

V. Witzany: Environments acting on EMRIs, EMRIs acting on environments

Wednesday, June 7, 2023 2:00 PM (45 minutes)

The “vanilla” extreme mass ratio inspiral (EMRI) is a compact object spiraling onto a perfectly isolated massive black hole in general relativity. I will discuss how this can change due to an astrophysical environment and what needs to be done to faithfully and frugally capture these effects in waveforms. In the second half, I will turn attention to the fact that EMRIs may also act on the environments they occur in. In fact, we may even be already observing this now in the electromagnetic spectrum. Specifically, the astronomical community recently uncovered X-ray variability of active galactic nuclei that may well be due to EMRIs of the type LISA will observe, which I will also briefly discuss.