



## **INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE**

2A & 2B, Raja S. C. Mullick Road, Jadavpur, Kolkata-700 032

### **School of Physical Sciences**

#### **SEMINAR NOTICE**

- Title** : **Seesaw determination of the dark matter relic density**
- Speaker** : **Dr. Aritra Gupta, University Libre de Bruxelles (ULB), Belgium**
- Date** : **November 02, 2022 (Wednesday)**
- Time** : **16:00 hours (IST)**
- Venue** : **Physics Seminar Room (C-406), 3rd Floor, Centenary Building, IACS**

#### **Abstract:**

We show that in the usual type-I seesaw framework, augmented solely by a neutrino portal interaction, the dark matter relic density can be created through freeze-in, in a manner fully determined by the seesaw interactions and the DM particle mass. This simple freeze-in scenario, where dark matter is not in a seesaw state, proceeds through slow, seesaw-induced decays of Higgs  $W$  and  $Z$  bosons. We identify two scenarios, one of which predicts the existence of an observable neutrino line.

**All are cordially invited to attend the seminar**