

THE STRUCTURE OF THE BLR AND NLR IN AGN Mrk 817

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Mrk 817 is a Seyfert 1 galaxy that shows very stratified line emission region. Emission lines of the galaxy, both Narrow (NELs) and Broad Emission Lines (BELs), are very complex and present evidence of the stratified NLR and BLR, indicating different kinematical properties in different part of the BLR and NLR.

Here we present a study of the spectra of Mrk 817 using four sets of spectroscopic observation in order to investigate the emission line region. We found that:

(i) The BLR is kinematically stratified and consists of at least two components - Very Broad Line Region (VBLR) with $V \sim 5000$ km/s and Intermediate Line Region (ILR) with $V \sim 1000$ km/s. We apply the two-component model, where one component is a disk or disk-like region and another one is a spherical emission region with isotropic velocity distribution. The model can well fit the broad line profiles, indicating that there is a disk (or disk-like) emission;

(ii) The NLR also show a complex structure, and we can clearly see at least two NLR regions: a) the NLR1, which has an internal random velocity of 510 km s^{-1} , and relative approaching velocity of -300 km s^{-1} with respect to the systemic redshift of the observed galaxy; and b) the NLR2 which has an internal random velocity of 150 km s^{-1} , and a redshift equal to the systemic one of the corresponding object.