

SPECTRAL LINES AND SUPERMASSIVE BLACK HOLE MASS MEASUREMENTS

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Supermassive black holes (SMBHs) are supposed to be in the center of galaxies and it seems that they play an important role in their evolution. Therefore investigation of SMBH characteristics and their influence on the host galaxy structure is one of the significant goal in astrophysics today. One of the most important parameters of SMBHs is their mass. The mass measurements of SMBHs are very complex task. Between several methods for SMBH mass measurements, several of them use the spectral lines, which indicate the motion of the emitting/absorbing material around a SMBH. Mostly there is assumption of virialization of line emitting gas in the region close to SMBHs that is used for mass determination. In this talk we will give an overview of methods for the SMBH mass measurements using emission spectral lines. First we will discuss reverberation method, after that the methods which use different lines from single epoch observations, and at the end a new method which uses polarization across the broad lines.