ICTS Seminar

Title : The Fock-space landscape across the many-body localisation transition

Speaker : Sthitadhi Roy, University of Oxford

Date : Tuesday, June 01, 2021

Time : 2:30 pm (IST)

Abstract : Many-body localised (MBL) phases of matter fall outside the conventional paradigm of equilibrium statistical mechanics and thermodynamics. Remarkably, they also exhibit a novel phase transition between an ergodic and an MBL phase, the nature of which is currently an active area of research. In this talk, I will discuss some theoretical approaches towards this problem by exploiting the exact mapping between a many-body Hamiltonian and a tight-binding problem on the Fock-space graph. I will discuss how strong correlations emerge in the effective Fock-space disorder and how they play a central role in stabilising an MBL phase. I will then discuss how the correlations in the eigenstates on the Fock space reveal the critical properties of the MBL transition. I will show the existence of a correlation length that varies discontinuously across the transition, and how its critical scaling is consistent with a Kosterlitz-Thouless like scenario.

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

https://zoom.us/j/98123903383?pwd=YmxnMi9yRmFrMHA2NDl1Z2Z5RVFUdz09
Meeting ID: 981 2390 3383
Passcode: 145660