
[ㄹGC-34] Submillimeter Galaxies and Their Environments

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Submillimeter galaxies are the progenitors of massive galaxy formation, and therefore their interaction with the early intergalactic medium must be an important subject in the cosmology and galaxy astrophysics. However, their detailed relation between the galaxies and surrounding environments is still largely unknown. In this poster, we will present the characteristics of their surrounding environments of a large sample of mm-detected submillimeter galaxies. We will also discuss the proposal for the future observations of these galaxies and their environments using the ALMA and the GMT.

[ㄹGC-35] Statistical Analysis of Fly-by interactions between Galaxies via Cosmological Simulations

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Galactic fly-by interactions are believed to be far more frequent than direct mergers, acting as hidden drivers of galaxy evolution. We perform a tree-particle-mesh code GOTPM, and investigate the statistical properties of the fly-by interactions as functions of halo masses and ambient environments. Based on the total energy of the two halos of interest, impulsive fly-by pairs are identified from eventual merger candidates. We find three obvious results as follows: (1) Halos in the high-dense environment experience more frequent mergers and fly-by encounters than those in the low-dense region; (2) In the massive halos, both merger and fly-by fractions evolve more dramatically with time than those in dwarfs; and (3) The fly-by fraction decreases as approaching the present epoch, in contrast to the increase of the merger fraction.