



中国科学院
固体物理研究所

学术报告(11.25 上午 8:30)

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

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摘要: The theory of topological insulators has usually focused on the gapped systems. Here, we will discuss a gapless system--Weyl Semimetal. Weyl Semimetal is a new topological phase manifested by special surface states in the form of Fermi arcs, that connect the bulk Weyl points. I will also discuss our recent work about turning topological insulator into a superconductor. We use a first principles linear response calculation to show that in doped Bi₂Se₃ an unconventional odd-parity state can be favored via a conventional phonon-mediated mechanism, as driven by an unusual, almost singular behavior of the electron-phonon interaction at long wavelengths. This may provide a new platform for our understanding superconductivity phenomena in doped band insulators.

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