

## Probing Astrophysical Environments of Massive Black Holes with Extreme Mass-Ratio Inspirals

*Thursday, 17 October 2024 09:50 (25 minutes)*

In this talk, I will discuss the unprecedented science opportunities to probe astrophysical environments of galactic-centre massive black holes by observing extreme mass-ratio inspirals with gravitational waves and electromagnetic counterparts. Possible measurements target both direct modification of the gravitational waveform due to the environment and indirect change of system parameters (mass, spin, eccentricity) through environmental couplings. I will discuss a few examples that have been studied in recent years and highlight future promises.

**Primary author:** YANG, Huan (Tsinghua University)

**Presenter:** YANG, Huan (Tsinghua University)

**Session Classification:** Session