Contribution ID: **263** Type: **Poster Presentation**

The Evolution of the Infrared–Radio Correlation with Redshift and Stellar Mass for galaxies in the MIGHTEE COSMOS field.

We investigate the evolution of the infrared–radio correlation (q_{IR}) as a function of redshift (z) and stellar mass (M_*) for star-forming galaxies (SFGs) in the COSMOS field, using MIGHTEE Early Science data. We use radio-detected galaxies with multi-wavelength counterparts to classify sources as radio-quiet AGN (RQ AGN), radio-loud AGN (RL AGN), and SFGs over the redshift range $0 < z < 6$. We calibrate the star formation rate (SFR)–1.4 GHz radio luminosity ($L_{1.4\ \mathrm{GHz}}$) relation for both SFGs and RQ AGN. Both populations exhibit a positive correlation between SFR and $L_{1.4\ \mathrm{GHz}}$, and we find that RQ AGN have similar SFR–$L_{1.4\ \mathrm{GHz}}$ calibrations as SFGs. We further examine the evolution of q_{IR} (infrared-radio luminosity ratio) with redshift in different M_* bins. For high-mass galaxies ($M_* > 10^{9.5}$ M), q_{IR} declines with increasing redshift and stellar mass due to enhanced magnetic fields in star-forming regions that elevated radio luminosities in massive star-forming galaxies.

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