

R18b Nobeyama 45-m CO $J=1-0$ Observations of Luminous Type 1 AGNs at $z \approx 0.3$

Tomonari Michiyama (U.Osaka), Ming-Yang Zhuang (KIAA), Jinyi Shangguan (MPE), Hassen Yesuf (IPMU), Hiroyuki Kaneko (JUEN), Luis Ho (KIAA)

We used the 45 m telescope of the Nobeyama Radio Observatory (NRO) to observe ten type 1 active galactic nuclei (AGNs) at $z \sim 0.3$ in CO $J=1-0$. In any targets, CO $J=1-0$ emission lines were not robustly detected. The upper limits of CO $J=1-0$ luminosities are lower than expected given the molecular gas mass inferred from nebular dust extinction. This suggests that we cannot directly apply the calibration method (from A_V to molecular gas mass) in star-forming galaxies with low extinctions ($A_V \approx 1$) to AGNs with very large extinction ($A_V \gtrsim 4$). This survey project clearly demonstrates that the exhaustive “CO” observations are important to understand the relation between AGN activities and molecular gas contents in the host galaxies, i.e., AGN feedback.