



**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

24th April, 2023

11.30 AM

ONLINE/ FERMION

SPEAKER

**Dr. Jayanta Dutta,
Post-Doctoral Fellow,
Harish-Chandra Research Institute (HRI)
Jhansi, Prayagraj (Allahabad), UP**

TITLE OF THE TALK

**Formation of the very FIRST STARS (primordial stars) in the Universe
and their survival possibility**

ABSTRACT

In this talk, we will briefly discuss the physical concept of the formation of the very first stars in our observable universe with a particular focus on their possible existence in the present-day galaxies. The entire complex process is reviewed from the point of view of a broad audience who are likely to gain a rudimentary understanding on this highly exciting area of "Theoretical Cosmology". Within that framework, we present a simple computational set-up of classical solid-body rotations for different realizations in terms of strength of rotational support that mimics the actual unstable gas-clumps formed within the dark matter minihalo in any cosmological simulation. The simulations are capable of investigating the protostellar evolution after the formation of the first protostar for highest rotating clumps (~20%) as compared to our previous studies. In this context, we also elaborate our current understanding of their probability of survival as main-sequence stars till today.

HOST FACULTY

**Dr. Ramkrishna Das, Associate Professor
Dept. of ASTROPHYSICS AND HIGH ENERGY PHYSICS**
