

Interferometric signatures of electron transfer through Majorana bound states.

J. Barański¹

¹*Polish Air Force University, ul. Dywizjonu 303, 08-521, Dblin, Poland*

(Dated: March 13, 2019)

Recent development of QD-nanowire hybrids provide usefull tools to perform analysis that goes beyond mere observation of Majorana bound states (MBS) existence. In these system for weak coupling the resonant scattering on MBS give rise to interferometric structures. If in turn the object is strongly coupled to Majorana mode the interferometric structures evolve into quasiparticle peak pinned to Fermi level. This can be understood as a "leakage" of Majorana mode into nontopological region. Using two QD's coupled to opposite ends of Rashba chain we propose the setup at which the electron transfer through the Majorana states can be demonstrated by measurement of a local currents. In our work we show that scattering of an electron on one QD give rise to interferometric signatures on QD connected to opposite side of Rashba chain.