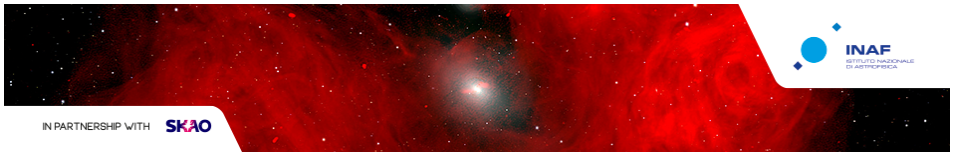


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# The LOFAR view of the Euclid Deep Field North

*Thursday 30 November 2023 11:30 (20 minutes)*

LOFAR has proved to be one on the most successful SKA pathfinder in the Northern emisphere opening up a poorly investigated radio window providing observations with unprecedented sensitivity and resolution, in particular with the addition of the International Stations.
During the past year the International LOFAR Telescope (ILT, aka LOFAR-VLBI) data analysis has been greatly improved and refined reaching sub-arcsec resolution imaging at 144 MHz with noise of a few tens of microJy/beam (for an 8-hr observation) on a routine basis.
The improvement of about a factor of 20 in angular resolution (from 6" of LOFAR to 0".3 of ILT) is fundamental to study the bulk of radio sources detected in the deep fields which are located at redshift about or greater than 1 and, at the same time, to obtain images of the lobes and hotspots of the brightest giant radio galaxies in the field with unprecedented details at this frequency.
The LOFAR Deep Fields are a great opportunity to exploit the sub-arcsecond resolution of the ILT since the main targets of these deep observations are galaxies at z => 1 and the longer observations allow to reach noise level around 10 microJy/beam.
In this talk I will present the results obtained from 72 hours of observation centered on the Euclid Deep Field North (EDFN) in the North Ecliptic Pole (NEP) region. In particular, I will show and discuss some of the deepest ILT images (rms ~15 microJy/beam) obtained so far of high-redshift radio galaxies and bright sub-mm sources in the NEP region.

## Reasearch area

Extragalactic Continuum (galaxies/AGN, galaxy clusters)

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