

## X51a Analysis of the spatially resolved SFR – M relation for DustPedia galaxies

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The majority of star-forming galaxies follow a relatively tight relation between stellar mass and star formation rate (SFR) in a wide range of redshifts. This is known as the star-forming galaxy main sequence (SFMS). Recent studies have shown that the SFR surface density ( $\Sigma$  SFR) traces the stellar mass surface density ( $\Sigma$  M) in kpc scales. This resolved SFMS indicates the connection between the global SFMS and the local processes.

In this work, we made an extensive analysis of the SFMS based on the DustPedia database (Davies et al. 2017), which provides access to multiwavelength imagery and photometry for hundreds of nearby galaxies. The spatially resolved SFR and mass is estimated through various approaches. (Querejeta et al. 2015, Wen et al. 2013, Bigiel et al. 2008, etc.)

Star formation is a complex process that involves multiple scales. We try to use statistical methods to analyze and classify the SFMS, but includes more characteristics of the galaxy (like the morphological statistics). We try identifying the star forming regions in galaxies with algorithms, and study their relative position inside the galaxy. We study the spaxel SFR and mass variance with respect to their distance to the galaxy center. We try to understand the quenching process for these galaxies.

In this talk, we present the results.