

The Fifth Gravi-Gamma-Nu workshop



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Type: **Invited talk**

Quasi Periodic Eruptions from EMRI-disc crossings

Friday, 11 October 2024 09:30 (30 minutes)

Quasi-periodic eruptions (QPEs) are recurrent X-ray bursts observed in active galactic nuclei, characterized by regular flares followed by periods of quiescence. One potential explanation for these eruptions involves extreme mass ratio inspirals (EMRIs), where a stellar-mass compact object, such as stellar mass black hole, spirals into a supermassive black hole (SMBH). During its orbit, the EMRI periodically impacts the inner accretion disk surrounding the SMBH. These disk impacts can generate shock waves, releasing energy in the form of X-ray bursts, potentially explaining the observed QPE behavior. The connection between EMRIs and QPEs provides a promising avenue to study both SMBH environments and EMRI dynamics through their electromagnetic signatures.

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Session Classification: Day 3: Novel simulations and analysis methods