



Contribution ID: 44

Type: **not specified**

The MBH - σ Relation of 105 Months SWIFT-BAT AGNs

Tuesday 31 May 2022 17:30 (15 minutes)

We present central stellar velocity dispersion measurements for 158 type 1 AGNs from the second data release of the Swift/BAT AGN Spectroscopic Survey (BASS DR2) with a redshift cut-off $z < 0.08$. A total number of 297 type 1 AGN spectra are fit for obtaining two independent measurements from the Ca II H+K + Mg I region (3880 - 5550 Å) and the calcium triplet region (8350-8750 Å). The resulting σ_{CaT} estimates are found to be in the range: $73 \leq \sigma_{\text{CaT}} \leq 278 \text{ km s}^{-1}$, whereas the $\sigma_{\text{CaH+K+M gI}}$ estimates are found to be in the range: $82 \leq \sigma_{\text{CaH+K+M gI}} \leq 272 \text{ km s}^{-1}$, for our AGN sample. We show that both σ estimates are very consistent with each other with an average difference of 0.03 dex. Using the BASS DR2 MBH archive and our σ measurements, we present one of the largest MBH - σ relation investigations for type 1 AGNs. We demonstrate that extinction in BLR causes under-estimation of black hole masses (MBH), accordingly, over-estimation of Eddington ratios ($\log \lambda_{\text{Edd}}$). We do not find a significant trend between the offset from the MBH - σ relation versus star-formation and the core radio AGN luminosities. Interestingly, we report that AGNs with relatively higher $\log \lambda_{\text{Edd}}$ show higher offset implying that their super-massive black holes still need to grow to keep up with their host-galaxy growth. We conclude that the offset from MBH - σ relation is still strong for AGNs relative to elliptical/classical bulge-hosting galaxies, and using a specified AGN MBH - σ relation is a better approach for obtaining black hole masses of AGN populations.

Presenter: CAGLAR, Turgay (Leiden University)

Session Classification: Parallel Session: Extreme Astrophysics / Galaxies & Cosmology