



PHYSICS AND ASTRONOMY SEMINAR

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“The Impact of Dwarf-Dwarf Galaxy Tidal Interactions”

Abstract

Two competing effects appear to govern galaxy multiplicity (pairs or groups) at low masses: while associations of low-mass haloes are naturally expected in a LCDM cosmology, galaxy formation within these haloes is thought to be rendered inefficient due to the action of several ionizing agents. Yet associations of dwarf galaxies are known to exist in the Local Volume, and their frequency appears to be unexpectedly high for Λ CDM expectations even in our own Local Group. Unfortunately, it is not yet well understood what role do interactions between low-mass galaxies play in determining their star formation histories, structural properties, and neutral gas content. Here I will present an investigation of the impact of dwarf-dwarf galaxy tidal interactions on their morphological and star formation properties. The UGC5205 close pair consists of two low-mass ($M^* \sim 5E7$ Msun), late-type galaxies with a relative projected distance of only 10 kpc, and no nearby massive companions. I will show that these equal-mass interactions can be an important 'pre-processing' mechanism that acts before dwarfs are affected by a more massive central galaxy, profoundly impacting their star formation histories and morphologies.

Friday, November 08, 2013

10:30 a.m.

MacLaurin Building

Room D103