

Massachusetts Institute of Technology
Department of Physics

Condensed Matter Theory Seminar

"Stability of Disordered Floquet Topological Phases"

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Abstract: In modern experiments, high-frequency periodic fields are used to create Floquet topological phases of matter. Taking into account the complex nature of finite-frequency disorder contribution to the Floquet Hamiltonian, one may wonder about the stability of these systems against local disorder. We leverage modern free probability theory and ideas in random matrices to predict the fate of finite frequency Floquet topological phase in the presence of such disorder. We confirm, depending on disorder strength, the existence of gapped topological and gapless trivial phases, as well as a transition between them at a critical disorder strength. Our method can be applied to a variety of Floquet models and shows a good agreement with numerical simulations.

arXiv: 1803.08519

12:00pm noon
Friday, April 13, 2018
Duboc Room (4-331)

Host: Brian Skinner