

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Electron teleportation via Majorana Bound States in a Mesoscopic Superconductor LIANG FU, Harvard University — Majorana fermions are non-Abelian anyons in $5/2$ fractional quantum Hall states and superconductors, which can store quantum information in an inherently nonlocal way. We describe a phase-coherent electron transport phenomena through two spatially separated Majorana bound states in a mesoscopic superconductor. This striking nonlocal effect arises from the interplay between topological order, superconducting order parameter and mesoscopic effects. We discuss its implications for experimental detection of Majorana fermions and topological quantum computation. Ref: Liang Fu, Phys. Rev. Lett. 104, 056402

Liang Fu
Harvard University

Date submitted: 18 Nov 2010

Electronic form version 1.4