The LOFAR Faraday rotation measure grid

Abstract

Observations of the linear polarization and Faraday rotation measure (RM) of radio AGN provide insight into the magnetic field properties of the radio source as well as foreground magnetised gas. Here I will present the ongoing efforts to produce an RM grid across the northern sky at 150 MHz using data from the LOFAR Two-metre Sky Survey (LoTSS). The unrivalled RM precision provided by LoTSS Data Release 2 (_˜27% of northern sky) has already facilitated advances in our understanding of the magnetised gas properties of filaments of the cosmic web (WHIM) and the halos of galaxies (CGM). With over 50% of the northern sky now processed at an angular resolution of 20" and new detections of polarized emission at 0.3", LoTSS continues to provide unique opportunities for the investigation of cosmic magnetic fields.