Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Rigidity and Nonlocality in Dense Granular Materials

Karen Daniels

North Carolina State University, NC

Rigidity is the ability of a system to resist imposed stresses before ultimately undergoing failure, and real granular materials exhibit a range of behaviours from local creep to bulk flow. Disordered materials often contain both rigid and floppy regions that complicate the utility of taking system-wide averages and make continuum modelling challenging to achieve. I will talk about several frameworks (network science, rigidity percolation, vibrational modes) capable of connecting the internal structure of disordered materials to their rigidity and/or failure under loading and describe how we apply these ideas to laboratory data on disordered lattices and granular materials.

Tuesday, Nov 21st 2023

2:30 PM (Tea / Coffee 2.15 PM)

Seminar Hall, TIFR-H