[구GC-20] A Census of Ionized Gas Outflows in Local Type-2 AGNs

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

Energetic gas outflows from active galactic nuclei (AGNs) may have a crucial role in galaxy evolution. In this contribution, we present a census of ionized gas outflows using a large sample (~23,000) of local ($z < 0.1$) type-2 AGNs selected from the Sloan Digital Sky Survey DR 7. By measuring the velocity offset of narrow emission lines, i.e., [O III] λ5007 and the Balmer lines, with respect to the systemic velocity measured from the stellar absorption lines, we find ~47% of AGNs showing an [O III] line-of-sight velocity offset ≥ 20 km s-1. The fraction in type-2 AGNs is similar to that in type-1 AGNs after considering the projection effect. AGNs with larger [O III] velocity offsets, in particular with no or weak Hα velocity offsets, tend to have higher Eddington ratios, implying that the [O III] velocity offset is related to on-going black hole activity. Also, we find the different distributions of the host galaxy inclination between the AGNs with blueshifted [O III] and the AGNs with redshifted [O III], supporting the model of biconical outflow with dust obscuration. Meanwhile, for ~3% of AGNs, [O III] and Hα exhibit comparable large velocity offsets, suggesting a more complex gas kinematics than decelerating outflows in the narrow-line region.

[구GC-21] COCOA: The CO-evolution of cluster COres and the AGNs of central galaxies

Junhyun Baek[1], Aeree Chung[1], Evangelia Tremou[1], Bongwon Sohn[2], Taehyun Jung[2], Hyunwook Ro[1,2]
[1]*Department of Astronomy, Yonsei University,*
[2]*Korea Astronomy and Space science Institute*

We present the results of the KVN observations of central galaxies in cool-core and non cool-core clusters. The goal is to study how cooling environments affect the AGN activities in the core where their host galaxies are embedded. From the HIghest FLUx Galaxy Cluster Sample (HIFLUGCS), we have selected 19 radio bright AGNs located in the center of clusters with various cooling timescale. In our pilot study, we have obtained 22 and 43 GHz fluxes and morphologies of the sample using the Korean VLBI network. We find that 22/43 GHz fluxes do not strongly depend on the presence of a cool gas flow. However, an intriguing fact is that most AGNs in the cool-core clusters show the hint of a pc-scale jet component while the ones in the non cool-core clusters do not. Based on these results, we discuss the role of cooling flows in the central cluster AGNs and their co-evolution.