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

Tue., February 10, 2026, at 11h00.

Room: Sala Sousa Pinto and **Teams ID:** 394 298 711 872 08

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Interference, coherence and interferometric signature: The Physics behind black hole imaging

Our understanding of the cosmos is shaped by what we are able to observe in the sky. Resolving progressively smaller astrophysical structures requires instruments with increasingly high angular resolution. However, even an ideal telescope is limited by nature through diffraction, which ties its resolving power to the diameter of its collecting aperture. To circumvent this limitation, a technique known as interferometry is employed, in which angular resolution is determined by the separation between distinct telescopes rather than by the size of a single dish.

In this seminar, we discuss the concepts of interference, coherence, and visibility amplitude, which form the foundation of interferometric observations. We also introduce aperture synthesis, the method by which images of astrophysical sources are reconstructed from their interferometric signatures. Finally, we comment on some applications of these results to the physics of compact objects.

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

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