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Presentation Requested: oral

Category: Evolution of the Interstellar Medium and Star formation over Cosmic Time

Question: Other

Using the Dust Continuum to Measure ISM masses and Evolution at High Redshift

I will describe the foundations for using the long wavelength dust continuum emission to measure the ISM contents of high z galaxies. The empirical basis for this is derived from 3 samples: Planck measurements of the Milky Way, submm imaging of local galaxies and high z SMGs. All of these high mass (solar metallicity samples) yield the same mass to flux ratio. With ALMA, the continuum observations can be done 20 times faster than in CO and one avoids issues of the CO to H₂ conversion factor. I present Cycle 0 results for 105 galaxies to $z = 2.5$ which show clear evolution with redshift and describe how Cycle 2 observations can extend this work.