

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Effects of Metallic Contacts on Topological Insulator Surface States JIMMY HUTASOIT, TUDOR STANESCU, West Virginia University — We study the effect of the coupling between a time-reversal invariant topological insulator and a metal. The coupling of the surface states to the metal is studied both numerically, using a tight-binding model, and analytically within a two-dimensional effective theory. The original surface state described by a massless Dirac fermion acquires a non-trivial spectral profile upon interaction with the metal. This results in the broadening of the surface modes and a shift in the position of the Γ - point, which may sink into the valence band at strong coupling.

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Date submitted: 19 Nov 2010

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