

## **SESSION 2: Theoretical models and simulations**



# Early galaxy formation and its large-scale effects

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**Abstract.** Galaxy formation in the first billion years mark a time of great upheaval in the history of the Universe: the first galaxies started both the ‘metal age’ as well as the era of cosmic reionization. I will start by reviewing the dust production mechanisms and dust masses for high-redshift galaxies which will be revolutionized in the ALMA era. I will then show how the JWST will be an invaluable experiment to shed light on the impact of reionization feedback on early galaxy formation. As we look forward towards the era of 21cm cosmology, I will highlight the crucial and urgent synergies required between 21cm facilities (such as the SKA) and galaxy experiments (JWST, E-ELT and Subaru to name a few) to understand the physics of the epoch of reionization that remains a crucial frontier in the field of astrophysics and physical cosmology. Time permitting, I will try to give a flavour of how the assembly of early galaxies, accessible with the forthcoming JWST, can provide a powerful testbed for Dark Matter models beyond ‘Cold Dark Matter’.

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