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Measurements of Black Hole Masses using Spectral Energy Distribution of quasars at z~6

Monday, January 5, 2026 9:40 AM (15 minutes)

In this talk, I will present a study using the accretion disk fitting method to measure black hole masses in quasars at z˜6. The quasar sample includes 42 quasars at a redshift range of 5.8 < z < 6.5 selected from the XQR-30, which is an ESO large program to obtain deep X-shooter spectra of quasars at z˜6. We derived the supermassive black hole mass using the slim and thin disk models adopted from XSPEC, as well as MCMC Bayesian Inference to fit the quasar broad band photometry. Compared to the black hole mass derived using CIV, the back hole mass derived from the SED fits better and agrees with that derived using MgII. This provides a unique opportunity to estimate the black hole mass in a large sample of quasars without decent near-IR spectra in the future large-scale quasar survey, such as the Rubin Observatory, LSST survey.

Author: Prof. BIAN, Fuyan (ESO)

Presenter: Prof. BIAN, Fuyan (ESO)

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