



**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

01st March, 2023

3.00 PM

ONLINE/ FERMION

SPEAKER

**Dr. Rajesh Mondal,
Postdoctoral Fellow,
Tel Aviv University, Tel Aviv-Yafo, Israel**

TITLE OF THE TALK

The 21-cm cosmology

ABSTRACT

Neutral hydrogen (HI) has persisted for much of cosmic history, making it the best tracer to probe the Universe. Observation of the redshifted 21-cm signal due to the hyperfine transition of HI is a promising method to study its three-dimensional distribution in the Universe. The first billion years of cosmic history of the Universe mark the formation of the first stars and galaxies. After years of theoretical predictions, a considerable international effort is now producing the first tentative results, e.g. EDGES, SARAS, GMRT, LOFAR, MWA, HERA, etc. The coming theory and observations will reveal the mysterious era of cosmic dawn and reionization, including the properties of the first stars and galaxies, and possibly more exotic discoveries. There are also plans to probe the pre-stellar "dark ages" with telescopes on the moon. I will give a summary and update on current studies of 21-cm Cosmology and the Epoch of Reionization (EoR).

HOST FACULTY

Prof. Archan S Majumdar

Dept. of ASTROPHYSICS AND HIGH ENERGY PHYSICS
