SES16-2016-000085

Abstract for an Invited Paper
for the SES16 Meeting of
the American Physical Society

Topological strings and fractional pumping in superconductors

JEFFREY TEO, University of Virginia

Quantum flux vortices are topological line defects of the pairing order parameter in a superconductor in three dimensions. On the other hand, chiral gapless Majorana fermions live along another kind of topological line defects that involve non-trivial spatial modulations of the Bogoliubov-de Gennes Hamiltonian. Topological strings are combinations of these two types of line defects. I theoretically describe the different fractional pumping processes through linking topological strings in superconducting Dirac semimetals.