

Abstract Submitted  
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**The topological insulator and a parasitic metal - friends or foes?**

DORON BERGMAN, GIL REFAEL, California Institute of Technology — The best experimental characterization of a topological insulator currently available is by identifying its surface states using ARPES. The same surface states revealed by spin-polarized ARPES in the BiSb topological insulator alloy seem to appear in pure Sb as well (D. Hsieh et al. Science 323, 919 (2009)), and seem to be robust to at least mild disordering of the material. Motivated by this observation, we explore the physics of a topological insulator perturbed by a (parasitic) metallic band, in order to determine whether a bulk metal can have a topologically non-trivial character, and how general these circumstances are.

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