

Transport properties of interacting fermions in one-dimensional topological superconductors

D. Meidan¹, A. Romito² & P. W. Brouwer³

¹ *Department of Physics, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel*

² *Physics Department, Lancaster University, Lancaster, LA1 4YB, UK*

³ *Dahlem Center for Complex Quantum Systems and Fachbereich Physik, Freie Universitat Berlin, 14195 Berlin, Germany*

A topological superconducting wire with an effective time reversal symmetry is known to have a \mathbb{Z}_8 topological classification in the presence of interactions. The topological index $|n| \leq 4$ counts the number of Majorana end states, negative n corresponding to end states that are odd under time reversal. We show that when such a wire is weakly coupled to a normal-metal lead, interactions induce a Kondo-like correlated state if $|n| = 4$. This Kondo-like state manifests itself in an anomalous temperature dependence of the zero-bias conductance and by an anomalous Fano factor for the zero-temperature normally-reflected current at finite bias.