

constraints on the total SFR density.

Another key relation to forecast the signal in [CII] intensity mapping experiments is the SFR-[CII] relation. At high redshift, the warmer CMB and the stronger intensity of the interstellar radiation field (lower metallicity, higher star formation efficiency) could imply a lower normalization. Measuring this relation at high redshift is difficult because it requests to build comprehensive samples of [CII] emitters, but also to estimate accurately their SFR. I will present the new ALPINE constraints showing that there is no significant average [CII]-deficit compared to the local relation up to $z \sim 6$, which is an excellent news for first-generation [CII] intensity mapping experiments.