Seminar/Talk

Bulk-Edge Duality and Complete Localization for Disordered Chiral Chains

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Host: Laszlo Erdös

We study one dimensional insulators obeying a chiral symmetry in the single-particle picture where the Fermi energy is assumed to lie within a mobility gap. Topological invariants are defined for infinite (bulk) or half-infinite (edge) systems, and it is shown that for a given bulk system with nearest neighbor hopping, the invariant is equal to the induced-edge-system's invariant. We also give a new formulation of the topological invariant in terms of the Lyapunov exponents of the system, which sheds light on the conditions for topological phase transition extending to the mobility gap regime. We investigate the conditions for a mobility gap to exist in a probabilistic model, and give a proof of complete dynamical localization at all non-zero energies via Furstenberg's theorem and the fractional moments method.(Joint work with G. M. Graf)

Tuesday, November 28, 2017 04:00pm - 06:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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