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Poster

PROPERTIES OF CONTINUUM AND BROAD LINE EMISSION GAS IN AGNs Fe II EMITTERS

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A spectral characteristic common to Type I active galaxy nuclei (AGN) is the emission of Fe II, which forms a pseudo-continuum from the ultraviolet (UV) to the near infrared (NIR) due to the accumulation of hundreds of thousands of multiplets (>344,000). It is estimated that 25% of the total broad line region (BLR) emission is produced by the Fe II lines. Due to the relevance of this ion in the energy of the BLR, it is essential to understand the importance that the different excitation mechanisms make in the formation of Fe II emission. In this work we studied 67 AGNs with Fe II emission in order to study the relationship between the central source continuum and the lines produced by the BLR in particular of Fe II. We investigated the relationship between the intensity of Fe II and the object emission continuum. The result showed that there is no distinct behavior between the emission continuum of the different Fe II AGNs. In addition, we did a spectral analysis of the most relevant low potential ionization lines of the BLR, such as Paβ, O I, CaT and Fe II. The fit showed that the widths of the Fe II, O I and CaT lines are similar, suggesting that the emissions are produced in the same region of the BLR. The Fe II ratio in the NIR was calculated using Fe II lines in 1 μm and the *bump* of 9200 Å. The results show that the NIR ($R_{1\mu m}$) and optical (R_{4570}) Fe II intensity are strongly correlated, exhibiting the existence of a common excitation mechanism for the Fe II emissions. Also, the comparison between the intensities of $R_{1\mu\,m}$ vs R_{9200} showed a weak correlation. This result indicates that despite the importance of Lyα fluorescence, there is possibly another dominant mechanism in the formation of Fe II emission in 1 μm. Finally, we explored for the first time in the literature Eigenvector 1 (EV1) in the NIR context. The result suggests that the study of EV1 can be extended to the NIR by replacing the original quantities with those in the NIR. This result acquires relevance in view of the imminent start-up of the James Webb space telescope, allowing the study of unexplored samples of AGNs.