

Gravitational Geometry and Dynamics Group Seminar

Wed., February 25, 2026, at 11h00.

Room: Sala Sousa Pinto and Teams ID: 383 232 822 253 57

(Password: contact jnicoules@ua.pt)

Andrea Maselli

Gran Sasso Science Institute

More about *Gr@v*
at: gravitation.web.ua.pt



Probing Vacuum General Relativity: Where to Look and What to Seek?

Astrophysical environments provide an arena to test vacuum General Relativity with gravitational waves. In this talk, I will discuss what binary black hole observations can probe beyond the vacuum paradigm, and where fundamental limitations arise. I will examine how surrounding matter or fields can affect the orbital dynamics and waveform phasing, and clarify which effects are degenerate with intrinsic binary parameters or standard vacuum corrections. I will also comment on relevant observables and systematic uncertainties, outlining the regimes in which current and next-generation detectors may constrain departures from vacuum predictions, as well as those in which such tests remain challenging.