ICTS Postdoc/Graduate Student Seminar Series

Title : Testing Einstein's theory of general relativity using observations of gravitational waves from mergers of binary black holes

Speaker : Abhirup Ghosh, ICTS-TIFR, Bangalore

Date : Friday, October 13, 2017

Time : 11:15 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : On October 3, 2017, the Royal Swedish Academy of Sciences awarded the Nobel Prize in Physics to Rainer Weiss, Kip Thorne and Barry Barish of the LIGO/VIRGO Collaboration "for decisive contributions to the LIGO detector and the observation of gravitational waves". Exactly 750 days earlier (almost exact to the minute), gravitational waves (GWs) produced by the inspiral and collision of two black holes 1.3 billion light years away, passed through Earth on September 14, 2015 and were observed by the twin detectors of the Advanced LIGO, opening a new window of GW astronomy onto the universe. In this talk, I will discuss how these violent events are ideal laboratories to test Einstein's theory of general relativity in the previously unexplored highly dynamic, strong-field regimes of gravity, and how the four GW detections so far allow us to do just that.

Note: This will be an ongoing biweekly seminar series (Fridays, 11:15 am) by the ICTS postdocs and graduate students