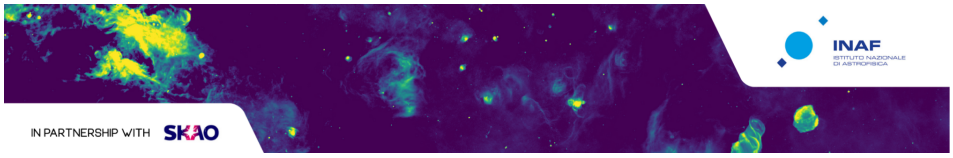

Contribution ID: **69** Type: **not specified**

Epoch of Reionization observations with SKAO: lessons learnt from LOFAR and synergies with MeerKAT

Tuesday 25 November 2025 09:30 (15 minutes)

Observations of the redshifted 21-cm signal from neutral hydrogen during the Epoch of Reionization and Cosmic Dawn are crucial for understanding the physics of the early Universe and one of the SKAO main science goals. Detecting this signal, however, remains challenging due to the presence of bright astrophysical foregrounds and instrumental systematics. Current low-frequency SKAO pathfinders are playing a key role in developing the data analysis techniques needed for the upcoming SKA-Low observations. In this talk, I will present recent progress with LOFAR –an SKAO pathfinder –, including advanced techniques for modelling and subtracting bright foreground sources, as well as the latest power spectrum results, which currently provide the most stringent upper limits at z~9. I will discuss how these lessons will inform early SKAO observations and I will also introduce how the cross-correlation between the 21-cm signal and other probes can aid a detection, focusing particularly on the cross correlation with MeerKAT CO intensity mapping observations.

Topics

Epoch of Reionization and Cosmic Dawn

Author: CECCOTTI, Emilio (Istituto Nazionale di Astrofisica (INAF))

Presenter: CECCOTTI, Emilio (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Epoch of Reionization