

## ICTS Colloquium

**Title** : Deciphering Cosmic Dawn: A Conquest of the Final Frontier

**Speaker** : Hamsa Padmanabhan (Universite de Geneve, Switzerland)

**Date** : Tuesday, 09th July 2024

**Time** : 04: 00 PM (IST)

**Abstract** : The epoch of Cosmic Dawn — the birth of the first galaxies in our Universe, about a hundred million years after the Big Bang — is widely considered as the 'final frontier' of cosmological surveys today. This period is primarily accessible due to radiation from hydrogen, which emits at a wavelength of 21 cm, in the radio band. An exquisite investigation of Cosmic Dawn will soon become possible with a technique called intensity mapping (IM), which measures the integrated 21 cm emission from all sources, using large arrays of radio telescopes. I will overview the latest advances in research related to the evolution of hydrogen over cosmic time, involving a novel data-driven framework to interpret current and future observations. Apart from offering key insights into the nature of the first galaxies, this opens up the exciting possibility of testing theories of fundamental physics from the Cosmic Dawn.

**Venue** : Emmy Noether Seminar Room

Zoom link: <https://icts-res-in.zoom.us/j/97383621362?pwd=iLCabFWHzVUay4m7CfTaYu3YeDAeMn.1>

Meeting ID: 973 8362 1362

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