

Title

A ring in the void: the HI properties of the interacting system of dwarf galaxies ESO179-013

Abstract

ESO179-013 is the smallest and nearest system known that contains a collisional ring. It is in a nearby void and it consists of three interacting dwarfs. The ring is likely the result of the collision between the central galaxy (similar to the Large Magellanic Cloud) and one of its smaller satellites. It is a unique example showing that collisional rings can be also formed in interacting dwarf galaxies. We propose to use MeerKAT to obtain 21 cm observations of the main components of the system at a spatial resolution of ~ 10 arcsec. We aim at studying the morphology and kinematics of the gas of the ring and of the three galaxies, to infer the properties of the system and to investigate the ring formation scenario. These observations will provide an unprecedented opportunity to study a rare phenomenon such as the interaction between dwarf galaxies in a low-density environment, and they will allow us to investigate the role of galaxy interactions/mergers in shaping dwarf galaxy evolution in voids.