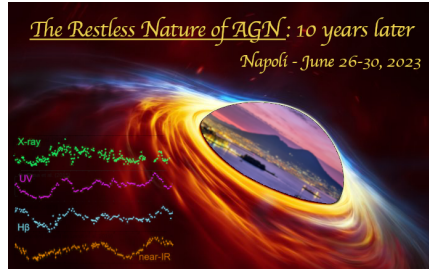


## The restless nature of AGN: 10 years later



Contribution ID : 75

Type : **Contributed talk**

# Investigating the high-luminosity end of the H beta size-luminosity relation based on the 6-year Seoul National University Monitoring Project (SAMP)

Tuesday, 27 June 2023 10:15 (15)

Reverberation mapping (RM) of Active Galactic Nuclei (AGNs) is the primary method to measure AGN broad line region (BLR) sizes and black hole (BH) masses. Most objects in the current H $\beta$  RM sample are low-to-intermediate luminosity AGNs with only a few objects having  $L_{5100} \geq 10^{44.5}$  erg/s. Here we present the latest results from our 6-year Seoul National University AGN Monitoring Project (SAMP). With hundreds of nights of regularly sampled spectroscopic/photometric observations, we successfully obtain reliable H $\beta$  lags and BH masses for 24 objects in the luminosity range of  $L_{5100} = 10^{44.1 \sim 45.6}$  erg/s. The BLR sizes of these objects are generally smaller than the expectation from Bentz et al. relation. By applying an uniform lag analysis to literature H $\beta$  RM light curves and selecting reliable lag measurements to combine with SAMP measurements, we find the current H $\beta$  size-luminosity relation has a slope of  $0.41 \pm 0.02$  with an intrinsic scatter of 0.19 dex. We confirm that the accretion rate / UV-optical spectral energy distribution is related to this shallower slope. In addition, we will present the H $\beta$  velocity resolved lag measurements for  $\sim 20$  AGNs and discuss the implication of these results on the BLR properties.

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**Session Classification** : Emission Line variability