

A TWO-COMPONENT MODEL OF THE BROAD LINE REGION OF ACTIVE GALACTIC NUCLEI. *M. George, A. Robinson**, *Department of Physics,*
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It has long been theorized that relativistic accretion disks around supermassive black holes are responsible for the high luminosities seen in active galactic nuclei (AGN). Recent evidence of double-peaks from the broad line region has supported this theory, but the disk model fails to account for a central component between the two peaks. Other models have proposed a spherical inflow or outflow around the central black hole, but they do not allow for the shoulders or peaks that are characteristic of rotating disks that have been discovered in the profiles of Arp 102B, 3C 390.3, and other AGN. A two-component model of the broad line region containing a spherical outflow and a rotating accretion disk is capable of generating shoulders on the sides of a central peak, as well as wings that match observational data. Eccentricity in the disk does not need to be introduced if we allow asymmetries in the spherical component. The improved model has been fit visually to observations of individual objects including Akn 120, and can also cover the ranges of interpercentile velocities, kurtoses, and asymmetries that we see in a large sample of AGN.