



Indo-German (SPARC) Workshop on Innovations in Understanding Complex Systems: The Role of Spins, Disorder and Topology

Department of Physics, Indian Institute of Technology, New Delhi, India

17th – 18th February 2026

Venue: Senate Room (1st Floor, MS Building)



DAY-1 (17th February)

Session-1			
Time	Speaker	Title	Chairperson
8:45 – 9:20	Registration		
9:20 – 9:25	Sujeet Choudhary, HOD, Physics, IIT Delhi	Welcome Address	
9:25 – 9:30	Varsha Banerjee, IIT Delhi	Introductory Remarks	
9:30 – 10:10	Bhavtosh Bansal, IISER Kolkata	Saddle-node bifurcations in solid-state systems	Martin Weigel
TEA BREAK (30 min)			
10:40 – 11:20	Sumilan Banerjee, IISc	Quantum oscillations in the magnetization and density of states of non-interacting and interacting insulators	Sanjay Puri
11:20 – 12:00	Sankalpa Ghosh, IIT Delhi	Quantum Hall Josephson junctions: overview and some recent theoretical results	
Group Photo (Biotech Lawn)			
LUNCH (12:00 – 14:00)			
Session-2			
14:00 – 14:40	Christoph Tegenkamp, TU Chemnitz	Graphene-Based Epitaxial 2D Heterosystems: Harnessing Proximity Coupling for Emergent Quantum Phenomena	Sujit Manna
14:40 – 15:20	Pranaba K. Muduli, IIT Delhi	Harnessing Topological Quantum Materials for Energy-Efficient Magnetic Memories	
TEA BREAK (30 min)			
Session-3			
15:50 – 16:15	Anuj Kumar Singh, TIFR Hyderabad	Dynamic Heterogeneity and Kinetic Arrest in Disordered Magnetic and Non-Magnetic Colloids	Gargee Sharma
16:15 – 16:40	Andreas Cordier, TU Chemnitz	Chirality-Induced Spin Selectivity: Spin-Polarized Transport at Chiral Molecular Interfaces	
16:40 – 17:05	Sujit Manna, IIT Delhi	Anti-Klein Tunneling in Topological Insulators	
17:05–17:15	POSTER FLASH TALK		
17:15–19:00	POSTER SESSION (4th Floor Corridor, Physics Department)		

DAY-2 (18th February)

Session-1			
Time	Speaker	Title	Chairperson
9:30 – 10:10	Martin Weigel, TUC	Disorder and excitations in active and passive systems	Bhavtosh Bansal
10:10 – 10:50	Sanjay Puri, JNU	Phase Separation in Active Systems	
TEA BREAK (30 min)			
11:20 – 12:00	Rahul Marathe, IIT Delhi	Stochastic heat engines: active, effective equilibrium and optimization aspects	Deepak Kumar
12:00 – 12:40	Chandan Dasgupta, IISc	Flocking transition in an active Ising-type model in one dimension	
LUNCH (12:40 – 14:20)			
Session-2			
14:20 – 15:00	Satyabrata Patnaik, JNU	Experimental Manifestations of Topological Superconductivity in 6R-SnNbSe ₂	Christoph Tegenkamp
15:00 – 15:40	Pintu Das, IIT Delhi	Magneto-transport behavior of heterostructures of metallic ultra-thin film multilayers and van der Waals magnets hosting magnetic skyrmions	
TEA BREAK (30 min)			
Session-3			
16:00-16:25	Varsha Banerjee, IIT Delhi	Emergence of chiral phases in bent core liquid crystals	Rahul Marathe
16:25 – 16:50	Denis Gessert, TU Chemnitz	Nonequilibrium studies of the d = 3 Ising model at zero temperature: Domain growth and aging	
16:50– 17:15	Preeti Bhandari, SAU Delhi	Efficient cluster updates for spin glasses	
Concluding Remarks (Sujit Manna)			

Poster Presentations

Venue: 4th Floor Corridor, Physics Department

Time (17th Feb)	Presenter	Title
17:00 – 19:00	Shashank Kallappara, TU Chemnitz	Ising Model under Stochastic Resetting
	Monojit Chatterjee, IIT Delhi	Variational Optimization of Stochastic Heat Engines
	Aashna, IIT Delhi	Geometry-Induced Friction at a Soft Interface
	Shubham Sharma, IIT Delhi	Dynamics of a Chiral Active Granular Particle
	Shreyashi Sinha, IIT Delhi	Imaging Orbital Ordering in vdW Magnet
	Nazma Firdosh, IIT Delhi	Critical Scaling in Magnetic Topological Insulator
	Shubhanshu Karoliya, IIT Mandi	Majorana polarization in disordered quasi-one-dimensional hybrid nanowires
	Gautham Verma K, IIT Mandi	Strain-induced Ettingshausen effect in spin-orbit coupled non-centrosymmetric metals
	Ritik Rajak, IIT Delhi	Role of Liquid Crystal Textures on Trajectories of Active Brownian Particles
	Harshita Chauhan, Arpit, IIT Delhi	Self-Assembly of Magnetic Colloids in d=2
	Neesha Yadav, IIT Delhi	Skymionic signature in heterostructure of van der Waals magnet and high spin-orbit coupled materials
	Arpan Gupta, IIT Delhi	Study of Weak (anti) localisation for the fermionic excitation with generalised pseudospin-s
	Parbati Saha, IIT Delhi	Violation of the Fluctuation Dissipation Theorem in the Long-range Ising Model
	Denis Gessert, TU Chemnitz	Mazelike Striped Phase in the Frustrated J1-J2 Ising Model on the Honeycomb Lattice