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The HerMES Consortium ()

The H-ATLAS Consortium ()

Presentation Requested: oral

Category: Assembly of Galaxies / Mass & Structure Evolution

Question: What are the most recent advances in submillimeter detected galaxies? Now that ALMA offers the possibility for resolving them what have we learned about their sizes, gas fractions, distribution of gas, dust and stars.

Probing Galaxy Evolution Using Strong Gravitational Lenses Discovered by Herschel

Wide-field surveys conducted by the Herschel Space Observatory have discovered an exciting population of dusty star-forming galaxies (DSFGs) at $z > 2$ that are gravitationally lensed by an intervening galaxy or group of galaxies along the line of sight. These systems are extremely useful probes of galaxy evolution because (1) they act as cosmic telescopes that increase the apparent brightness and size of the background source, facilitating follow-up observations; and (2) they provide an independent measurement of the mass of the foreground lens(es). I will present results from ALMA Cycle-0 0.5arcsec, 870um imaging of 29 lensed DSFGs discovered by Herschel. I will focus on the intrinsic sizes and luminosities of these galaxies and compare to my published work on 30 DSFGs with similar data from the Submillimeter Array. Finally, I will discuss the promising future for studying the lensing galaxies found by Herschel, as they tend to be lower mass and/or at higher redshift than optically-selected lenses.