



## ICTS Astrophysics & Relativity Seminar (HYBRID)

**Title** : Insights from GRBs for optical follow-up of gravitational-wave counterparts

**Speaker** : Kruthi Krishna (Radboud University)

**Date** : Friday, 18<sup>th</sup> August, 2023

**Time** : 02:00 PM (IST)

**Abstract** : Identifying the electromagnetic counterparts to gravitational wave sources is vital to enabling the myriad of investigations possible with multi-messenger astronomy. However, locating these faint, fast-varying transients in large sky localisations is exceptionally challenging. Here we use a sample of merger-induced GRBs within the horizon of advanced gravitational-wave detectors to determine if various sky searches could have detected their counterparts. We construct synthetic sky maps for each GRB event assuming they arise from a binary neutron star or a neutron star-black hole merger, and then simulate sky searches of these error regions. By comparing the known counterpart brightness at the time various surveys would have observed, we determine the detectability of these sources. We also discuss the challenges of correctly identifying these sources as their counterpart once detected.

**Venue** : **Offline:** Madhava Lecture Hall (ICTS)

**Online:** Please click the below link to join the seminar

<https://icts-res-in.zoom.us/j/84148268740?pwd=SnZ4d09hcFNpM1pzU3B2T2k3WEJwUT09>