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Presentation Requested: oral

Category: Assembly of Galaxies / Mass & Structure Evolution

Question: Other

The role of merger in high- z IR-luminous galaxies testing the merger disk classification schemes at high- z

Galaxy interactions/mergers are known to dominate infrared luminous galaxies in the local universe. However, it is unclear if this is still the case at high- z . Multi-wavelength observations are essential for the identification of mergers at different redshifts, e.g., through the disturbed morphological features and kinematic properties. A careful comparison between local and high- z observations controlling for sample selection and correcting for systematic biases in the datasets is critical to truly address how the importance of galaxy interactions varies across cosmic time. Here I present our ongoing efforts to make such comparisons using optical morphological properties between local IRAS-selected galaxies and their high- z Herschel-elected IR-luminous counterparts in the COSMOS field (Hung et al. 2014). I also discuss the robustness of the merger/disk classification scheme developed based on the kinematic properties of high- z galaxies. Using artificially redshifted local galaxies with known merger status, we show that the kinematic classification scheme is unable to accurately determine the merger/disk nature of later stages mergers. Since these merger/disk classification schemes are the key for understanding the role of mergers in high- z star-forming galaxies, significant refinements of these classifications are needed for improved interpretation of ALMA and near-infrared IFS observations.