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**Dissipation induced topological insulators: A recipe** MOSHE GOLDSTEIN, Tel Aviv University, Israel — It has recently been realized that driven-dissipative dynamics, which usually tends to destroy subtle quantum interference and correlation effects, could actually be used as a resource. By proper engineering of the reservoirs and their couplings, one may drive a system towards a desired quantum-correlated steady state, even in the absence of internal Hamiltonian dynamics. An intriguing class of quantum phases is characterized by topology, including the quantum Hall effect and topological insulators and superconductors. Which of these noninteracting topological states can be achieved as the result of purely dissipative Lindblad-type dynamics? Recent studies have only provided partial answers to this question. In this talk I will present a general recipe for the creation, classification, and detection of states of the integer quantum Hall and 2D topological insulator type as the outcomes of coupling a system to reservoirs, and show how the recipe can be realized with ultracold atoms and other quantum simulators. The mixed states so created can be made arbitrarily close to pure states, and the construction may be generalized to other topological phases.

Moshe Goldstein
Tel Aviv University

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