ICTS | INTERNATIONAL CENTRE for THEORETICAL SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Statistical Physics Journal Club Seminar

Title : Macroscopic description of confined particles with repulsive interaction in equilibrium

Speaker : Anupam Kundu (ICTS-TIFR, Bengaluru)

Date : Wednesday, 28th April 2021

Time : 03:00 pm (IST)

Abstract : Systems of interacting particles confined in external potentials are ubiquitous in nature. Particularly, pairwise repulsive interactions with power-law singularities have taken a special place in physics and mathematics. I will discuss properties of a class of N particles interacting via pairwise repulsive interaction potential and confined by an external potential which tries to pull them to its minimum. On the other hand the repulsive interaction and the entropy try to spread them apart forcing them to settle down over some region with an inhomogeneous density. I will discuss how the large-N macroscopic description of the system in terms of this density depends on the nature and range of the repulsive interaction, form of the confining potential and external constraints, and how the mean density of particles get affected by these factors.

Venue : Please click on the below link to join the meeting
https://zoom.us/j/98086148556?pwd=cWpxbSsrV3lNanpSY1c0ZUtZbVdRUT09
Meeting ID: 980 8614 8556
Passcode: 934734