



ICTS Condensed Matter Seminar

Title : Liquid-state properties and jamming dynamics of persistent athermal active matter

Speaker : Suman Dutta (ICTS-TIFR, Bangalore)

Date : Tuesday, 25th October 2022

Time : 3:00 PM (IST)

Abstract : Models of dense athermal active matter offer unique scope to investigate the role of non-thermal fluctuations in dynamic arrest. In this work, we consider a two-dimensional binary mixture of Lennard-Jones particles with random, persistent active forces. We focus on the liquid state properties of such systems, using large-scale molecular simulations and investigate how a dense active liquid obtained at large values of the active force approaches a force-balanced jammed state when the active force is removed or reduced to small values. We show that the jamming proceeds via a three-stage relaxation process whose timescale grows with the magnitude of the active force and the system size. We relate the dependence on the system size to a length-scale extracted from velocity correlations of the initial liquid state that increases with system size.

Venue : Online & Emmy Noether Seminar Room (ICTS)

Zoom link: <https://icts-res-in.zoom.us/j/89433846201?pwd=eHZ0Q0UwdkFBRzNYcEVrQXlkRDh2Zz09>

Meeting ID: 894 3384 6201

Passcode: 252522