

**[JGC-30] Search for galaxy clusters in SA22**Jae-Woo Kim<sup>1,2</sup>, Myungshin Im<sup>1,2</sup> and Minhee Hyun<sup>2</sup><sup>1</sup> *CEOU/Dept. of Physics and Astronomy, Seoul National University*<sup>2</sup> *Dept. of Physics and Astronomy, Seoul National University*

The galaxy cluster is a good laboratory to test the cosmological model as well as the evolution of galaxies in the dense region. However the lack of wide and deep near-IR datasets has prevented to identify galaxy clusters at  $z > 1$ . Here we merge a wide, deep near-IR datasets of UKIDSS DXS (J and K bands) and IMS (J band) with the CFHT Legacy Survey (CFHTLS) ugriz catalogue to detect galaxy clusters. We identify candidate galaxy clusters at  $z > 0.8$ , where the near-IR dataset plays an important role to detect galaxies efficiently. The cluster mass is also estimated based on the cluster richness and the semi-analytical cosmological simulation.

**[JGC-31] Missing Type I AGNs in the local universe**Ji Gang Kim<sup>1</sup>, Jae Hyuk Kim<sup>1</sup>, Seung Eon Lee<sup>1</sup>,  
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Type I AGNs are classified by the presence of broad emission lines while Type II AGNs show narrow emission lines only. All-sky surveys such as SDSS provide large AGN samples for statistical studies. However, the AGN samples suffer selection bias due to the incomplete selection criteria. To investigate the missing Type I AGNs in optical spectroscopic surveys, we start with a sample of SDSS Type II AGNs at  $0.02 < z < 0.05$ , using the MPA-JHU SDSS DR7 catalog. We search for the hidden broad H $\alpha$  component with both visual inspection and the multi-component spectral decomposition method. Out of 1383 Type II AGNs, we find a total of 62 missing Type I AGNs ( $\sim 4.5\%$ ). The sample has mean black hole mass,  $\log(M_{\text{BH}}/M_{\text{SUN}}) = 6.48 \pm 0.53$ , and luminosity,  $\log(L_{\text{H}\alpha}/\text{erg s}^{-1}) = 40.52 \pm 0.33$ , with Eddington ratio,  $\log(L_{\text{bol}}/L_{\text{Edd}}) = -1.51 \pm 0.41$ . We will describe the sample and present the  $M_{\text{BH}}-\sigma_*$ , and  $M_{\text{BH}}-M_*$  relations of the sample in the context of the BH-galaxy coevolution.