Modifying properties of Chern insulators by time dependent perturbations

BENJAMIN M. FREGOSO, VICTOR GALITSKI, Joint Quantum Institute and Condensed Matter Theory Center, University of Maryland — We study the quantum dynamics of topological Chern insulators in the presence a time dependent perturbation. We show that and under proper drive conditions they can be turned into trivial insulators or insulators with a higher Chern number. We discuss signatures of such states in the context of non-adiabatic Thouless pumping. We argue that this provides a way to tune the properties of topological systems.

1funding provided by PFC