

ICTS Seminar

Title : Exact static and dynamic characterization of conserved-mass transport processes

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Date : Thursday, August 3, 2017

Time : 10:30 AM

Venue : Amal Raychaudhuri Meeting Room, ICTS Campus, Bangalore

Abstract : In this talk, we discuss some exact static and dynamic properties of a broad class of conserved-mass transport processes, governed by chipping, diffusion, and coalescence of masses on a ring. We exactly calculate steady-state spatial correlations, which are finite but short-ranged and, consequently, lead to a remarkable thermodynamic property in these nonequilibrium systems, analogous to additivity in equilibrium, enabling us to characterise the subsystem distribution in the steady state. To further support our claims, we derive hydrodynamics of these processes by exactly calculating bulk-diffusion coefficient and conductivity and show that the probability of large deviation in density, obtained from the hydrodynamics, is in complete agreement with the same derived using additivity property.