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Dwarfs4MOSAIC: A 2D study of low-mass star-forming galaxies as low-redshift analogs to reionization-epoch primeval galaxies. A pilot study for MOSAIC at ELT

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Abstract

MOSAIC is a versatile multi-object spectrograph optimized for a large number of science cases needing multiplex capabilities. It is intended to provide unique observational capabilities at the ELT, with multi-object observations at two spectral resolution modes (LR and HR), making use of the entire Field of View available at the ELT (∼40 arcmin2). MOSAIC has two channels fed by MOS fiber bundles: VIS, and NIR (and H bands). Additionally, NIR channel has a mIFU mode with 8 Integral Field Units. MOSAIC plans to reach the Preliminary Acceptance in Europe (PAE) in 2032. The MOSAIC consortium has ∼350 members belonging to 31 laboratories from 23 institutional partners spread over 13 countries (Austria, Brazil, Finland, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, United Kingdom and USA).

Dwarfs4MOSAIC is a project selected by the Observatorios de Canarias International Time Programme (ITP) February 2023 and February 2024 Calls for proposals. The aim is to study their physical properties and kinematics and shed light on the reionization epoch and the general role of low-mass galaxies in galaxy evolution. Low-mass (dwarf) galaxies constitute the dominant galaxy population and are the building blocks of galaxies as we see them today. For more details see https://guaix.ucm.es/dwarfs4mosaic

Combining ancillary multi-wavelength data with our detailed 2D spectroscopic analysis and using recent models we will be able to study: (a) the role of feedback, cooling, active galactic nuclei; (b) element enrichment; (c) early evolution of gas and dust; (d) the role of the close environment. By studying nearby resolved dwarf galaxies, we will be able to form a bridge with high redshift primeval galaxies. The final goal is to create a reference galaxy sample to test strategies and models for future studies of primeval galaxies with MOSAIC.

My poster in zenodo.org can be found here