Contribution ID: **39** Type: **not specified**

TSAMPIKOS KOTTOS: Time-Reversal Symmetry and its Applications: From Waveform Shaping to System Protection

Monday, 17 February 2020 11:30 (1 hour)

Time-reversal symmetry and its violation is one of the most powerful concepts in physics. It has applications in many physics subfields ranging from condensed matter, optics and atomic physics to mathematical physics and quantum field theories. In this talk, we will focus on two specific implementations of time-reversal symmetry (and its violation) in the field of electrodynamics with relevance to: (a) the design of waveforms of incident electromagnetic radiation that efficiently direct energy at focal points, with applications varying from non- invasive medical therapies and wireless elecommunications to electromagnetic warfare; and (b) the design of reflective photonic limiters used for protection of sensitive sensors from high- power/fluence incoming radiation.

We will highlight the connections between these two (at first glance diametrically different) applications while at the same time we will be placing the presented research effort within the framework of recently emerging sub-field of non-Hermitian wave transport.

Session Classification: PLENARY TALKS

Track Classification: SYMPOSIUM ON SCATTERING, QUANTUM AND CLASSICAL TRANSPORT