*Uncovering Early Galaxy Evolution in the ALMA and JWST Era*
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# Sub-galactic views of cold gas and dust in distant star-forming galaxies: Pushing the ∼100 pc frontier at $z \sim 3$

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**Abstract.** While the evolution of spatially-integrated properties of galaxies are relatively well constrained across cosmic time, many of the most fundamental processes are not well understood, especially down to the sub-galactic scales, where frontier questions in galaxy evolution lie: How did galactic spheroids form? How did galaxies and their supermassive black holes co-evolve? With the angular resolution capability of ∼tens of milliarcseconds, ALMA has conferred extinction-independent views of cold gas and dust distributions within individual $z \sim 1-4$ galaxies at resolutions approaching $\sim 100$ pc, thereby opening new avenues to study sub-galactic properties of galaxies at the peak of their assembly. In this talk, I will review recent findings and ongoing challenges enabled by ALMA's extinction-independent, spatially-resolved views of star forming galaxies, particularly the galactic substructures, e.g., clumps (or the lack thereof) from both field and gravitationally-lensed galaxies, and their implications on the bulge assembly scenario. I will also discuss a new synergistic approach between radio and millimeter observations (using, e.g., VLA and ALMA) to independently pinpoint the locations of star-forming region and AGN down to $< 100$ pc at $z \sim 3$. Lastly, I will discuss the planned surveys with JWST in the first year of operation, and ways that the first datasets can be combined with ALMA to provide new breakthroughs and plan future observations to utilize Webb to the fullest.