
Seminar

On yield in amorphous solids under oscillatory shear

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A fundamental problem in the physics of amorphous materials is understanding the transition from reversible to irreversible plastic behavior and its connection to yield. Currently, continuum material modeling relies on phenomenological yield thresholds, however, in many cases the transition from elastic to plastic behavior is gradual, which makes it difficult to identify an exact yield criterion. I will discuss some recent simulation work under periodic, oscillatory shear that shows that amorphous solids undergo a transition from repetitive, predictable behavior to irreversible behavior as a function of the strain amplitude. In both the periodic and irreversible regimes, localized particle rearrangements are observed. I will discuss how some of these observations could be understood by “front depinning” ideas.

Monday, Jun 15th 2015

4:00 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS