

# MeerKAT observations of the shock-heated region of the merging galaxy cluster RX J1347.5-1145

## Abstract

Diffuse radio sources, known as relics, are often detected in the peripheries of merging galaxy clusters long after the sub-clusters merge. It is unclear how they are initially formed when sub-clusters collide. We propose to observe the early-state merging galaxy cluster RX~J1347.5-1145 (hereafter RXJ1347) with MeerKAT L band to study the spectropolarimetric properties of the radio emission in the shock-heated region of the cluster. The presence of radio relic in this region will help us to understand the initial formation of the radio relic.