ICTS Astrophysics & Relativity Seminar

Title : Decoding the Mystery of Dark Matter with Celestial Objects

Speaker : Anupam Ray (University of California, Berkeley)

Date : Thursday, 08 January 2026

Time : 3:30 PM (IST)

Abstract : Dark Matter (DM), which constitutes a major portion of our Universe, remains mysterious. Despite decades of experimental and theoretical efforts, its microscopic identity is still unknown to us. In this talk, I will walk you through how a variety of celestial objects can be utilised as powerful DM detectors. This astrophysical probe, complementary to the terrestrial and cosmological probes, covers a significant portion of the DM parameters (DM mass and its interaction strength with nucleons) which otherwise remains elusive. In particular, I will discuss how EM and GW observation of compact stars can act as leading probes for particle DM interactions and how potential axion signals from stellar nuclear transitions could be discovered.

Venue : Feynman Lecture Hall
Zoom Link: https://icts-res-in.zoom.us/j/95989534898?pwd=K4zEeFpk2rvTUUT9H7Nf8kPZXdxsEp.1
Meeting ID: 959 8953 4898
Passcode: 964831