Contribution ID: **9** Type: **Talk**

The magnetised intergalactic medium revealed by ASKAP and LOFAR

Wednesday, 8 May 2024 13:30 (25 minutes)

Using broadband radio polarimetry we can probe regions of diffuse ionised and magnetised gas that are challenging to detect by other means, such as in the halos of galaxies (CGM), galaxy clusters (ICM), and filaments of the cosmic web (ie. WHIM). Here I will highlight recent results from the LOFAR and ASKAP radio telescopes, that use the effect of Faraday rotation to illuminate the CGM, ICM and WHIM gas. In particular, I will present the latest progress of the LOFAR Two Metre Sky Survey (LoTSS) Faraday rotation measure grid, and provide some early results from the ASKAP-POSSUM survey. As the quality and quantity of the radio data improves, we can combine it with other tracers of cosmic structure in order to better understand the role this diffuse magnetised gas plays in the evolution of galaxies and the cosmic web in general.

keywords

cosmic web, magnetic fields, polarisation, Faraday rotation

In-person or online?

in-person

Career level

Mid-Senior

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Session Classification: Clusters/LSS