

Abstract Submitted
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Physical observables in a model with topological structure and time-dependent perturbations¹ BENJAMIN M. FREGOSO, JAN P. DAHLHAUS, University of California, Berkeley, JOEL E. MOORE, University of California, Berkeley and Lawrence Berkeley National Laboratory, JAMES K. FREDERICKS, Georgetown University — We study a model of spin-full fermions on a lattice in a finite geometry that is acted upon by a time-dependent perturbation, e.g., an intense laser pulse, which induces non-trivial topological band structure. While it is possible for such time-dependent perturbations to modify the band structure, e.g, creating edge states or modifying the Chern number, it is far less clear under what conditions such topological effects can be observed in experimental settings. Two regimes are studied, the transient regime and the non-equilibrium steady state regime. We provide conditions under which physical observables carry signatures of the induced topological structure.

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