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Presentation Requested: oral

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

Question: Is there a common Schmidt-Kennicutt law at all redshifts and all scales? How is this "law" affected by different measurement limitations or conversion factors from tracer molecules or emission / absorption lines to amounts of gas and SFR?

Molecular gas content of extreme outliers from the star-forming main sequence at $z \sim 1.6$

It is currently unclear whether galaxies with the highest rates of star formation, at the peak cosmic epoch of stellar growth, convert gas into stars in a mode dissimilar to the majority that lie in a "main sequence". Such outliers may either be simply gas rich or have a higher conversion efficiency possibly similar to local ULIRGs and maybe even driven by major mergers. We report on spectroscopic observations with ALMA in Cycle 1 of five such cases to detect CO. Our sample is based on a large near-infrared spectroscopic survey of star-forming galaxies at $z \sim 1.6$ (PI Silverman) in COSMOS using Subaru/FMOS. SFRs are measured using multiple indicators (UV, far-IR and $H\alpha$). The NIR spectra further enable us to characterize the chemical enrichment and dust content of the ISM. We will discuss our future plans to use ALMA for studying the ISM of "main sequence" galaxies at $z \sim 1.6$.