Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Flocking transition in an active Ising model in one dimension

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We consider a one-dimensional lattice of Ising spins in which two values of each Ising spin represent left- and right-moving particles. In the non-motile limit, this model exhibits absorbing ferromagnetic states. When activity is introduced through biased motility, these absorbing states are destabilised, and the system instead undergoes a continuous flocking transition as the alignment strength is varied. A finite-size scaling analysis provides quantitative evidence for the occurrence of a nonequilibrium phase transition in this one-dimensional system.

This work was done in collaboration with Narayan Dutt Sharma, Subroto Mukerjee and Sriram Ramaswamy.

Tuesday, Nov 17th 2026

11:30 Hrs (Tea / Coffee 11:15 Hrs)

Auditorium, TIFRH