

Title

Deep MeerKAT observations of the Coma cluster

Abstract

We propose 30 hours of HI 21 cm spectral line MeerKAT 32k observations of two fields containing ~20 jellyfish galaxies in the Coma cluster to study cluster evolution and galaxy demographics. Coma is the best example for a detailed study of rich clusters. These data will be used as an important component of a comprehensive multi-wavelength study of tails of these jellyfish galaxies, consisting of radio continuum, sub-mm, optical/UV, IR, and X-ray data (highlighted by a recent ALMA large program). Understanding the evolution of the stripped ISM in various gas phases is crucial for determining the stripping history and impact of the gas removal processes on galaxy evolution. Besides the HI work, we will also study the radio continuum in stripped tails, in combination with the data from LOFAR and uGMRT. The new MeerKAT data will also allow deeper studies of the radio halo and filaments at the center of the Coma cluster, also in combination with the data at the lower frequencies.