



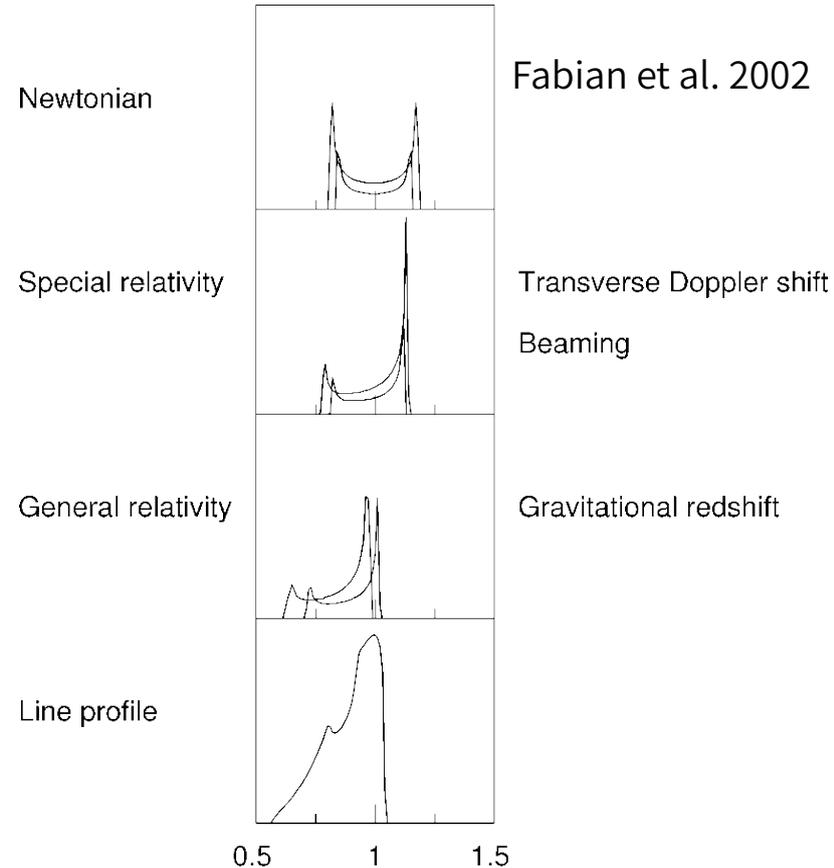
The shape of relativistically broadened Fe $K\alpha$ line in type 1 AGN

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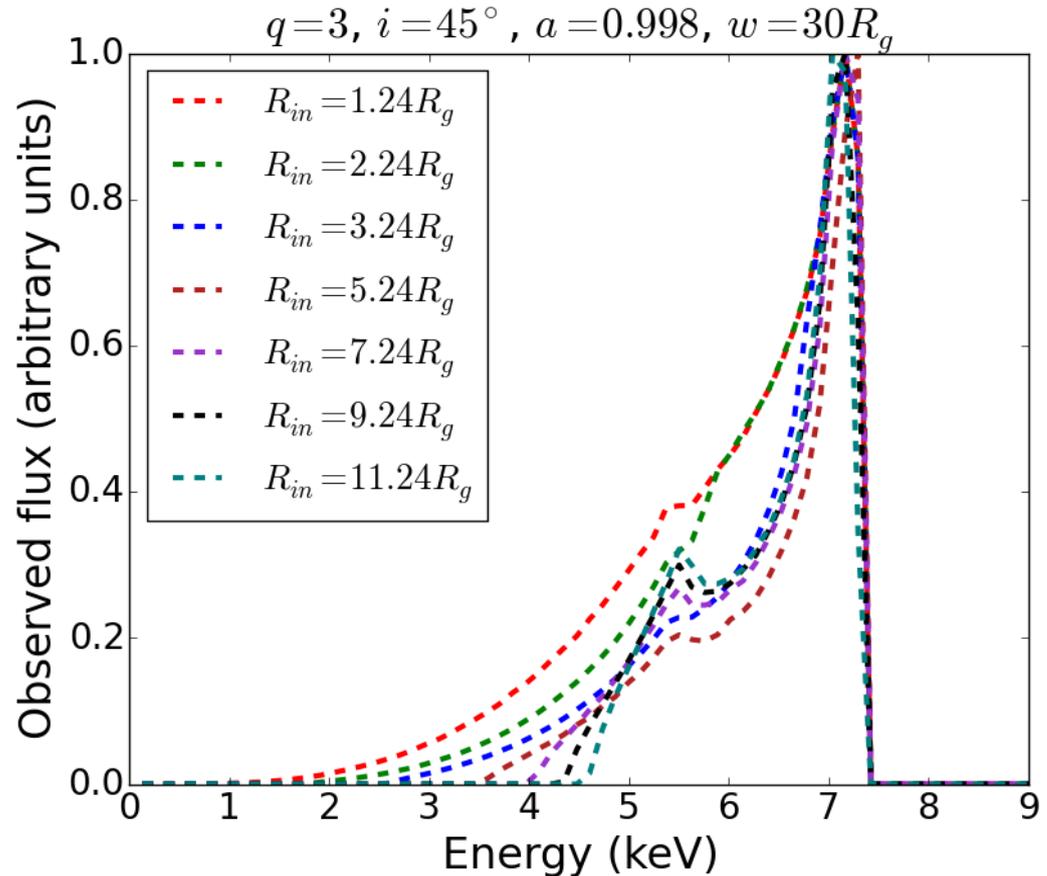
X Serbian-Bulgarian Astronomical conference
Belgrade, Serbia



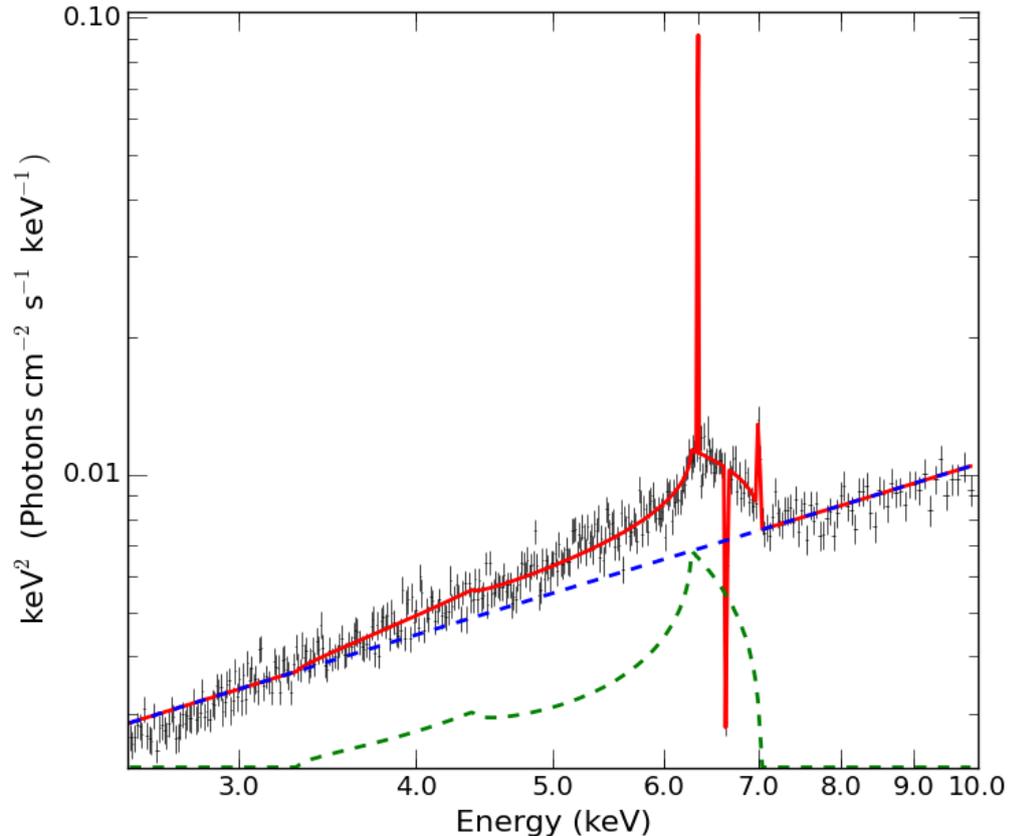
- According to Unified Model accretion disc is the source of energy output
- X-rays and Fe $K\alpha$ line at 6.4keV are emitted in inner regions of disc
- The relativistically broadened line is detected in less than 50% of type 1 AGNs
- We simulated thousands of accretion disc and corresponding line profiles
- Comparison with XMM-Newton observations



- R_{in} defines the strength of GR effects \rightarrow Smaller R_{in} , wider red wing
- Spin of the SMBH affects only a little, but it defines innermost stable orbit r_{ms}
- For $a=0.998$ $r_{ms}=1.24R_g$
- For $a=0.05$ $r_{ms}=5.84R_g$



- The broad Fe K α line is typically weak in comparison with the narrow iron lines, making it difficult to analyze.
- Especially the weaker red part of the line could be lost with bad data.
- The broad line of NGC 3516 is strong but even so, it is difficult to determine how far the red wing extends.
- Low signal-to-noise ratio could hide the red part so that the broad line would be detected either as non-relativistic broad line or not detected at all.



Thank you for your attention!

Hvala!