
The ISM and star formation in galaxies

Livia Vallini*¹

¹Leiden Observatory [Leiden] – Netherlands

Abstract

The advent of ALMA, soon to be complemented by JWST and E-ELT, has started to revolutionise the study of the ISM in the first galaxies. In the last few years, the unprecedented spatial resolution and sensitivity of ALMA has enabled the detection of [CII] 158 μ m, [OIII] 88 μ m, and CO line emission in normal (SFR < 100 Msun/yr) galaxies at $z > 6$, thus opening up a window on all the gas phases (molecular, neutral, ionized) in galaxies during the EoR. We are entering the era in which the combination of exquisite data in the sub-mm bands provided by ALMA with new generation of physically-rich, high resolution, zoom simulations will allow to investigate the interstellar medium and the star formation properties of early galaxies. This will allow to shed light on key processes as the cosmic history of baryons, feedback, and galaxy evolution. I will review the present status and the open questions in the field.

*Speaker