

ICTS Astrophysics & Relativity Seminar

- Title** : Dark Matter Through a Different (Micro) lens
- Speaker** : Nirmal Raj (Indian Institute of Science, Bengaluru)
- Date** : Thursday, 19th September 2024
- Time** : 11:00 AM (IST)
- Abstract** : Microlensing is the temporary magnification of a background star due to the gravitational field of a transiting body, with images typically unresolved. It is a technique that has ruled out massive compact halo objects (MACHOs) and primordial black holes (PBHs) in the asteroid-to-solar mass range as the dark matter of the universe. I will discuss how microlensing may be extended in a number of directions: to dark matter in other macroscopic structures, to the x-ray regime in order to probe a five-decade-wide mass window where PBHs may constitute all the dark matter, and to lenses that are much faster or slower than dark matter such as arise in numerous astrophysical settings. I will also describe a new "halo-independent" formalism for microlensing that integrates out the empirically unknown dark matter density and velocity distributions.
- Venue** : Madhava Lecture Hall
- Zoom Link: <https://icts-res-in.zoom.us/j/92924991787?pwd=NyNQhwWZMpSNyG2SbxbarLxHfff5kX.1>
Meeting ID: 929 2499 1787
Passcode: 101020