



清华大学高等研究院

Institute for Advanced Study, Tsinghua University

物理学学术报告 Physics Seminars (biweekly)

Title: Topological Weyl Semimetal and Unconventional Superconductivity in Doped Topological Insulators

Speaker: Prof. Xiangang Wan (*Nanjing University*)

Time: 3:15pm, Wednesday, Nov. 13, 2013
(2:45~3:15pm, Tea, Coffee, and Cookie)

Venue: Conference Hall 322, Science Building, Tsinghua University

Abstract

Novel properties arise from the interplay of electron correlations and spin-orbit interactions, and we find that a remarkably rich phase diagram emerges on tuning the correlation strength U . We also perform first principle linear response calculations of electron-phonon interaction in several proposed topological superconductors and argue that a highly unusual case of a singular coupling is realized for doped Bi_2Se_3 . We discuss consequences of such singular behavior and uncover which peculiar details of the electrons interacting with lattice can provide a novel platform for unconventional and topological superconductivity phenomena.