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ESO SKA Synergy: Cross-correlating 21-cm with Lyman alpha emitters during the EoR (remote talk)

Tuesday 25 November 2025 09:15 (15 minutes)

The Epoch of Reionization (EoR) remains one of the last frontiers of observational cosmology. The Square Kilometer Array (SKA) is poised to make a preliminary detection of the 21-cm EoR signal within the next decade, and the race will ignite for a confirmation of this detection. One of the most promising avenues is through cross-correlation with galaxies in the same field. I present a framework for self-consistently simulating 21-cm and Lyman alpha emitter fields and then computing their cross-power spectrum, including forecasts of the achievable signal-to-noise ratio of a cross-correlation measurement made with various survey configurations. I highlight the potential of ESO MOSAIC spectroscopy to help us understand an early detection of the 21-cm EoR signal from the SKA in its AA* configuration.

Topics

Epoch of Reionization and Cosmic Dawn

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