

Klein Tunneling on heterostructures of Chern Insulators

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Abstract: Klein tunneling is a phenomenon that appears on relativistic quantum particles and refers to perfect transmission of electrons even with high and width potential barriers. As topological materials can be described by the Dirac equations, it's possible to find Klein tunneling on them [1]. In this work, we discuss Klein tunneling on a lateral heterostructure of two Chern insulators with different mass term. Chern insulators are the simplest model of a 2D topological insulator since they don't possess any internal symmetry [2]. We show that these insulators have perfect transmission like graphene [3] depending on the angle of incidence of the electrons and the length of energy barrier.

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