

Apertif: new continuum data release and project update

Tuesday, 16 May 2023 14:15 (15 minutes)

New phased array feed for the Westerbork synthesis radio telescope, Apertif, provides L-band continuum radio images of the sky with angular resolution and sensitivity significantly better than the previous state-of-art northern survey, the NRAO VLA Sky Survey (NVSS). We continue processing Apertif data and releasing it for the community.

In this work we mosaic together Apertif observations of the Boötes field and extract a source catalog. The image covers 25 square degrees, has an angular resolution of $27 \times 11.5''$ and a median background noise of $40 \mu\text{Jy}/\text{beam}$. The catalog has 9000 sources and is complete down to the 0.3 mJy level. We combine the Apertif image with the LOFAR deep images of the Boötes field at 54 and 150 MHz to study spectral properties of the sources. There is a steepening of spectral index both with a flux density and redshift seen in the data. This can be explained if most of the sources have peaked spectra with a turnover frequency around the LOFAR band. We also give an update on the overall status of the Apertif project and discuss future plans.

Primary author: KUTKIN, Alexander (ASTRON)

Presenter: KUTKIN, Alexander (ASTRON)

Session Classification: Plenary Session

Track Classification: Instrumentation