

## LOW IONIZATION LINES IN HIGH LUMINOSITY QUASARS

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In order to investigate where the and how low ionization lines are emitted in quasars, we are studying a new collection of spectra of the CaII triplet at  $\lambda$  8498, 8452, 8662 observed with the VLT Telescope using the ISAAC IR spectrometer. Our sample involves luminous quasars at intermediate redshift, for which CaII observations are almost non-existent. We fit the CaII triplet and the OI  $\lambda$  8446 line using the H $\beta$  profile as a model. We derive constraints on the line emitting region from the relative strength of the CaII triplet, OI  $\lambda$  8446 and H $\beta$ .

## PHOTOIONIZATION ESTIMATES OF BROAD LINE REGION SIZE IN ACTIVE GALACTIC NUCLEI

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We present a method to determine the distance of the Broad Line Region (BLR) from the central continuum source in type-1 AGNs. Our method is based on the determination of the physical conditions in the BLR under the assumption that the line emitting gas is photoionized by the central continuum source. We derive “diagnostic” intensity ratios that involve UV lines Al III $\lambda$ 1860, Si III $\lambda$ 1892 and C IV $\lambda$ 1549. Diagnostic ratios allow us to compute the product of ionization parameter and hydrogen number density, and hence the BLR radius from the definition of the ionization parameter itself. We compare our determinations of the BLR radius with the ones independently obtained from reverberation mapping, in order to test the accuracy of our method. We also compare black hole masses obtained with the photoionization method to the ones derived from widely-applied correlations between mass, line broadening and luminosity.