[포GC-12] Spatial distrbibution of star formation in extremely strong Hα emitters

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We present Palomar/SWIFT integral field spectroscopy of z~0.2 strong Hα emitters identified in the Sloan Digital Sky Survey. The large Halpha equivalent widths as well as the huge specific star formation rates of these galaxies are comparable with that of z>4 Lyman break galaxies, thus understanding the gas kinematics and the distribution of massive stars in these systems will help to obtain a better understanding of high-redshift star forming environments and the growth of massive galaxies. We measure the velocity dispersion across the entire galaxy, estimate the number density and the spatial distribution of massive stars from the emission line morphologies. The role of minor mergers in powering star formation is investigated as an alternative to cold flow driven star formation.

[포GC-13] Unstructured Moving-Mesh Hydrodynamic Simulation

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We present a new hydrodynamic simulation code based on the Voronoi tessellation for estimating the density precisely. The code employs both of Lagrangian and Eulerian description by adopting the movable mesh scheme, which is superior to the conventional SPH (smoothed particle hydrodynamics) and AMR (adaptive mesh refinement) schemes. The code first generates unstructured meshes by the Voronoi tessellation at every time step, and then solves the Riemann problem for all surfaces of each Voronoi cell so as to update the hydrodynamic states as well as to move current meshes. Besides, the IEM (incremental expanding method) is devised to compute the Voronoi tessellation to desired degree of speed, thereby the CPU time is turned out to be just proportional to the number of particles, i.e., O(N). We discuss the applications of our code in the context of cosmological simulations as well as numerical experiments for galaxy formation.