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P03

Properties of the continuum and the broad line emission gas in AGNs with FeII emission

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INTRODUCTION

We present a **spectral atlas of 67 type-I** AGN, in the wavelength region **0.4-2.5 μm. For most sources, this is the first report of NIR spectroscopy in the literature.**

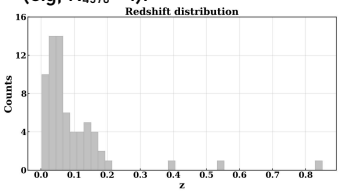
For 54 sources with R_{4570}* available, we classified them according to the strength of the FeII emission ($0.2<R_{4570}<2.8$).

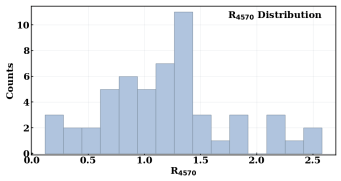
We aim at modeling the continuum and line emission properties within the context of the physics driven the Eigenvector 1.

* R_{4570} is defined as the flux ratio between the FeII complex centered at 4570 Å and the broad component of Hβ.

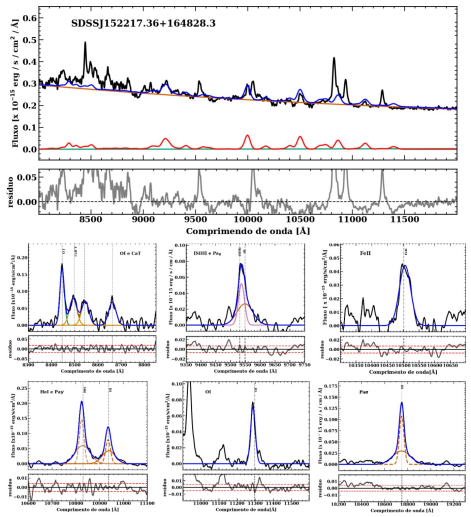
METHODOLOGY

The sample is distributed in the interval $0.002 < z < 0.85$. In terms of the R_{4570} ratio, most objects are classified as strong FeII emitters (e.g, $R_{4570} > 1$).





We model the continuum using two components: an accretion disk contribution represented by a power-law function, and hot dust emission, represented by a black-body distribution. In addition, we fit optical and NIR FeII templates to characterize and remove this contribution. Then, we subtracted all contribution from the spectrum and fit the lines.



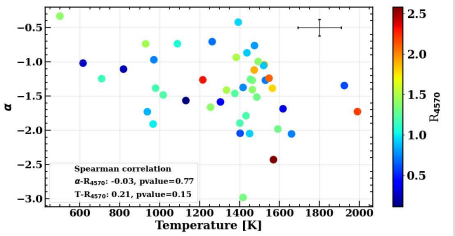
In addition to the FeII lines, we also consider in the analysis CaII λ8498, OIλ8446, HeIIλ10830 and HI. From the NIR FeII template we obtain two FeII intensities: $R_{1\mu m}$, R_{9200}.

* $R_{1\mu m}$ is defined as the flux ratio between the FeII 1μm (λ9997, λ10502, λ10863 and λ1127) and the broad component of Paβ. R_{9200} is the flux ratio between the FeII 9200 bump and the broad component of Paγ.

RESULTS

From the continuum fit, we derived the power law spectral index α, and the black-body temperature T. Afterwards, we investigate the relationship between α, T, and R_{4570} in order to study if the continuum shape is related to the FeII emission.

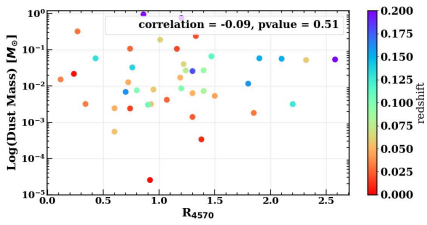
Our results show that AGNs with strong FeII emission are not distinguished from moderate and low emitters regarding the power-law index or the dust temperature.



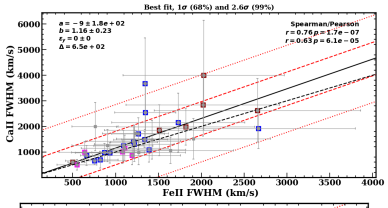
In addition, we obtained the dust mass from the black-body fit to investigate if this quantity is related to strength of FeII emission. Our results show no relationship at all.

We found that the amount of dust present in the BLR is not a determinant factor for the FeII strength

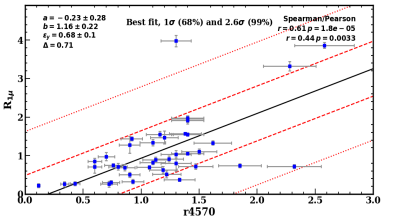
We conclude that the FeII emission observed in AGNs is mainly associated to the physical conditions of the BLR.



From the line fit, we found that the widths of the FeII, OI, and CaII lines are similar, suggesting that they are produced in the same region of the BLR.



Finally, from FeII template, and line fit we could compute the optical and NIR FeII ($R_{1\mu m}$) intensities. Our results show a clear correlation between the intensities. Exhibiting the existence of a common excitation mechanism for the FeII emission.



FINAL REMARKS

- The result showed that there is no distinct behavior between the emission continuum of the different FeII AGNs;
- FeII, CaII and OI have very similar line widths. It suggests that they are formed in gas with common physical properties and outside the region where HI is produced;
- This result indicates that despite the importance of Lyα fluorescence, there is possibly another dominant mechanism in the formation of FeII emission in 1μm as colisional excitation mechanism.

Acknowledgements:

CAPES

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