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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

## **ICTS Astrophysics & Relativity Seminar**

**Title** : To Love or Not to Love

**Speaker** : Sumanta Chakraborty (Indian Association for the Cultivation of Science, Kolkata)

**Date** : Thursday, 16 October 2025

**Time** : 3:30 PM (IST)

**Abstract** : Tidal Love numbers provide us a handle to test the nature of compact objects, as well as theories of gravity. There have been several clarifications recently, which makes our understanding of these Love numbers better. I plan to discuss these recent developments. I will show that the tidal Love numbers of a non-rotating black hole identically vanishes in the static case, which is not true in the dynamical scenario. While for rotating black holes the situation is a bit more involved. Besides, I will also discuss fermionic perturbations leading to non-zero static Love numbers for black holes. I will also highlight some remarkable novel features, for ultra-compact objects as well as for quantum BHs.

**Venue** : Feynman Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/94329216888?pwd=VTmwh6cX833fwkeLnGy2BuAHExXot0.1>

Meeting ID: 943 2921 6888

Passcode: 161617