

**ICTS**

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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

## **ICTS Thesis Defense Seminar**

- Title** : Thermalization and hydrodynamics in integrable systems
- Speaker** : Saurav Pandey (ICTS-TIFR, Bengaluru)
- Date** : Monday, 16 June 2025
- Time** : 2:00 PM (IST)
- Abstract** : Thermalization refers to the process in which observables evolve with time and eventually attain constant values defined by an equilibrium ensemble. The microscopic understanding of thermalization is an active area of research. In one of our papers, Boltzmann entropy, we studied the time evolution of the Boltzmann entropy of a microstate during the non-equilibrium free expansion of a one-dimensional quantum ideal gas. We examined two choices of macrovariables and found that the corresponding entropies grow and eventually saturate. One could also study thermalization from a hydrodynamic perspective. In another paper, Harmonic chain GHD, we studied the Generalized Hydrodynamics (GHD) and approach to a Generalized Gibbs equilibrium (GGE) for a classical harmonic chain. We calculated the conserved densities and the corresponding currents starting from a domain-wall initial condition and found good agreement with exact numerics.
- Venue** : Emmy Noether Seminar Room  
Zoom Link: <https://icts-res-in.zoom.us/j/97479686648?pwd=TpLAgzvsAauxEkUVGvsJGqsGuKTDqV.1>  
Meeting ID: 974 7968 6648  
Passcode: 995256