

Abstract Submitted
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Transport signatures of topology protected quantum criticality in Majorana islands¹ MICHAL PAPAJ, ZHENG ZHU, LIANG FU, Massachusetts Inst of Tech-MIT — Using numerical renormalization group we study a topological superconductor island coupled to three metallic leads in the vicinity of the charge degeneracy point. We show that the system flows to a non-Fermi liquid fixed point at low temperatures with fractional quantized DC conductance of $2/3 e^2/h$. Our proposal is experimentally feasible due to a much larger crossover temperature than in the previously studied cases and the robustness of the setup against the channel coupling anisotropy and charge degeneracy detuning. Including Majorana hybridization drives the system into a Fermi liquid phase at very low temperatures. The two proposed experimental signatures of multi-terminal electron teleportation include nonmonotonic temperature dependence of DC conductance and emergence of a plateau at $2/3 e^2/h$ in tunnel coupling dependence of DC conductance.

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