

Talk at Splinter Meeting

Splinter B

RECONCILING RADIO RELIC OBSERVATIONS AND SIMULATIONS:
THE CASE OF THE MUSIC-2 RE-SIMULATED CLUSTERS AND NVSS

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Galaxy clusters are the largest gravitationally bound structures in the universe and form the 'knots' of the cosmic web. They are known to take part in the large scale structure formation as they mainly grow through cluster-cluster mergers. Cluster scale synchrotron emission not associated to the galactic population within the clusters has been found in the radio regime. Referred to as diffuse radio emission, it is thought to stem from a variety of particle acceleration mechanisms within the intracluster medium (ICM).

There have been remarkable efforts in the last years to explain some these structures - the so called radio relics - in the context of shocks propagating through the ICM.

We address the need for a direct comparison of simulations and observations of those objects on the basis of a self consistent population analysis. This is done for the sample of known radio relics covered by the NRAO VLA Sky Survey (NVSS) and the relics identified within the MULTIdark SIMulations of galaxy Clusters-2 (MUSIC-2). The focus is set on the scaling relations of the most accessible measurands.