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Interplay of Majorana and Kondo modes in an interacting quantum dot coupled to a topological quantum wire[1] DAVID A. RUIZ-TIJERINA, Instituto de Física, Universidade de São Paulo, EDSON VERNEK, Instituto de Física, Universidade Federal de Uberlândia, LUIS G. G. V. DIAS DA SILVA, Instituto de Física, Universidade de São Paulo, J. CARLOS EGUES, Instituto de Física de São Carlos, Universidade de São Paulo — We investigate the low-temperature conductance of an interacting quantum dot (QD) coupled to a topological quantum wire. Our realistic model includes the Rashba spin-orbit interaction, proximity s-wave superconductivity, an applied magnetic field, and an Anderson-type interacting QD. Using recursive Green's function techniques we find a QD conductance of $0.5e^2/h$, associated with the emergent Majorana end mode in the wire "leaking" into the QD. This signature is robust, appearing in the presence of Zeeman fields and even when the QD is deep in the Coulomb blockade. We further study the Kondo regime using the numerical renormalization group. Our results indicate a strong interplay between Majorana & Kondo physics. The Kondo effect can be quenched by Zeeman fields, revealing a persistent $0.5e^2/h$ conductance coming from the Majorana mode leaking into the QD. These properties can be used for the experimental identification of Majorana-Kondo physics in these systems. Our results here corroborate and extend those of [*Phys.Rev.B* **89**, 165314 (2013)] by showing that the Majorana resonance pinned to the Fermi level arising in the QD is robust and survives even in the presence of Coulomb effects within the QD.

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David Ruiz-Tijerina
Univ de Sao Paulo

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