$z = 0.0004$. While the formation history of stars older than ~ 1010yr depends mainly on the luminosity of galaxies, the formation history of stars younger than ~ 108yr is mainly affected by their environment. However, luminosity and environment are equally important for the star formation history if there is no star formation at the early phase of galaxy formation.

[포 GC-10] On the origin of low escape fractions in LBGs at z ~ 3

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Theoretical models of reionization require that approximately 10% of the Lyman Continumm (LyC) photons escape from their host dark matter haloes and re-ionize neutral hydrogen in the Universe. However, observations of Lyman break galaxies (LBGs) at z~3 report much lower escape fractions of f_{esc}~1%. In an attempt to understand the discrepancy, we perform radiation-hydrodynamics simulations of isolated disk galaxies using RAMSES-RT with high resolution (maximum ~ 9 pc). We find that f_{esc} is ~6% on average for the reference run (Z= 0.1Z⊙), whereas the fraction decreases to ~1% in the case of metal-rich disk (Z= 1Z⊙). This happens because dense metal-poor gas clumps are disrupted early due to strong Lya pressure and supernova explosions, while star particles are trapped for a longer period of time in the metal-rich environments. We also find that f_{esc} is still significant (~4%) even when the amount of metal-poor gas is increased by a factor of 5. Our preliminary results suggest that the low escape fractions in LBGs may be better explained by (locally) metal-enriched gas near young stars than high gas fractions in galaxies.

[포 GC-11] Ionized gas outflows in z~2 WISE-selected Hot Dust Obscured Galaxies

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The Wide-field Infrared Survey Explorer (WISE) mission enabled efficient selection of Active Galactic Nuclei (AGN) with high luminosities and large obscuration. According to the merger driven AGN powering scenarios, luminous and obscured AGN are in a stage where they go through feeding of gas accretion into the central black hole, and feedback to the host galaxy through outflows. We report the rest-frame UV-optical spectra of Hot Dust Obscured Galaxies (Hot DOGs) at z~2, WISE color-selected to be extremely reddened AGN. Most of the targets show blueshifted and broadened [OIII] line profiles indicative of ionized gas outflows. We present the occurrence and strength of the outflows, and discuss the impact of luminous, obscured AGN activity on their hosts.

우주론/암흑물질,에너지

[포 CO-01] Analytical halo model of galactic conformity

Isha Pahwa
KIAS
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Galactic conformity is an observation that satellite galaxies in groups whose central galaxy is red are preferentially red, even when the groups are restricted to reside in dark matter halos of the same mass. In this talk, I will present a fully analytical halo model of colour-dependent clustering which incorporates the effects of galactic conformity in a halo occupation distribution (HOD) framework. This model describes conformity through a correlation between the colour of a galaxy and the concentration of its parent halo, leading to a correlation between central and satellite galaxy colours at fixed halo mass. The strength of the correlation is set by a tunable 'group quenching efficiency'. I will show that our model can separately describe the group-level correlations between galaxy colour (1-halo conformity) and large scale correlations induced by assembly bias (2- halo conformity). Further, I will talk about our analytical clustering results and compare them with that of mock galaxy catalogs, showing that this model is accurate at the 10-20 percent level for a wide range of luminosities and length scales.

천문우주관측기술

[포 AT-01] Mirrors and Optomechanical Structures Design and Analysis for Linear Astigma-tism Free Three Mirror System (LAF-TMS)