Schedule for the Discussion Meeting
(to be held at the Silver Jubilee Hall, 2nd floor, Main Building)

January 23, 2017 (Monday)

Time/Day	Speaker/event	Title of the talk
9:00 AM onwards	**Registration**	
9:15 – 9:30 AM	Inaugural address by the Director	
9:30 – 10:15 AM	***Deepak Dhar*** (IISER - Pune)	Spreading of avalanches in the 1-dimensional Oslo model
10:30 – 11:15 AM	***Pradeep Mohanty*** (SINP, Kolkata)	Universality in Self-Organized Criticality
11:15 – 11:45 AM	TEA	
12:00 noon – 12:45 PM	***Sitangshu Santra*** (IIT - Guahati)	First-order transition and percolation
1:00 – 2:00 PM	LUNCH at the guest house conference room	
2:00 – 2:45 PM	***Rajesh Ravindran*** (IMSc, Chennai)	Universality properties of steady driven coagulation with collisional evaporation
2:45 – 3:15	TEA	
3:15 – 4:00 PM	***Punyabrata Pradhan*** (SNBNCBS, Kolkata)	Additivity and density fluctuations in nonequilibrium
4:00 – 6:00 PM	**POSTER SESSION,** Venue : Near Lecture Hall 2/3	
7:00 PM -	SPECIAL DINNER	

January 24, 2017 (Tuesday)

9:30 – 10:15 AM	***Mustansir Barma*** (TCIS - Hyderabad)	Interfaces in Random Media: Extremal Dynamics and Passive Scalars
10:30 – 11:15 AM	***Sakuntala Chatterjee*** (SNBNCBS, Kolkata)	Coupled nonequilibrium systems: Ordering and dynamics
11:15 – 11:45 AM	TEA	
12:00 noon – 12:45 PM	***Sumanta Kundu*** *(SNBNCBS, Kolkata)*	Colored percolation
1:00 – 2:00 PM	LUNCH at the guest house conference room	
2:00 – 3:30 PM	**GROUP DISCUSSIONS and Vote of Thanks**	

Talk 1 (Deepak Dhar):

Title: Spreading of avalanches in the i-dimensional Oslo model

Abstract: I will discuss the spreading of avalanches on uncorrelated backgrounds in the directed 1+1 dimensional Oslo model. We find four different universality classes of behavior: directed percolation, compact directed percolation, the Manna- class, and a new universality class, not discussed earlier in literature. For the undirected 1-d Oslo model, we use hyper-uniformity of the critical state to simulate very large system sizes up to length 10^7), and obtain rather precise values of the critical exponents.

Talk 2 (Pradeep Mohanty):

Title: Universality in Self-Organized Criticality

Abstract: I will present an overview of self organized criticality in stochastic snadpile models. They belong to an universality class different from that of deterministic models; but what is the universality class?

Talk 3 (Sitangshu Santra):

Title: First-order transition and percolation

Abstract: Spanning cluster properties of a new percolation model with nucleation and preferential growth exhibits first-order transition depending on the values of the growth parameter g_0 and the initial seed concentration ρ. Except preferential growth of smaller clusters with a size-dependent growth probability of amplitude g_0, the model preserves all other criteria of the original percolation model. As ρ decreases starting from the percolation threshold p_c of original percolation, a line of continuous transition encounters a coexistence region of percolative and non-percolative large clusters. At sufficiently small values of ρ (≤ 0.05), the value of g_0 exceeds p_c and generates compact spanning clusters leading to first-order discontinuous transitions.

Talk 4 (Rajesh Ravindran):

Title: Universality properties of steady driven coagulation with collisional evaporation

Abstract: Irreversible aggregation is an archetypal example of a system driven far from equilibrium by sources and sinks of a conserved quantity (mass). The source is a steady input of monomers and the evaporation of colliding particles with a small probability is the sink. Using exact and heuristic analyses, we find a universal regime and two distinct non-universal regimes distinguished by the relative importance of mergers between small and large particles. At the boundary between the regimes we find an analogue of the logarithmic correction conjectured by Kraichnan for two dimensional turbulence. These results will be generalised to models with conservation laws with application to mass distribution in rings of Saturn.

Talk 5 (Punyabrata Pradhan):

Title: Additivity and density fluctuations in nonequilibrium

Abstract: Characterizing fluctuations in a many-particle systems is fundamental to the formulation of statistical mechanics. Unlike in equilibrium, where fluctuations are obtained from the Boltzmann distribution, there is no unified principle to characterize fluctuations in nonequilibrium. In this talk, I would discuss static and dynamical properties of fluctuations in various mass transport processes and explore if a statistical mechanics framework could be constructed to understand them better.

Talk 6 (Mustansir Barma):

Title: Interfaces in Random Media: Extremal Dynamics and Passive Scalars

Abstract: We study the clustering of hard-core passive scalar particles on a driven interface in a quenched, random medium. The interface evolves through extremal dynamics, as in the model introduced by K. Sneppen, and organizes itself into a critical state along directed percolation backbone paths. Cuts of the interface profile are related to particle occupancies in the extreme adiabatic limit. Studies of these, as well as direct simulations of sliding particles, reveal cusp singularities of scaled correlation functions, indicating the occurrence of fluctuation-dominated phase ordering in the system.

Talk 7 (Sakuntala Chatterjee):

Title: Coupled nonequilibrium systems: Ordering and dynamics

Abstract: We demonstrate particle clustering on macroscopic scales in a coupled nonequilibrium system where two species of particles are advected by a fluctuating landscape and modify the landscape in the process. The phase diagram generated by varying the particle-landscape coupling, valid for all particle density and in both one and two dimensions, shows novel nonequilibrium phases. While particle species are completely phase separated, the landscape develops macroscopically ordered regions coexisting with a disordered region, resulting in coarsening and steady state dynamics on time scales which grow algebraically with size, not seen earlier in systems with pure domains.

Talk 8 (Sumanta Kundu):

Title: Colored Percolation

Abstract: A series of site percolation models have been introduced and studied. Sites of a regular lattice are randomly selected with probability p and kept vacant with probability 1 − p as in ordinary percola-tion. The selected site is then occupied by n distinct colored atoms using uniform probabilities 1/n. Denoting different distinct colors by the English alphabets, we have studied different percolation models like ABC, ABCD, ABCDE, ... etc. In these models, only those lattice bonds having two different colored atoms at the opposite ends are defined as occupied, and other bonds are treated to be vacant. It has been observed that in general, at a specific value p_c (n, L) of the percolation probability, a spanning path through the occupied bonds appears. Similar to the well known AB percolation problem, here also the percolation transition is absent on the square lattice for n = 2. Apart from that, non-trivial percolation thresholds are estimated for all values of n ≥ 3 for

the square lattice and for $n \geq 2$ for the triangular lattice. Furthermore, these models are generalized by introducing a bias towards different colored atoms. The estimated values of several critical exponents from our extensive numerical simulations indicate that these models belong to the same universality class as the ordinary random percolation.