

Title:

The challenge of measuring the star formation rate of galaxies.

Abstract:

Measuring star formation, one of the main drivers of galaxy formation and evolution can be surprisingly challenging: contamination of star formation tracers by unrelated processes, effects of the star formation history, uncertain correction for the attenuation, fundamental uncertainties on the stellar models, etc. This has direct consequences on our ability to understand how star formation dictates the evolution of galaxies.

I will present during this meeting a series of recent efforts aiming at addressing some of these issues. I will show how some of the most classical star formation rate estimators may actually be systematically biased and how the combination of SED models with spatially resolved observations has been used to construct highly innovative SFR estimators that eliminate some of these biases. Then looking towards the future as Euclid and JWST are going to provide us with critical spectroscopic information on galaxies I will present an on-going effort to expand SED models to include such information and measure the SFR in particular, and the physical properties of galaxies in general.