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ICTS Ph.D. Thesis Defence

Title : Analytically tractable models of one-dimensional anomalous heat transport

Speaker : Aritra Kundu, ICTS-TIFR, Bangalore

Thesis Advisor : Abhishek Dhar

Date : Tuesday, April 2, 2019

Time : 11:00 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : Fourier's Law of heat conduction describes diffusive heat transport in numerous real systems but is known to break down in one-dimensional (1D) systems. This implies that the thermal conductivity of 1D systems diverges with system size and energy transport is super-diffusive. In this talk, I will discuss approaches to understanding super-diffusive transport in different set-ups. I will first focus on understanding the differences in transport in integrable and non-integrable systems. Next I will show how super-diffusive transport in specific analytically tractable stochastic non-integrable models can be described by the fractional diffusion equation (analogous to the heat equation for diffusive transport).