

[GC-17] **Active Galactic Nuclei and their Environments  
in the Sloan Digital Sky Survey**

Yun-Young Choi<sup>1</sup>, Changbom Park<sup>1</sup>  
<sup>1</sup>*Korea Institute For Advanced Study*

We study the dependence of the observed fraction of galaxies with an narrow-line active galactic nucleus (AGN) on morphology and luminosity of host galaxy, morphology of the neighbor, local density ( $\rho_1$ ) defined by nearest neighbor, and large-scale background density in the Sloan Digital Sky Survey, to understand the relationship between AGN and its environments. We found that at a fixed host luminosity bin, the probability for a galaxy to harbor AGN strongly depends on morphology of the target galaxy. The host galaxy tend to have more late type morphology. At the given host morphology, the probability becomes significantly affected by morphology of its neighbor when the target galaxy is located within a virial radius ( $\rho_{\text{virial}}$ ) of the neighbor. When  $\rho_1 > \rho_{\text{virial}}$ , the probability increases for late type neighbor case and rather decreases for early type neighbor case. The result suggests that the cold gas from late type neighbor during galaxy-galaxy interaction is effectively used to fuel nucleus activity.

---

[GC-18] **타원은하에 미치는 초거대블랙홀 Feedback의 영향**

이석영<sup>1</sup>  
<sup>1</sup>*연세대학교 천문우주학과*

조기형은하의 별생성 역사에 초거대블랙홀의 Feedback 영향이 중요했을 것이라는 추측이 있어왔다. 이런 제안을 검증하기 위해 슬론 분광/측광 자료를 사용하여 다양한 은하들의 최근 별생성 역사를 측정하고 방출선을 이용하여 활동성은하핵의 활동여부를 찾아내었다. 이를 위해 눈으로 형태학적 분류를 하여 16,000 여개의 조기형 은하의 데이터베이스를 구축하였다. 흥미롭게도, 은하의 최근별생성 역사와 활동성은하핵의 활동 여부가 밀접한 관계를 보였다. 은하에 미치는 초거대블랙홀 Feedback의 영향을 거의 직접적으로 보여주는 좋은 예를 발견한 것이다.