Talk at Splinter Meeting

Splinter B

PhD Students Meeting

Diffuse radio emisison in CIZAJ0649.3+1801

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Galaxy clusters form through a sequence of mergers of smaller galaxy clusters and groups. During mergers cosmological shocks are driven into the intracluster medium (ICM), these shocks accelerate non-thermal electrons and protons to relativistic speeds. Together with magnetic fields these particles emit synchrotron radiation and may form so-called radio relics. Radio relics are elongated, peripheral, polarized, Mpc-scale diffuse synchrotron sources that appear to have magnetic fields at the micro-gauss level and are generally found in merging systems. In present work Faraday Rotation Measure maps are developed in order to investigate the magnetic field in the galaxy cluster CIZA J0649.3+1801. This cluster is known to posses diffuse emission in the peripheral region and have steep spectrum. By using Rotation Measure (RM) synthesis on multi-wavelength Westerbork Synthesis Radio Telescope (WSRT) observations (between 1.2 to 1.7 GHz), we aim for unveiling the nature of the diffuse emission by studying its Faraday spectra .