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ESTIMATING THE BROAD LINE REGION SIZE OF QUADRUPLY LENSED QUASARS WITH MICROLENSING

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Quadruply lensed quasars are powerful cosmic laboratories for simultaneously probing various astrophysical phenomena. Microlensing of the broad emission line region (BLR) in lensed quasars produces line profile distortions that can be used to probe the BLR size, geometry, and kinematics. Based on single and multi epoch spectroscopic data, we analyze the CIV line profiles for several lensed systems: Q2237+0305, J1004+4112, SDSSJ113803.73+031457.7 and SDSSJ133907.13+131039.6 and compare the microlensing induced line deformations with the simulated ones. The simulations are based on three representative BLR models: a Keplerian disk (KD), an equatorial wind (EW) and a polar wind (PW) of various sizes, inclinations and emissivities. The most likely models have been estimated using a Bayesian probabilistic approach. We find that the BLR radii estimated from microlensing follow the CIV radius-luminosity relation obtained from reverberation mapping, although the microlensing radii seem to be systematically smaller.