the direction facing away from the cluster centre. Thanks to the revolutionary wide field-of-view of the MUSE, combined with 8.2-m VLT (UT-4) at Cerro Paranal, we could simultaneously obtain IFU spectra of the blobs, as well as the galaxy. The MUSE spectra clearly confirms that the star-forming blobs are associated with the early-type galaxy. Moreover, MUSE reveals long ionised-gas tails, emanating from the galaxy. The quantity of gas indicates a gas rich progenitor has merged with the early-type galaxy. However the direction of the tails and blobs, and the blob morphology, appears to indicate that strong ram-pressure stripping may have stripped out gas brought in by the merger. We will present kinematic structure of the whole system (the galaxy, star-forming blobs, and gas tails), as well as the star formation history of the system, supporting a scenario where a recent galaxy merger is subjected to cluster environmental mechanisms.

[구 GC-16] Photometric Pixel-Analysis of the BCGs in Abell 1139 and Abell 2589

Joon Hyeop Lee[1,2], Sree Oh[3], Hyunjin Jeong[1], Sukyoung K. Yi[3], Jaemann Kyeong[1], Byeong-Gon Park[1,2]
[1]Korea Astronomy and Space Science Institute, [2]University of Science and Technology, [3]Department of Astronomy and Yonsei University Observatory, Yonsei University

To understand the coevolution of Brightest Cluster Galaxies (BCGs) and their host clusters, we conduct a case study on the BCGs in dynamically young and old clusters, Abell 1139 (A1139) and Abell 2589 (A2589). We analyze the pixel color-magnitude diagrams (pCMDs) using deep g- and r-band images, obtained from the CFHT observations. (1) While the overall shapes of the pCMDs are similar to those of typical early-type galaxies, the A2589-BCG tends to have redder mean pixel color and smaller pixel color deviation at given surface brightness than the A1139-BCG. (2) The mean pixel color distribution as a function of pixel surface brightness indicates that the A2589-BCG formed a larger central body by major dry mergers at an early epoch than the A1139-BCG, while they have grown commonly by subsequent minor mergers. (3) The spatial distributions of the pixels with deviated colors reveal that the A1139-BCG experienced considerable tidal events more recently than the A2589-BCG, whereas the A2589-BCG has an asymmetric compact core possibly resulting from major dry merger at an early epoch. (4) The A2589-BCG shows a very large faint-to-bright pixel number ratio compared to early-type non-BCGs, whereas the ratio for the A1139-BCG is not distinctively large. These results imply that the BCG in the dynamically older cluster (A2589) formed earlier and is relaxed better.

[구 GC-17] Lyman alpha emitting blobs at the epoch of cosmic reionization

Hyo Jeong Kim and Kyungjin Ahn
Department of Earth Science Education, Chosun University, Gwangju, Korea

Lyman alpha photons emitted from the early generation galaxies are scattered through the intergalactic medium, and can be observed as Lyman alpha emitting sources. We examine the Lyman alpha line transfer mechanism by tracing the random scattering histories of Lyman alpha photons in the intergalactic medium of the early universe. The density and ionization fields are based on the 3D map by N-body + radiation transfer simulations of the epoch of reionization. The calculation is compared with analytical models, too. The emergent line profile and the size of the Lyman alpha blob are strongly tied to the density and ionization environment, likely to give constraints when high-z Lyman alpha blobs are observed.

[구 GC-18] BCCOMICS: Baryon-Cold dark matter COsMological Initial Condition generator for Small-scale structures

Kyungjin Ahn
Chosun University

Density and velocity perturbations in scales most relevant for the first galaxy formation are strongly affected by large-scale density perturbations, velocity-divergence perturbations and the baryon-cold dark matter (CDM) streaming velocities. Even at redshifts as high as z~200, this mode-mode coupling imprints a significant impact on the small-scale perturbations, at the wavenumber $k > \sim 100$ Mpc^{-1}, as was calculated in our recent work. This implies that cosmological initial conditions based on the usual linear theory is no longer valid in these scales. We present a new cosmological initial condition generator, BCCOMICS, which generates initial conditions for the cold dark matter (CDM) and baryons in scales most relevant for the first galaxy formation.