[포GC-31] The Black Hole Mass - Stellar Velocity Dispersion Relation of Narrow-Line Seyfert 1 Galaxies

Yosep Yoon, Jong-Hak Woo
Astronomy Program, Department of Physics & Astronomy
Seoul National University

Given high accretion rates close to the Eddington limit, narrow-line Seyfert 1 galaxies (NLS1) are arguably the most important AGN subclass in investigating the origin of the black hole mass-galaxy stellar velocity dispersion (M_{BH}-σ) relation. Currently, it is highly debated whether NLS1s are offset from the local M_{BH}-σ relation. The controversy mainly comes from the fact that the [OIII] line width has been used as a proxy for stellar velocity dispersion due to the difficulty of measuring stellar velocity dispersion in NLS1s. Using the SDSS spectra of a sample of 105 NLS1, we performed multi-component fitting analysis to separate stellar absorption lines from strong AGN [FeII] complex in order to directly measure stellar velocity dispersion. We will present the result of decomposition analysis and discuss whether NLS1s follow the same M_{BH}-σ relation based on the direct measurements of stellar velocity dispersion.

[포GC-32] Correlation between galaxy mergers and AGN activity

Jueun Hong[1] , Myungshin Im[1]
[1]*CEOU/Dept. of Physics and Astronomy, Seoul National University*

Using deep images taken at Maidanak 1.5m telescope, at McDonald 2.1m telescope and Canada-France-Hawaii Telescope, Dupont 2.5m telescope we investigated the fraction of merging galaxies in hosts of 39 AGN which are brighter than M = -22 mag and nearer than z = 0.3. We found that 16 to 17 of 39 AGN host galaxies show the evidence of mergers like tidal tail, shell via careful visual inspection. We also studied with the merging fraction of a control sample, SDSS Stripe82 early type galaxies of which surface brightness limit and bulge magnitude are similar to that of the AGN sample. We found that merging fraction of the AGN sample is higher than that of early type galaxy samples in the whole range of bulge magnitude. This result implies that AGN activity may be correlated with merging. We also investigated the detailed morphology of merging feature. At least ~1/4 of control samples classified as a tidal and tidal+dust are shell structures. On the other hand only one (5.9%) of AGN sample classified as merger shows shell structures, and almost all merging AGNs show tidal tail features. From point of view that tidal tail may be at the early stage of merging, and shell may be at the late stage of mergers, this result suggests that AGN might be evolved into early-type galaxies after merging.