

Abstract for the Eurasia-Pacific Summer School and Conference 2012 (Invited talk)

Topological Insulators and Topological Semimetals

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In addition to topological insulator, the topological semimetal is a new non-trivial state with Fermi points in the bulk and Fermi arcs on the surface. In this talk, I will start from our earlier works for Bi_2Se_3 family topological insulators, and then move to the recent study for topological semimetals. I will discuss several possible realizations of those non-trivial states, based on first-principles calculations. In particular, I will discuss the HgCr_2Se_4 and Na_3Bi compounds.