

Abstract Submitted
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Edge State Transport in a Quantum Spin Hall Insulator: Effects from Rashba Spin-Orbit Coupling¹ HENRIK JOHANNESSON, ANDERS STRÖM, University of Gothenburg, Sweden, GEORGE I. JAPARIDZE, Andronikashvili Institute of Physics, Georgia — We analyze the dynamics of the helical edge modes of a quantum spin Hall insulator in the presence of a spatially non-uniform Rashba spin-orbit coupling. The Rashba coupling is found to open a scattering channel which causes localization of the edge modes when the electron-electron interaction or the spatial Rashba variation is sufficiently large. We discuss implications for experiments on edge state transport in HgTe quantum wells.

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