

The interplay between relativistic plasma and thermal gas in a galaxy group

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Thanks to the continuous improvement in capabilities of the instrumentation it is now possible to probe the non-thermal phenomena occurring in galaxy groups, which are still poorly explored systems with respect to massive galaxy clusters in the radio regime.

In this project we present the NGC7618/UGC12491 major group merger that has been intensively studied in the X-rays, showing a series of complex features, but that still lacks a detailed radio investigation. Our focus is thus to complement the X-rays with a multi-frequency study using data obtained from LOFAR at 144 MHz, GMRT at 323 and 608 MHz and JVLA in L band.

Preliminary images show the presence of diffuse radio emission at the center of NGC7618, whose nature is ambiguous. A likely scenario is that the emission comes from material ejected by the central AGN and then distributed by sloshing motions.

The aim of the work is to shed light on the origin of this source by combining the X-rays and radio observations.

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