[포GC-34] Gas Outflow in SDSS AGN-host Galaxies

Hyun-Jin Bae[1], Jong-Hak Woo[2], &SemyeongOh[2]
[1]*Department of Astronomy and Center for Galaxy Evolution Research, Yonsei University*
[2]*Astronomy Program, Department of Physics and Astronomy, Seoul National University*

Energetic outflow from active galactic nuclei (AGNs) may play a critical role in galaxy evolution. We present a velocity diagnostics for detecting gas outflow in the narrow-line region of Type-2 AGNs using line-of-sight velocity offset of the [O III]λ5007 and Hα emission lines with respect to the systemic velocity of stars in host galaxies. We apply the diagnostics to nearby galaxies at $0.02 < z < 0.05$: 3775 AGN-host and 907 star-forming galaxies as a comparison sample, which are selected from the Sloan Digital Sky Survey DR7. After obtaining a best-fit stellar population model for the continuum and a systemic velocity based on stellar lines, we subtract stellar component to measure velocity offsets of each emission line. We find a sample of 169 AGN-host galaxies with outflow signatures, displaying a larger velocity shift of [O III] than that of Hα, as expected in a decelerating outflow model. We find that the offset velocity of [O III] increases with Eddington ratio, suggesting that gas outflow depends on the energetics of AGN.

[포GC-35] The ISM properties under ICM pressure in the cluster environment : NGC4330, NGC4402, NGC4522, NGC4569

Bumhyun Lee and Aeree Chung
Department of Astronomy, Yonsei University

The interstellar medium (ISM) of galaxies in the galaxy cluster can well be affected by the intracluster medium (ICM). Among many suggested environmental processes, ram pressure stripping can effectively remove gas through the interaction with the ICM. In fact, Cluster galaxies are lower in HI gas mass compared to their field counterparts, and in recent high resolution HI imaging studies, many galaxies in dense environments have been found to be ram pressure stripped in HI. However, it is still under debate whether the ICM pressure can also remove dense molecular gas from the galactic disk, which plays more important role in star formation and hence galaxy evolution. To answer this question, we have obtained high resolution 12/13 CO (2-1) data from the Sub Millimeter Array (SMA) of four galaxies at various HI stripping stages to study how the molecular gas properties change as the galaxy experiences the ICM pressure. We investigate the physical properties of molecular gas with 12/13 CO images. By comparing with other wavelength data, i.e. data(optical, HI, Hα, etc), we discuss how and in which timescale galaxies can migrate from the blue cloud to the red sequence due to ram pressure stripping.