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ICTS Astrophysics & Relativity Seminar

Title : Can gravitational waves constrain star-formation rates in the near future?

Speaker : Divyajyoti (Cardiff University)

Date : Wednesday , 07 October 2026

Time : 02:00 PM (IST)

Abstract : Star-formation rate (SFR) is currently measured with electromagnetic probes, however, these probes face systematics since they often track luminosity which is then converted to SFR depending on various factors such as initial mass function, dust extinction, etc. Moreover, data points about redshift of $z=4$ are difficult to obtain through electromagnetic probes. Gravitational Waves (GWs) can provide an independent probe to constrain star-formation rate at high redshift. In this talk, I will discuss that we do not need to wait for the next-generation (XG) detectors such as Cosmic Explorer and Einstein Telescope to obtain bounds on the peak of redshift distribution. This is achievable with upgraded LIGO detectors such as LIGO-A#. Further, by comparison with XG network and I'll demonstrate how the SFR curve will be extremely well measured with future detectors.

Venue : Feynman Lecture Hall

Zoom Meeting: <https://icts-res-in.zoom.us/j/97342850134?pwd=aifUcQIouSbJtbYiwbVq8USCazK0rY.1>

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