

## **ICTS Statistical Physics Journal Club Seminar**

Title : Crossover behaviours exhibited by fluctuations and correlations in a chain of active particles

Speaker : Prashant Singh (ICTS-TIFR, Bangalore)

Date : Thursday, 4<sup>th</sup> February 2021

Time : 03:00 pm (IST)

Abstract : While the interacting active particles are well studied in the large (hydrodynamics) scale, deciphering properties at the small scale remains largely open. A systematic and rigorous analytic treatment for the non-equilibrium statistical mechanics of multiple active particles has still been lacking. In this talk, I will demonstrate a simple setting of harmonic chain where many properties can be analytically computed. Primary focus will be on the statistical properties of the tagged particle's position  $x(t)$  for three active particle dynamics - run and tumble model, active Brownian particle and active Ornstein Uhlenbeck particle. Various cross-over behaviours for the correlations and fluctuations of  $x(t)$ , previously conjectured, will be explicitly derived.

Venue : Please click on the below link to join the seminar

<https://zoom.us/j/91584932960?pwd=Z2xPbWk5S2V6amlrTkhnREM1UEZCdz09>

Meeting ID: 915 8493 2960

Passcode: 666536