



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Department of Astrophysics and High Energy Physics

6th April, 2023

3.00 PM

ONLINE/ FERMION

SPEAKER

**Dr. Indranil Chakraborty,
A PhD student at IIT - KGP**

TITLE OF THE TALK

A study of gravitational wave memory effects in radiative geometries and wormholes

ABSTRACT

Gravitational memory effects are persistent deformations caused due to the passage of a gravitational wave pulse. It is a nonlinear effect in General Relativity that remains yet to be detected. In this talk, primarily from a theoretical perspective, we study memory effects in two different settings: i) Radiative geometries, ii) Lorentzian wormholes. In radiative geometries, we show how geodesic and geodesic deviation equations encode the gravitational wave memory. In the latter case, we perform a Bondi-Sachs analysis and try to show how the Bondi mass loss depends on the wormhole hair

HOST FACULTY

Dr. S. Gangopadhyay, Associate Professor

Dept. of ASTROPHYSICS AND HIGH ENERGY PHYSICS
