

Electromagnetic observations of EMRIs: modeling and data analysis of quasi-periodic eruptions

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Quasi-periodic eruptions (QPEs) are intense repeating soft X-ray bursts with recurrence times about a few hours to a few days from galactic nuclei. More and more analyses show that QPEs are the result of collisions between an EMRI and an accretion disk around a supermassive black hole (SMBH) in galactic nuclei (EMRI+disk model). In this talk, I will first review existing QPE observations and the evidence for the EMRI+disk model, then report a Bayesian framework we have constructed for analyzing QPE data, and show that QPEs (EM signals of EMRIs) are a sensitive probe to the EMRI orbits and the SMBH spacetime.

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