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Review of testing black hole candidates with electromagnetic radiation

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Abstract
Astrophysical black holes are thought to be Kerr solution of general relativity but there is not yet observational evidence to prove them. One can study the emission of electromagnetic waves around them to test their geometry of space time. In this review article, we consider the deviation from Kerr solution to test the strong gravity regime of General Relativity. We introduce and employ black hole shadow, X-ray reflection spectroscopy, iron line reverberation mapping, quasi-periodic oscillations, and continuum-fitting method to solve the degeneracy problem.

Keywords: general relativity, testing general relativity, astrophysical black holes, electromagnetic radiation

For full article, refer to the Persian section