

X74a Estimation of the Star Formation Rate of Galaxies with Radio Continuum Obtained with Murchison Widefield Array: Final Result

竹内 努 (名古屋大, 統数研), Suchetha COORAY, 岩崎 大希, 吉田 俊太郎 (名古屋大), Luca CORTESE (ICRAR), O. Ivy WONG (CSIRO), Barbara CATINELLA (ICRAR)

We investigate the correlation between the integrated low-frequency and infrared (IR) emissions of star-forming galaxies extracted from the *Herschel* Reference Survey. By taking advantage of the GaLactic Extragalactic All-sky MWA (GLEAM) survey operated by the Murchison Widefield Array (MWA) we examine how this correlation varies at a function of frequency across the 20 GLEAM narrow bands at 72–231 [MHz]. These examinations are important for ensuring the reliability of the radio luminosity as a SFR indicator. In this study, we focus on 18 star-forming galaxies whose radio emission is detected by the GLEAM survey. These galaxies show that a single power-law is sufficient to characterise the far-infrared-to-radio correlation across the GLEAM frequency bands and up to 1.5 [GHz]. Thus, the radio continuum in this wavelength range can serve as a good dust extinction-free SFR estimator. Though this radio SFR estimator is constructed at $z = 0$ with Milky Way-like galaxies, it is a good starting point to extend it to higher- z . We will show the complete result of this analysis.