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Invited lecture

BROAD-LINE PROFILES OF QUASARS: ARE THERE TWO QUASAR POPULATIONS?

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The last ten years have seen large databases of moderate resolution and s/n spectra for Type 1 AGN. We focus on Hβ where the largest databses exist. Are broad Hβ profiles basically all the same or is there evidence for significant diversity? We will show that at low redshift (z<0.8) there is not only diversity but evidence for a real dichotomy in broad line properties of quasars which affects all inferences taken from broad line measures. Sources with FWHM Hβ = 1 − 4000 km/s (we call them Population A) show simple Lorentz-like profiles that likely yield the most reliable black hole mass estimates. Broader Hβ profiles (population B) are more complex and require at least two components for an adequate parametrization. Broad Hβ profiles for almost all radio-loud sources fall in this category. We explain how this profile description changes at higher redshift.