



ICTS Colloquium

Title : Large Deviations and Concentration for Weakly Interacting Particle Systems

Speaker : Kavita Ramanan, Brown University, USA

Date : Monday, December 03, 2018

Time : 3:00 PM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : Large collections of stochastically evolving, weakly interacting particles arise as models of phenomena in a variety of applications ranging from engineering and biology to statistical physics. These are typically not amenable to an exact analysis, and thus one often resorts to asymptotic analysis to gain qualitative insight into the dynamics. For a broad class of symmetrically interacting particle systems, it is well known that as the number of particles goes to infinity, the empirical measure process converges to the law of what is called a nonlinear Markov process. We describe large deviations of the process from the limit nonlinear Markov process in various settings, and describe several consequences and applications of the result. The talk will not assume prior knowledge of large deviations theory.