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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Astrophysics and Relativity Seminar (HYBRID)

Title : Precision cosmology with gravitational-wave observations

Speaker : B.S Sathyaprakash (Penn State and Cardiff University)

Date : Thursday, 21st December 2023

Time : 03:30 PM (IST)

Abstract : Measurement of the current expansion rate of the Universe using standard sirens is in tension with their estimation from the cosmic microwave background. The recent accelerated expansion of the Universe is attributed to vacuum energy that is in tension with what's expected for the magnitude of vacuum energy in quantum field theory. Additionally, more than five decades after the first hints of dark matter we still don't understand their origin or nature. Gravitational wave observations have the unique potential to address these problems. I will discuss the prospect of resolving these tensions with standard sirens of black hole and neutron star binaries over the next decade and how it will soon be possible to make even more precise measurements of cosmological parameters.

Venue : **Offline:** Emmy Noether Seminar Room (ICTS)

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

<https://icts-res-in.zoom.us/j/92005508396?pwd=eVFMVIM2cUdrNDB0bk9LRUIRVTYxZz09>

Meeting ID: 920 0550 8396

Passcode: 281532