



भारतीय खगोलभौतिकी संस्थान  
**INDIAN INSTITUTE OF ASTROPHYSICS**  
कोरमंगला Koramangala, बेंगलूरु Bengaluru – 560034.

**स्नातक अध्ययन मंडल Board of Graduate Studies.**

STUDENT SEMINAR  
(Part of Comprehensive Examination)

**Speaker:** Ms. Reena Chaudhary

**Title:** Baryonic Ecosystem: A Challenge Across Galactic Boundaries

**सार Abstract**

Star-forming galaxies across all mass ranges are deficient in the baryons required in their interstellar medium (ISM) to sustain star formation over timescales comparable to their current ages. This raises a fundamental question: where are the missing baryons, and how do galaxies maintain star formation over cosmic time? Numerical simulations suggest that galaxies grow through the accretion of gas from extended, multiphase reservoirs composed of both pristine and enriched material, collectively known as the circumgalactic medium (CGM). However, direct observational constraints on these processes remain limited. Identifying the location, quantity, and physical state of baryons in and around galaxies is therefore crucial to advancing our understanding of star formation, feedback, and galaxy evolution. In this talk, I will present our recent effort to investigate the origin and evolution of metal-rich halos across a wide range of stellar masses and redshifts by tracing cool CGM gas using metal absorption lines. I will also discuss how the cool gas content of the CGM evolves with redshift and explore its broader implications for the baryon cycle and galaxy growth.

मंगलवार Tuesday 14, अक्टूबर October 2025

Venue: प्रेक्षागृह Auditorium

Time: 10:00 AM

सभी का स्वागत है All are welcome.