ICTS Astrophysics & Relativity Seminar

Title : Probing horizon scale magnetic fields and strong-field gravity with polarized EHT observations of M87*

Speaker : Saurabh K (Max Planck Institute for Radio Astronomy, Germany)

Date : Thursday, 20 November 2025

Time : 3:30 PM (IST)

Abstract : Magnetic fields play a pivotal role in dynamics of black hole accretion flows and formation of relativistic jets. Observations by the Event Horizon Telescope (EHT) provided unprecedented insights into accretion structures near black holes. Interpreting these observations requires a theoretical framework linking polarized emission to underlying system properties and magnetic field geometries. In the talk, I will talk about new EHT polarization results of M87* including 2018 and 2021 observations, and describe how polarized emission can be modeled and interpreted to probe both astrophysics and gravity. The approach emphasizes on a semi-analytic framework for polarized imaging, focusing on magnetic field configurations and show how these models can capture spacetime signatures as well. This also connects to general relativistic magentohydrodynamics (GRMHD) simulations and their role in interpreting the polarization images.

Venue : Feynman Lecture Hall
Zoom Link: https://icts-res-in.zoom.us/j/93108069190?pwd=FFhKO6621C2qDfibzROFyLJLP3AgGk.1
Meeting ID: 931 0806 9190
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