CIDMA CENTRO DE I&D EM MATEMÁTICA E APLICAÇÕES
CENTER FOR R&D IN MATHEMATICS AND APPLICATIONS

universidade de aveiro

# Gravitational Geometry and Dynamics Group Seminar

Wed., April 2, 2025, at 11h00.

**Room:** 11.2.21 and **Zoom ID:** 955 4130 8539

(*Password: contact jnicoules@ua.pt*)


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## Curvature dependence of gravitational-wave tests: from theory to observation


Next generation of gravitational wave detectors will have the sensibility to detect potential deviations in gravitational waveforms with respect to general relativity. However, current agnostic tests are plagued by a lack of realistic deviations, making it difficult to interpret such detections with respect to specific theories. In this talk, after introducing the post-Newtonian formalism in GR and beyond, I aim at bridging the gap between observations and theory by identifying the leading order post-Newtonian corrections as well as the scaling of deviations with respect to the objects' mass. I rely on a local effective field theory (EFT) approach based on curvature and/or additional scalar fields. The obtained results can be readily incorporated in all gravitational wave tests already under use by current detectors.


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


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