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A non-perturbative general expression for the conductance through a leaky chiral edge mode KUN WOO KIM, California Institute of Technology, ALEXANDRA JUNCK, Freie Universitt Berlin, ISRAEL KLICH, University of Virginia, GIL REFAEL, California Institute of Technology — Chiral edge modes of topological insulators and Hall states exhibit non-trivial behavior of conductance in the presence of impurities or additional channels. We will present a simple formula for the conductance through a chiral edge mode coupled to a disordered bulk. For a given coupling matrix between the chiral mode and bulk modes, and a Green function matrix of bulk modes in real space, the renormalized Green function of the chiral mode is expressed in a closed form ratios of determinants. We will conclude with examples of how the formula could be applied to describe the behavior of a chiral mode coupled to different types of bulk systems.

Kun Woo Kim
California Institute of Technology

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