

The continuum and broad line emission gas in Active Galactic Nuclei with moderate to strong FeII emission

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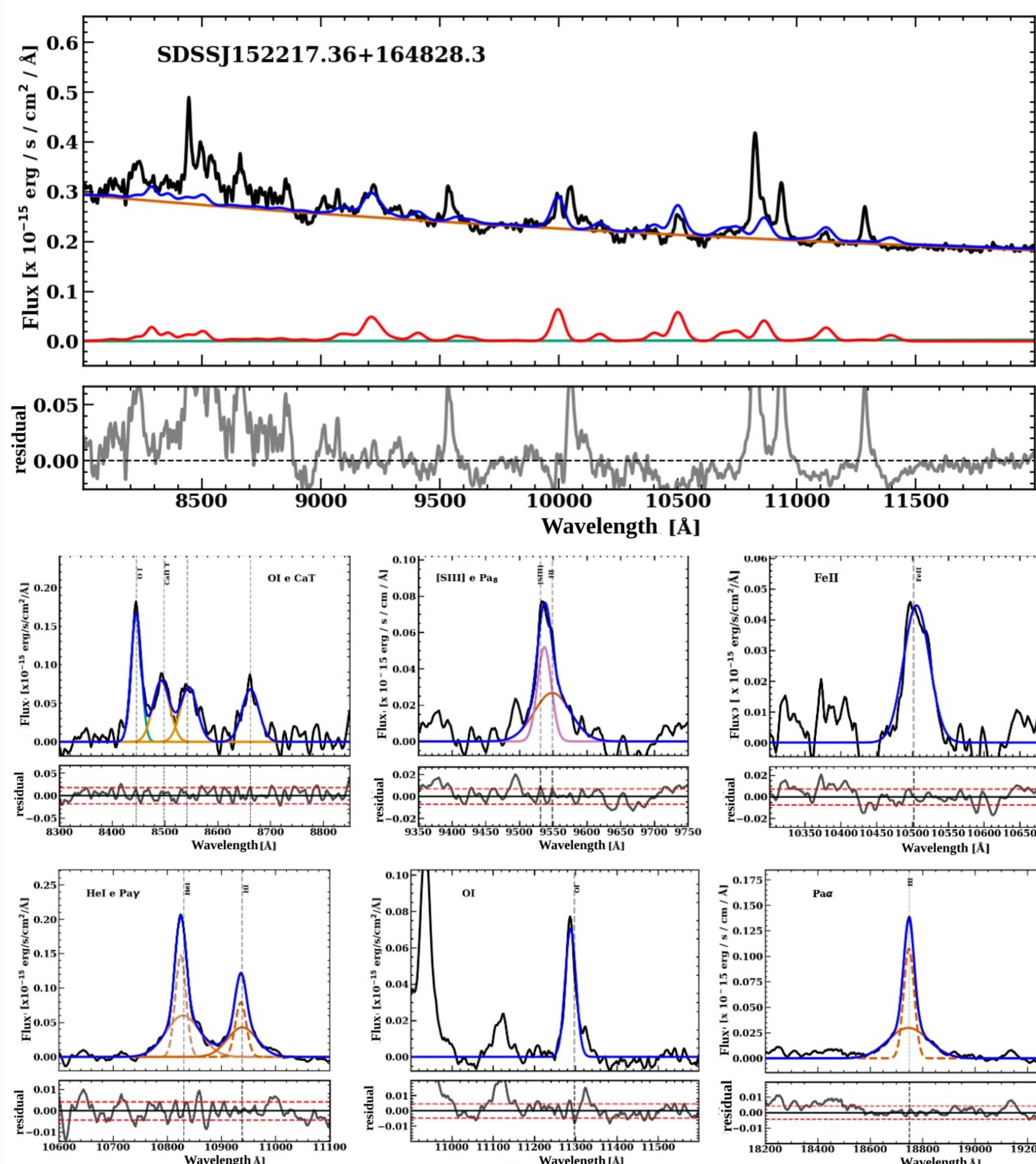
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MAIN GOAL

We study a sample of **67 active galactic nuclei (AGN) with moderate to strong FeII emission** to investigate the relationship between the observed AGN continuum and the lines produced by the broad line region (BLR), in particular, FeII.

METHODOLOGY

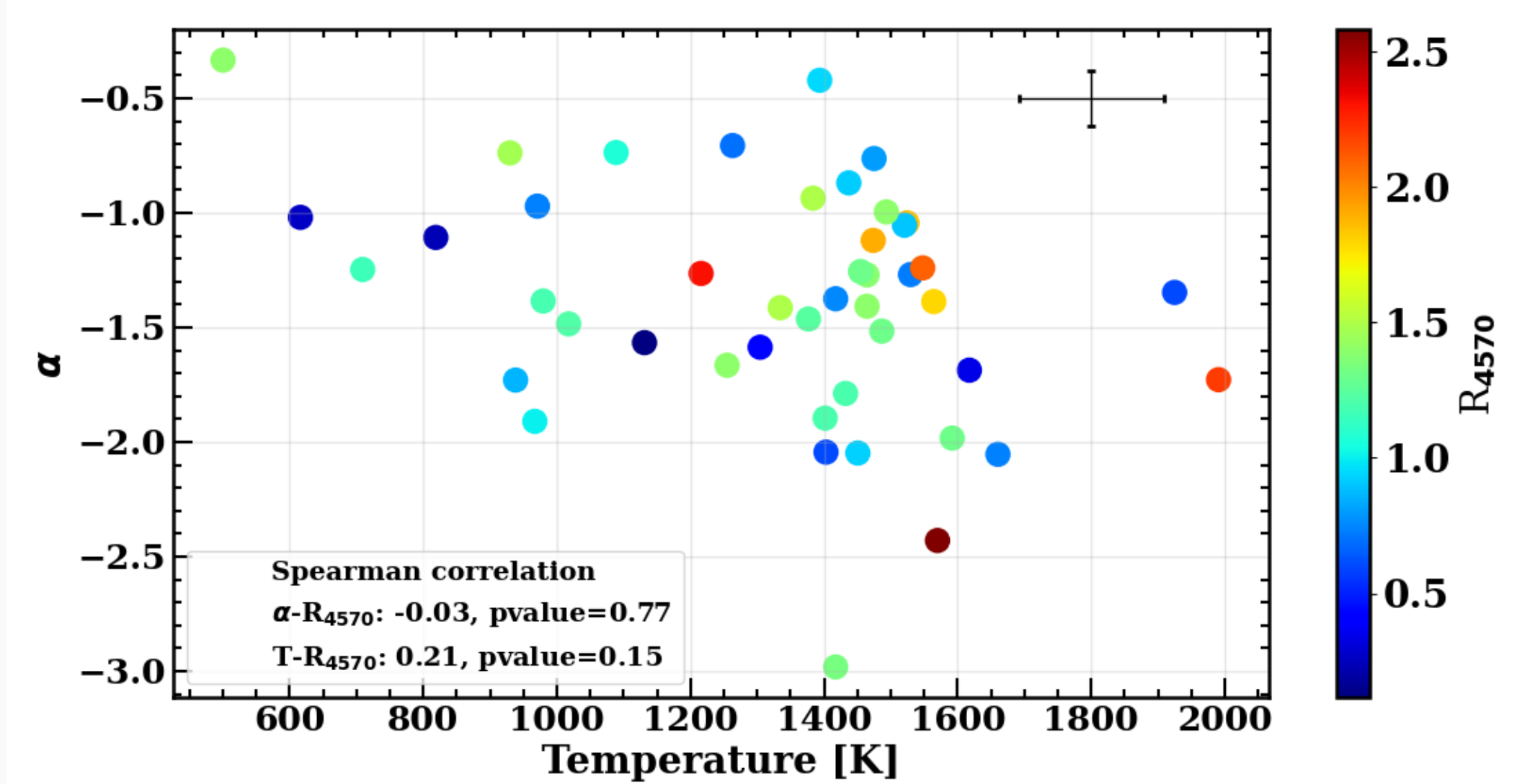
- The sample is distributed within the interval $0.002 < z < 0.2$. In terms of the R_{4570} ratio (flux of FeII in the interval 4400-4700 Å normalized to H β flux), most objects are classified as strong FeII emitters.
- Part of the sample observed with F2 and GNIRS/XD.
- We characterized the **NIR continuum emission** as a **combination of emission from the accretion disc and hot dust emission**.



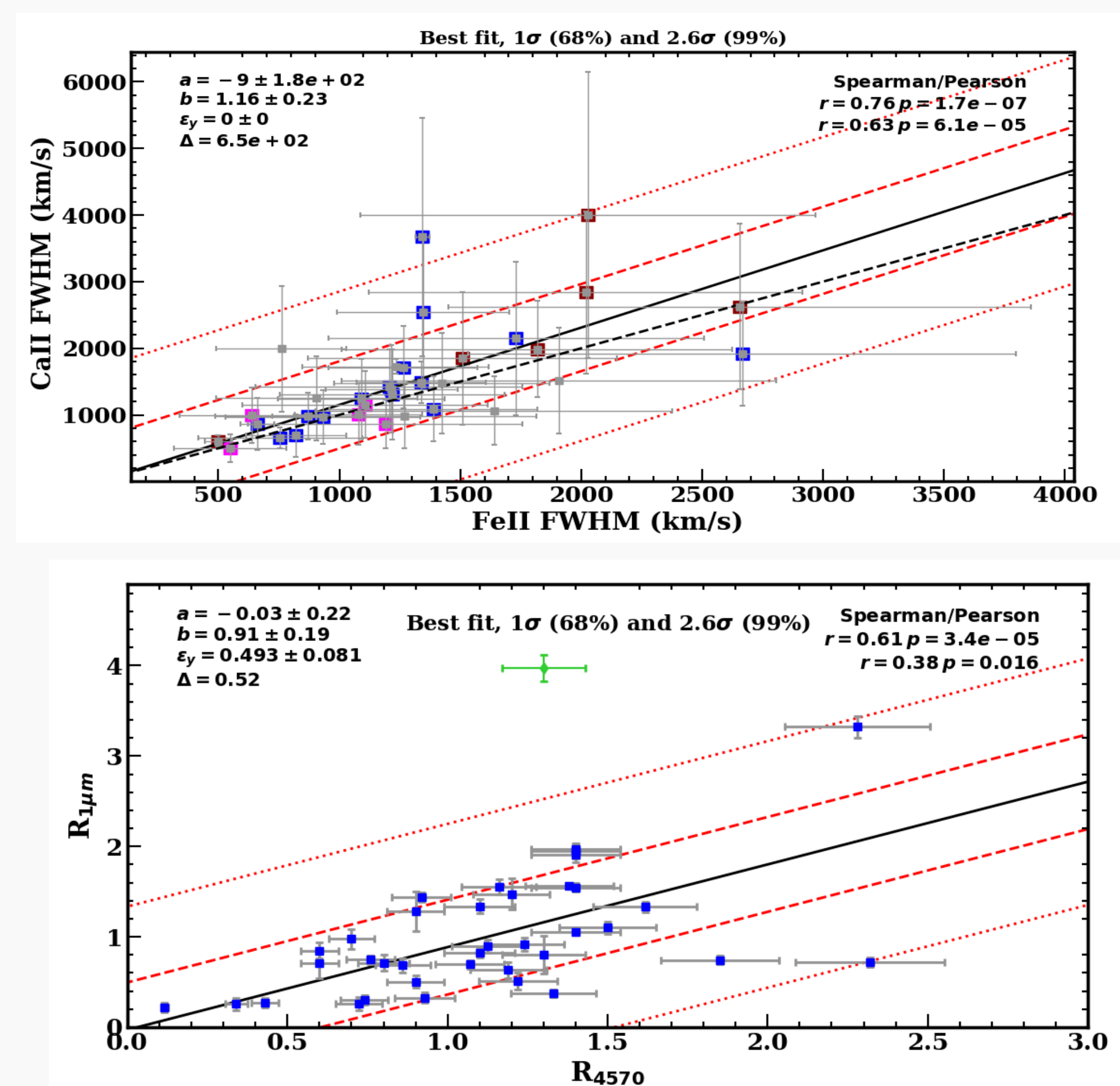
Upper panel: example of the continuum decomposition. The observed spectrum is in black, the FeII pseudo-continuum in red, the orange line is the AGN continuum, the cyan line is the dust emission. The blue line is the sum of the latter three components. The lower smaller panels show examples of the Gaussian fitting to the emission lines. We also consider in the analysis CaII $\lambda 8498$, OI $\lambda 8446$, HeII $\lambda 10830$, and H γ . We characterize the line profiles in terms of FWHM, integrated flux, and peak position.

RESULTS

The continuum in the optical/near-infrared can be described in terms of two components: (i) the contribution of the accretion disk, well-described by a power-law of spectral index α , and (ii) hot dust emission, represented by Planck function of temperature T_{disk} . These two parameters seem not to be related to the strength of FeII emission.



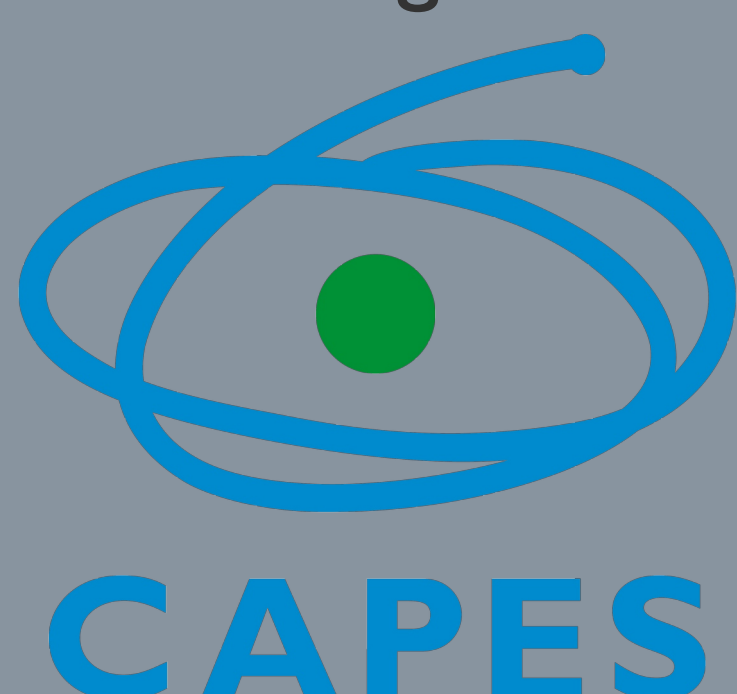
The full-width at half maximum (FWHM) of OI, CaII and FeII are similar, suggesting that they are produced in the same spatial region of the BLR. Also, the FeII strength in the optical and in the near-infrared (NIR) are strongly correlated.



FINAL REMARKS

- The parameters α and T seem not to be related to the strength of FeII emission.
- We found a common excitation mechanism for the FeII emission in the wavelength interval 4000 - 24000 Å. We found that collisional excitation dominates over the other mechanisms considered. Ly α fluorescence is particularly important to enhance the near-infrared FeII spectrum.

Acknowledgements:



References:

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