

---

# Particle acceleration on the largest scales: radio emission in clusters of galaxies

Bonafede Annalisa\*<sup>1</sup>

<sup>1</sup>Hamburg University – Allemagne

## Résumé

Galaxy clusters are the largest systems in our Universe, and unique laboratories to study particle acceleration and magnetic field amplification in an almost perfect plasma.

Mpc-size radio sources are observed in an increasing number of galaxy clusters. They are called

”radio halos” and ”radio relics” and have been interpreted since the beginning as turbulent and shock acceleration sites during cluster-cluster mergers.

In my talk, I will show the main pro and contra of the proposed models, and I will show new radio observations

recently obtained with LOFAR, the Very Large Array and Giant Metrewave Radio Telescope which challenge the commonly adopted scenario for radio relics.

I will show how LOFAR and SKA will shed light on the nature of the magnetic field amplification and particle acceleration in galaxy clusters.

---

\*Intervenant