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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Seminar

- Title : Odd viscosity and elasticity in active materials
- Speaker : Debarghya Banerjee (Max Planck Institute for Dynamics and Self-Organisation)
- Date : Thursday, October 31, 2019
- Time : 2:00 PM
- Venue : Emmy Noether Seminar Room
- Abstract : In this seminar, I will discuss the emergence of novel mechanical responses in chiral active matter. Activity, by definition, breaks time reversal symmetry (T); and chirality is the breaking of parity (P). In literature one comes across a default assumption that the fourth rank tensors, viscosity and elasticity, possess major symmetry. The breaking of P and T means that this assumption does not hold good anymore. I will talk about the additional terms that we get in the constitutive relations when we consider a broken major symmetry in the viscosity and elasticity tensors. I will also discuss how these additional terms affect the material properties/phenomenology; and in the course of these discussions I will also touch upon ideas such as turbulence in active rotor fluids.