

ICTS Statistical Physics & Condensed Matter Seminar

- Title** : Two aspects of periodically driven closed quantum systems
- Speaker** : Krishnendu Sengupta (Indian Association for the Cultivation of Science, Kolkata)
- Date** : Wednesday, 31st July 2024
- Time** : 11:30 AM (IST)
- Abstract** : In this talk, we shall discuss two aspects of periodically driven closed quantum systems. First, we shall discuss the existence of signatures of Hilbert space fragmentation (HSF) in a driven interacting fermi chain in its prethermal regime at special drive frequencies . We provide analytical expression for these drive frequencies, show that such prethermal regime can be exponentially long in the large drive amplitude regime, and discuss feasibility of realization of such systems in experiments. Second, we shall discuss two-rate periodic driving of closed quantum systems where the drive frequencies have integer ratio. We show that for protocols obeying certain conditions, there is a large class of non-integrable models where one obtains an exact Floquet flat band. Near these flat bands, heating in these driven systems is significantly reduced which may be useful, for example, in application to qubit manipulation and quantum state preparation.
- Venue** : Emmy Noether Seminar Room
- Zoom Link: <https://icts-res-in.zoom.us/j/93349319467?pwd=0LFMUqzN1Ne0Rh0Oo7z1JapD2fhizX.1>
Meeting ID: 933 4931 9467
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