

CMP Seminar

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Towards topological quantum computing with Kitaev materials

Recent thermal-transport experiments indicate that the Kitaev material RuCl₃ realizes a non-Abelian spin liquid over a range of magnetic fields. This talk will explore a series of measurements for *electrically* detecting the hallmark chiral Majorana edge states and bulk anyons in the spin-liquid phase -- despite the fact that RuCl₃ is a good Mott insulator. In particular, I will introduce circuits that exploit interfaces between electronic systems and RuCl₃ to convert physical fermions into emergent fermions, thus enabling analogues of transport probes of non-Abelian-anyon physics in topological superconductors. These results illuminate a partial pathway towards using Kitaev materials for topological quantum computation.

Monday, November 4th, 2019 at 4:10 p.m.
Room: 1400 BPS Bldg.
Host: Mark Dykman