



ICTS

INTERNATIONAL
CENTRE *for*
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Condensed Matter and Statistical Physics Seminar

Title : Dissipative Dynamics in Correlated Systems: From Majorana Decoherence to Strange Metallic Transport

Speaker : Sauri Bhattacharyya (Sapienza University of Rome)

Date : Tuesday , 25 August 2026

Time : 03:30 PM (IST)

Abstract : Dissipation naturally arises in a Condensed Matter system, when one chooses to describe a subset of the degrees of freedom, coupled to the rest. Typically, there is also a separation of timescales involved, and one integrates out the fast variables. In this talk, I shall present two examples of this kind- (i) the dynamics of Majorana zero modes, coupled to a gapless fermionic bath, and (ii) a phenomenological theory of the strange metallic phase in the cuprates, with charge density fluctuations as the main ingredient. In the first case, we shall look into situations where either non-local couplings mediated through the bath, or quartic interactions, modify the expected dissipation rate by giving rise to emergent, slower rates. In the second case, the usual Landau damping of the fluctuations drives strange metallic transport above the critical temperature, while a self-consistent increase in their dissipation parameter at low temperatures consistently extends this regime below it, under strong magnetic fields

Venue : Emmy Noether Seminar Room

Zoom Meeting: <https://icts-res-in.zoom.us/j/95958108375?pwd=fY3SHtvVkpybdce8D6MAaUUyXIEtAy.1>

Meeting ID: 959 5810 8375

Passcode: 202030