

**THE RELATIVISTIC Fe K α LINE IN TYPE 1 AGN:
REASONS FOR THE LACK OF DETECTION**

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The relativistically broadened Fe K α line, originating from the accretion disc in a close vicinity of a super massive black hole, is observed in only less than 50% of type 1 AGN. In this study we investigate could this lack of detections be explained by the effects of certain parameters of the accretion disc and the black hole, such as the inclination and the inner radius of the disc. First we simulated several thousand fully relativistic accretion discs and corresponding Fe K α line profiles in order to determine how these parameters affect the shape of the line profile. Additionally we analyzed X-ray spectra of 12 type 1 AGN, for which the line has previously been detected, taken with *XMM-Newton*. We detected the broad line in all 12 sources and found average values for inclination $i = (31 \pm 3)^\circ$ and for inner disc radius $R_{\text{in}} = 9.26 \pm 2.95 R_{\text{g}}$. Based on comparisons of the simulated and observed line profiles, we conclude that the lack of detections could, at least partially, be explained by the effects of the disc parameters and low observational quality of the data. Some crucial parts of the line profile could be hidden causing the line to appear to be originating further from the black hole and thus the line would be classified as broad but non-relativistic. The Fe K α line can also be completely obstructed and thus not detected at all.