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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Seminar

Title : Hunting for topological phases amidst Hofstadter butterflies and disordered landscapes

Speaker : Smitha Vishveshwara, University of Illinois, USA

Date : Wednesday, July 04, 2018

Time : 3:00 PM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : In this talk, rich topological behavior in two related models will be discussed– the Majorana wire and a Su-Schrieffer-Heeger ladder- in the presence of potential energy landscapes. An introduction of the two models and of techniques that directly provide information on edge-state properties will form the starting point for obtaining topological phase diagrams in these models. In the case of these systems subject to a quasiperiodic potential, a beautiful topological phase diagram emerges mimicking Hofstadter’s butterfly patterns. In the case of disordered potential landscapes, Anderson localization physics informs the behavior of the disordered topological phase diagram. Finally, the possible implementation of this physics in a variety of experimental systems, including solid state, cold atomic and electro-mechanical settings will be presented.