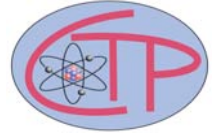




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
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Signature of topological phase transition in superconducting phase of doped topological insulators

Presented by:

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Thursday, March 12 at 1:00 PM
Namm, Room 823

Abstract

Many of the topological insulators, in their naturally available form are not insulating in the bulk. It has been shown that some of these metallic compounds, become superconductor at low enough temperature and the nature of their superconducting phase is still widely debated. In this talk I show that even the s-wave superconducting phase of doped topological insulators, at low doping, is different from ordinary s-wave superconductors and goes through a topological phase transition to an ordinary s-wave state by increasing the doping. I show that the critical doping is determined using the SU(2) Berry phase on the fermi surface of doped topological insulator and can be modified by different tunable features of the material. I will also show that quantum zero point motion of the vortex will magnify the signature of this topological phase transition and present some possible experimental signatures of this effect.

Light refreshments will be served.