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High-density reflection spectroscopy of black X-ray binaries and its implication of accretion geometry

X-ray reflection spectroscopy is a powerful tool to study the accretion geometry near black holes and space-time properties. The spirit of this method is to study the reprocessed corona emission by the cold accretion disk that extends close to the black hole. Previous X-ray reflection models consider a disk density of 10^-15 cm^-3, which is only appropriate for very massive black holes (> 10^7 M_Sun). In this talk, I will present a systematic study of high-density reflection effects for black hole XRBs. The study also provides insights into their accretion geometry in the bright hard and intermediate states.

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