



## ICTS Synopsis Seminar

**Title** : Microlensing of gravitational waves as a new tool for astrophysics

**Speaker** : Uddepta Deka (ICTS-TIFR, Bengaluru)

**Date** : Wednesday, 09 April 2025

**Time** : 10:00 AM (IST)

**Abstract** : Gravitational waves (GWs) can be deflected due to the gravitational field of a massive object or a mass distribution. This phenomenon can lead to frequency-dependent modulations in the gravitational waveform, which we refer to as GW microlensing. In this talk I will explore the prospects of GW microlensing as an astrophysical probe. In particular, I will discuss the possibility of constraining the charge of astrophysical compact objects and examine the efficacy of the current microlensing searches that idealise the compact object lens as an isolated point mass. Finally, I will present methods to efficiently compute microlensed gravitational waveforms using surrogate modeling techniques.

**Venue** : Feynman Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/93768365761?pwd=wnXbGVlGJNPeKGPLYdW5XmFsTlc3oa.1>

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