

Abell 1367: pre-processing in a cosmic filament

Abstract

We propose MeerKAT HI observations of a single field just beyond the virial radius of the Abell 1367 merging galaxy cluster ($z=0.02$). This field targets the base of a cosmic filament extending from Abell 1367 to Coma and contains several groups of galaxies. Existing AGES and other single dish observations strongly suggest these groups in the NE outskirts of the cluster show evidence of pre-processing as they are infalling towards the cluster. The goal of the project proposed here is to understand and quantify the importance and extent of pre-processing within a cosmic filament feeding a major cluster, and to separate the effects of pre-processing from those processes that accelerate the evolution of gas-rich systems in a cluster environment such as ram pressure stripping, harassment, strangulation, and other star formation quenching mechanisms.