Joint Seminar – CQSE, CTP, & CASTS

2019
Dec. 13, Friday

TIME Dec. 13, 2019, 2:30~3:30pm
TITLE A flux tunable superconducting quantum circuit based on Weyl semimetal
SPEAKER Prof. Kuei-Lin Chiu
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Abstract

Superconducting and topological quantum computing are two platforms in which information is encoded using entirely different paradigm. When a topological material is coupled to a s-wave superconductor, the supercurrent can be carried by their robust and topologically protected surface/edge channels, which results in exotic excitation that mimics the behavior of Majorana Fermions. In line with the interests to probe such excitations, in this talk, I will first introduce the concept of topology in condensed matter physics. Followed by an introduction of Majorana bound states and the concept of superconducting qubit, I will then introduce a transmon consists of superconducting circuit and topological material. We demonstrated a Josephson junction and a flux-tunable superconducting quantum circuit based on Weyl semimetal.