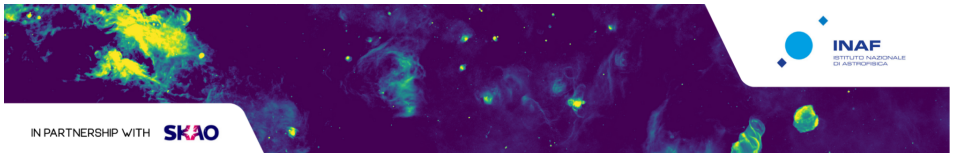

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The Euclid view on the connection between mergers and radio activity from galaxies

Wednesday 26 November 2025 14:30 (15 minutes)

We present a joint analysis of the radio and optical morphological properties of LOFAR sources in the Euclid Deep Field North. Radio sources have been separated into AGN and star-forming galaxies and further subdivided according to their radio appearance (e.g. whether point-like or extended/complex). This information has then been complemented with Euclid/VIS images which provide a snapshot of the merging or isolated status of their host galaxies. We find that radio-AGN are mostly associated with merging systems, with a more marked preference observed for complex radio sources (about 50% vs a mere 15% in the case of association with isolated galaxies). The exact opposite is instead found for star-forming galaxies which mostly reside within isolated systems. Thanks to the exquisite statistics provided by Euclid and LOFAR observations which enable us to analyse samples with different luminosities and belonging to different redshift ranges, we will then discuss what the main drivers for the observed trends are, i.e. whether due to cosmological evolution or radio activity.

Topics

Galaxy Evolution & AGN

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