



University of Crete
Department of Physics

Physics Colloquium

Thursday, 05 June 2025 | 17:00 – 18:00, Seminar Room 3rd Floor

The Phenomenologist's guide to the Universe

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ABSTRACT

In recent years, phenomenology in physics has evolved beyond its traditional boundaries, adapting to new methodologies and challenges across subfields. In this talk, I will reflect on the contemporary scope of phenomenological research and propose an operational definition grounded in my own work. I will examine how the role of a phenomenologist shifts depending on the availability and quality of experimental data. This will be illustrated through examples from cosmology, particle physics, and nuclear physics—including gravitational waves and primordial black holes, proposals for next-generation experimental facilities for Beyond the Standard Model searches, and machine learning applications to the study of nuclear structure. This comparative perspective highlights the flexible, yet essential, position phenomenology occupies at the interface of theory and observation in the Age of Data.
