

The Third National Workshop on the SKA Project - The Italian Route to the SKAO Revolution



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The physical fate and observable properties of fossil radio electrons in large-scale structures

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Low-frequency observations with SKA's precursors and pathfinders are unveiling an exciting new variety of complex radio morphologies, associated with ageing and re-accelerated plasmas injected by radiogalaxies. It is becoming increasingly evident that we need to better model the evolution of such "fossil" electrons, in order to understand the reservoir of electrons which accretion phenomena use to produce large-scale diffuse radio emissions, which the SKA will observe with unprecedented detail and statistics.

I will present recent numerical modelling of the evolution of radiogalaxies and of their remnant lobes long after their release into the intracluster medium (Vazza et al. 2021 A&A <https://arxiv.org/pdf/2102.04193.pdf>), as tool to better interpret existing low-frequency radio observations, and prepare for the modelling of future deeper SKA data.

Research area

Extragalactic Continuum (galaxies/AGN, galaxy clusters)

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Session Classification: Non-Thermal Processes in Galaxy Clusters