



भारतीय ताराभौतिकी संस्थान
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स्नातक अध्ययन मंडल **Board of Graduate Studies.**

STUDENT SEMINAR
(Part of Comprehensive Examination)

Speaker: Mr. Rakshit Chauhan

शीर्षक Title: Effect of interactions on the star-forming properties of dwarf galaxies

सार Abstract

Mergers or interactions between galaxies play an important role in their evolution, and these interactions are expected to occur among galaxies of all mass ranges. Although dwarf galaxies constitute the most dominant population of galaxies across all redshifts, and most mergers are expected among them, studies exploring the effects of interactions in these systems are rare compared to those of massive galaxies.

In this context, we conducted a FUV study of a large sample of dwarf galaxies (a total of 6176, with 195 interacting and 5981 non-interacting isolated galaxies, within the stellar mass range of $10^{7-10} M_{\odot}$ and redshift range of 0.00 – 0.12) using GALEX archival data to understand the impact of dwarf-dwarf interactions on their star formation. We find clear evidence for enhanced star formation rate in interacting dwarfs compared to their non-interacting counterparts, across different stellar mass and redshift bins. Further, to understand the effect of interactions on the spatial distribution and properties of star-forming clumps in interacting dwarfs, we performed an FUV study of 26 dwarf galaxies (19 interacting and 7 non-interacting) undergoing different stages of interactions in a stellar mass range of $10^{6-8} M_{\odot}$, in the Lynx Cancer Void, using higher resolution UVIT observations (~ 3 times better spatial resolution than GALEX). An enhancement in star formation rate and star formation rate density for the clumps in the interacting dwarfs compared to the non-interacting galaxies was observed. We also find clear indications of star formation in tidal tails/bridges between interacting galaxies. We are performing a multi-wavelength (FUV + optical) study to characterise these star-forming clumps through SED fits. In this talk, I will present the results from these studies and discuss future studies using multi-wavelength data to understand the evolution of low-mass galaxies.

सोमवार Monday 30, सितम्बर September 2024

Time: 11:00 AM

Venue: प्रेक्षागृह Auditorium

सभी का स्वागत है All are welcome.