

Abstract Submitted
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Tunneling and Transport in Clean Ferromagnet-Superconductor Heterostructures¹ CHIEN-TE WU, ORIOL VALLS, School of Physics and Astronomy, University of Minnesota, KLAUS HALTERMAN, Michelson Lab, Physics Division, Naval Air Warfare Center — We study charge and spin transport in clean Ferromagnet (F)-Superconductor (S) layered structures. By combining a transfer matrix method with a numerical self-consistent solution of the Bogoliubov-de Gennes (BdG) equations, we compute the spin dependent tunneling conductance in F-F-S trilayers in a range of exchange fields and layer thicknesses. In particular, we investigate the dependence of the tunneling conductance on the angle α between the magnetizations in two F layers. We find a variety of non-monotonic and switching behaviors in these heterostructures. We also present results for charge and spin transport in S-F-F-S Josephson junctions.

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Chien-Te Wu
School of Physics and Astronomy, University of Minnesota

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