Star Formation Histories on the COSMOS-Web galaxies: Preliminary.

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With the arrival of the first data of the James Webb Space Telescope (JWST), the scientific community has had access to amazing samples to study galaxy evolution. The past decade has seen tremendous progress in the Spectral Energy Density (SED) fitting techniques, allowing us to extract physical parameters from a wide wavelength baseline, such as the Star Formation and its evolution with time, which play a fundamental role to characterize the evolving galaxies. This work is based on the Code Investigating Galaxy Emission (CIGALE), assuming a large variety of non-parametric star formation histories (SFHs). In this presentation I will first show a short example on the study of radio emission as star formation tracer, focusing on the timescale probes by the radio in the light of the reconstructed SFH. Then I will present results on the creation of physical parameters catalogs from the most recent COSMOS-web observations. I will discuss the robustness of CIGALEs' non-parametric SFHs using The Horizon-AGN Hydrodynamic simulation to finally present preliminary results on the galaxy classification via a machine learning approach and the link between the SEDs and SHFs.

- Key Words: Star Formation History, Galaxy Evolution, Galaxy Classification, SED-fitting.