



University of Crete
Department of Physics

Physics Colloquium

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The physics of exceptional points

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ABSTRACT

In my talk I will discuss the recent exciting developments associated with non-Hermitian degeneracies, also known as “exceptional points”. After having been studied mostly in the domain of mathematical physics, quite a number of experiments have recently demonstrated how the presence of exceptional points leads to very counter-intuitive effects, such as loss-induced lasing, chiral field modes, topological energy transfer etc. I will try to provide an introduction to this topic as well as an overview of the many different areas of physics in which exceptional points are meanwhile being explored. In particular, I will focus on the concept of encircling an exceptional point, the asymmetric state transfer associated with it and its connection to the concept of “rapid adiabatic passage”.