



ICTS Astrophysics & Relativity Seminar

Title : Missing physics in gravitational waveforms and its ramifications

Speaker : Chandra Kant Mishra (Indian Institute of Technology Madras)

Date : Thursday, 13 March 2025

Time : 3:30 PM (IST)

Abstract : Detection of a compact binary on eccentric orbits in ground-based detectors is a tell-tale sign that the binary was formed via dynamical interactions in dense stellar environments. Despite the growing statistics of compact binary mergers observed by LIGO, we are yet to find conclusive evidence for the presence (or lack) of eccentricity in observed events. The non-detection is mainly due to the unavailability of a reliable signal model accounting for all the necessary physics, including the effect of eccentricity. Our recent findings confirm that neglecting eccentricity leads to biased estimates of source properties, altering our current understanding of them. In this talk, I wish to highlight some of our recent efforts focusing on the modelling and analysis of gravitational waves from compact binaries in eccentric orbits.

Venue : Feynman Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/95741658679?pwd=SWIAAqzNlEvnkrPn1fbQayGVNH4aHD.1>

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