ICTS Astrophysics & Relativity Seminar

Title : Faint galaxies and transients in the era of the Vera C. Rubin Observatory

Speaker : Nandini Hazra (National Centre for Nuclear Research, Poland)

Date : Monday, 19 January 2026

Time : 2:30 PM (IST)

Abstract : The Vera C. Rubin Observatory's decadal survey of the southern sky is set to begin on the last days of 2025. In this talk I will start out by briefly outlining the capabilities and broad aims of this survey, known as the Legacy Survey of Space and Time (LSST). Of particular interest are the faint objects that Rubin will discover and unveil, both in the galaxy and transient regimes. Rubin's survey depth will allow us to observe and characterize galaxies fainter than the night sky, known as low surface brightness (LSB) galaxies, over an unprecedented 18,000 sq. deg footprint of the LSST. I will talk about the data, techniques (both traditional and machine learning based) and challenges that we have been working on in order to search for LSB galaxies in this vast dataset in the upcoming years. Rubin will also be a powerful discovery machine to detect faint kilonova transients, both serendipitously and in targeted searches for electromagnetic counterparts to binary neutron star mergers. I will talk about the target of opportunity capabilities of Rubin after the end of LSST, and how it can help us detect statistical samples of multi messenger events in the era of the 3rd generation of gravitational wave detectors like the Einstein Telescope.

Venue : AKR Meeting Room
Zoom Link: https://icts-res-in.zoom.us/j/97134647669?pwd=H2ke5wyONn4iALzdetB7FYsewTZjFl.1
Meeting ID: 971 3464 7669
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