

Black Hole Mass and Geometry of the Emitting Region of the Quasar 3C 273

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Abstract. 3C 273 is the first quasar discovered and among the nearest ones with a redshift of $z = 0.158$. In particular, it is a Flat Spectrum Radio Source.

Under the virial assumption, the black hole mass can be expressed by a de-projection factor f , representing the BLR geometry, and by the so called virial product, depending on the radius of the Broad Line Region (BLR) and the width of the broad lines.

We estimated the virial product of 3C 273 using the emission lines H β , Mg II, and C IV, based on archival data. Besides, the black hole mass was assessed through the correlation with the host galaxy luminosity. This allowed us to estimate the f factor and interpret it in the context of BLR geometry.