



University of Crete
Department of Physics

Physics Colloquium

Thursday, 5 May 2022 | 17:00 – 18:00, Online with ZOOM

Extreme wave scattering and its practical applications: from topology to non-Hermiticity and beyond

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ABSTRACT

In this talk, I will discuss how the physics of wave scattering can be leveraged to make smaller, more robust, and more efficient wave devices with concrete applications. I will first discuss how dispersive effects can be used to control waves at the sub wavelength scale, and present some practical applications in communication systems. Then, I will discuss how topology and homotopy can be exploited to endow these systems with an inherent robustness. Finally, I will move away from passive systems and demonstrate how the use of active structures or feedback control in scattering scenarios can boost our ability to manipulate the energy and momentum carried by waves, reshaping signals or moving objects in challenging disordered scenarios.

ZOOM Link: <https://us02web.zoom.us/j/87538299474?pwd=RExVOFZ6R3FENG1Yckt1b1psU0taQT09>