

Students' Annual Seminar

Ordering within the jammed states: contrasting real and force space scenarios

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In a recent paper, (Tong, Tan and Xu, Sci. Rep. 2015), the authors have shown that a polydisperse granular solid undergoes a well-defined ideal crystal to disordered crystal transition as polydispersity is increased. While there is no structural signature at this transition, several other parameters such as coordination number, non-affine response etc. show differences in the two phases. We study this transition using a "force space" formulation where the force balance condition appropriate for all jammed structures is utilised to obtain a tiling of the dual force space. We show that in this formulation the disordering transition maps on to a mechanical buckling transition of the dual honeycomb lattice. We discuss future extensions of this work to study jamming in higher dimensions, frictional jamming, and epithelial tissue dynamics etc.

Tuesday, Jun 13th 2017

4:30 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS