

ICTS Colloquium

Title : Encoding memory in flowing solids

Speaker : Vinutha H A (Georgetown University)

Date : Tuesday, 25 March 2024

Time : 03:30 PM (IST)

Abstract : Every day, we encounter complex flows around us that are sensitive to their surrounding conditions. For example, pastes flow when squeezed, sudden mudslides and avalanches occur, grains get jammed in hoppers, and cells migrate during wound healing. I am interested in understanding how these complex flows cease and establish rigidity. As these flows occur in non-equilibrium systems, the mechanical properties of these complex fluids are well known to depend on their flow history. However, the mechanisms through which memory is imparted to the material in the flowing state remain poorly understood. In this talk, I will address the question of encoding memory in the flow state and its role in the solidification process in a model jammed suspension, which belongs to the broad class of yield stress fluids. Computer simulations are used to uncover the microscopic mechanisms of stress relaxation in jammed suspensions upon flow cessation. My findings reveal that the memory of flow is imprinted in the spatial correlations in the dynamics of neighboring particles as well as in local particle configurations.

Venue : Madhava Lecture Hall & Online

Please click on the below link to join the seminar

<https://icts-res-in.zoom.us/j/97166159744?pwd=WkFtQ1VCdFBGSGFVudjk5S0xGaDFuQT09>

Meeting ID: 971 6615 9744

Passcode: 262627