
The low-frequency radio view of merging galaxy clusters

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Résumé

Non-thermal radio emission are generated in dynamically disturbed galaxy clusters during their mergers events. In such events sudden increase in bulk motion of ICM produces Mpc-scale shock fronts and stirs the ICM creating large-scale turbulent eddies, with size up to several hundred kilo-parsecs. The non-thermal emission takes the form of cluster-wide radio halos, mini-halos and relics, further implying the presence of relativistic particles and magnetic fields within the intracluster medium. These sources reveal a population of ultra-relativistic electrons coexisting with the intracluster thermal gas. The origin of these relativistic electrons is one of the most intriguing problems of cluster astrophysics. Low-frequency radio observations play a crucial role in the study of these diffuse sources. In this presentation I will discuss about the low frequency nature of a number of well-studied sources selected from our low-frequency survey of massive clusters with the GMRT and compare results available from LOFAR, MWA.

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