenon. The constraints of mechanical equilibrium that are necessarily satisfied in a static granular packing, lead to a gauge potential formulation of forces and stresses. In this talk, I will explore the implications of this gauge potential formalism for the response of granular systems to external stresses.

