Progress Report

GRAVITATIONAL REDSHIFT OF EMISSION LINES IN THE AGN SPECTRA

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Monitoring campaigns permit to study the variabilities in line profiles, including their shifts, widths and fluxes, and therefore to analyse the evolution and structure of galaxies, masses of their central super massive black hole (SMBH), possibility for the binary core, orbital elements of the SMBH path, and many more. Root mean square (rms) profile represent the measure of the variable component of the line profile. Analysing the rms profile can give the information on the SMBH mass, either from reverberation mapping, that gives geometry and inclination dependent virial mass or from the redshift of the variable broad component of the optical emission line in respect to the mean line profile, that can give independent mass of the central black hole. Using these two independent methods for mass estimating, one can derive the inclination angle of the central accretion disk. The detection of the gravitational redshifted emission lines is reported just in a few active galaxies. Here we give a short overview on the studies where the detection of the gravitation redshift has been noticed.