Abstract Submitted
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Effects of a rotating magnetization on electron correlations in the ballistic regime Josephson Junction[1] LUIS LEAL, ANDREAS BILL, Cal State Univ- Long Beach — The pair correlations of electrons leaking from a superconductor into a magnetic material are modified by the local magnetization. We investigate the singlet triplet mixing of these correlations resulting from a domain wall in a ferromagnet. We model our system in the clean limit using a tight-binding Hamiltonian and solve the Bogoliubov– de Gennes equations to determine the Go'kov functions of the system. We present first results for three different proximity systems: an antiferromagnet, a homogeneous ferromagnet, and a helical magnet with variable twist; all sandwiched between two superconductors. The goal of the study is to revisit how pair correlations are affected by different magnetization configurations, and compare the results in the clean and the diffusive regimes.

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