

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

Title : Localization in quasiperiodic systems

Speaker : Subroto Mukerjee (Indian Institute of Science, Bangalore)

Date : Thursday, 26th November 2020

Time : 04:00 pm (IST)

Abstract : The phenomenon of localization in non-interacting systems with disorder has been well understood for several decades now. The effect of dimensionality on localization in these systems is most simply analyzed in terms of the single parameter scaling theory of localization. Over the last 15 years, it has been realized that localization in these systems persists even in the presence of weak interactions, at least in one dimension, a phenomenon that has come to be known as many-body localization. Many-body localized states are also robustly athermal. Another class of non-interacting systems that displays localization is that of quasiperiodic systems, in which the onsite potential on a lattice is non-repeating but still deterministic. These systems can exhibit a localization-delocalization transition in one and two dimensions unlike disordered systems. In this talk, I will discuss the applicability of a single parameter scaling theory to the phenomenon of localization in quasiperiodic systems. Quasiperiodic systems can produce single particle mobility edges even in one dimension. I will discuss the fate of many-body localization in such systems and provide evidence in support of the existence of a non-ergodic extended phase which is distinct from the thermal and many-body localized phases.

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

Seminar <https://zoom.us/j/98000804847?pwd=cWV1SFZIZVdxSUVQTVBUNmt4Q3F3Zz09>

Meeting ID: 980 0080 4847

Passcode: 444547