

## Study of the scatter in single-epoch virial black mass estimates

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The most frequently used method to estimate the BH mass of broad-line AGN and quasars is the so-called single-epoch virial BH mass estimators, in which one estimates the BH mass based on two quantities, the continuum luminosity of the AGN, and the line width of the broad emission lines, both are measured from single-epoch spectra. This method have strong assumptions about the interpretations of continuum luminosity and broad line width.

Since AGNs vary on weeks to years timescales, the changes in continuum luminosity and line profile will lead to scatter in the single-epoch virial BH masses estimates from different spectra for the same object.

We studied the consequences of AGN spectral variability on the scatter of single-epoch virial BH mass estimates, and tested some of the underlying assumptions of this technique.

The dataset used is: duplicate quasar spectra from SDSS (mostly are two-epoch spectra for thousands of objects)

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