University of Crete
Department of Physics

Physics Colloquium

Thursday, 25 September 2025 | 17:00 – 18:00, Seminar Room 3rd Floor

Engineering Gravitational Theories

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ABSTRACT

Holography posits a radical way to quantify gravitational physics. It claims that all information of a gravitational theory in a region of space can be encoded by a quantum theory at the boundary of this region. Here I will discuss quantum gravity from a modern perspective. We will see how one can engineer—i.e., design and build—gravity through this relationship, using possible quantum theories on the boundary as materials for the undertaking. I will discuss how overcoming the challenging obstacles to this engineering task is paramount for deciphering mysterious properties of black holes, and understanding the role of fundamental aspects of quantum gravity.

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