

Physics Colloquium

Prof. Emil Bergholtz

“Exceptional Topology of Non-Hermitian Systems”

Non-Hermitian “Hamiltonians” have become an important asset for the effective description of various physical systems that are subject to dissipation. Using simple examples, I will discuss several new topological phenomena and relate them to the exclusively non-Hermitian concept of exceptional degeneracies at which both eigenvalues and eigenvectors coalesce. I will also discuss how these new ideas might be harnessed for practical applications, such as sensor devices.

After completing his PhD from Stockholm University, Emil Bergholtz joined Max Planck Institute for the Physics of Complex Systems (MPI-PKS), Dresden as a PKS Fellow and subsequently moved to Freie University Berlin as the Emmy Noether Group Leader, before returning to Sweden as a Professor at Stockholm University. Prof. Bergholtz works on strongly correlated systems, in particular the fractional quantum Hall effect, fractional Chern insulators, spin liquids, entanglement in many-body systems, Weyl semimetals and more recently open systems and non-Hermitian topology.

Thursday March 11th at 2:25 via Zoom

If you are outside the Lehigh Physics Department, please email Professor Bitan Roy (bir218@lehigh.edu)