

# BAT AGN Spectroscopic Survey – XIX. Type 1 versus type 2 AGN dichotomy from the point of view of ionized outflows

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## Abstract:

We present a detailed study of ionized outflows in a large sample of  $\sim 650$  hard X-ray-detected active galactic nuclei (AGNs). Using optical spectroscopy from the BAT AGN Spectroscopic Survey (BASS), we are able to reveal the faint wings of the [O iii] emission lines associated with outflows covering, for the first time, an unexplored range of low AGN bolometric luminosity at low redshift ( $z \sim 0.05$ ). We test if and how the incidence and velocity of ionized outflow is related to AGN physical parameters: black hole mass ( $M_{\text{BH}}$ ), gas column density ( $N_{\text{H}}$ ), Eddington ratio ( $\lambda_{\text{Edd}}$ ), [O iii], X-ray, and bolometric luminosities. We find a higher occurrence of ionized outflows in type 1.9 (55 per cent) and type 1 AGNs (46 per cent) with respect to type 2 AGNs (24 per cent). While outflows in type 2 AGNs are evenly balanced between blue and red velocity offsets with respect to the [O iii] narrow component, they are almost exclusively blueshifted in type 1 and type 1.9 AGNs. We observe a significant dependence between the outflow occurrence and accretion rate, which becomes relevant at high Eddington ratios [ $\log(\lambda_{\text{Edd}}) \gtrsim -1.7$ ]. We interpret such behaviour in the framework of covering factor-Eddington ratio dependence. We do not find strong trends of the outflow maximum velocity with AGN physical parameters, as an increase with bolometric luminosity can be only identified when including samples of AGNs at high luminosity and high redshift taken from literature.