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Observation of Spin Accumulation Induced Suppression of
Superconductivity

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Abstract

Spin accumulation induced suppression of superconductivity in ferromagnet-superconductor-ferromagnet double tunnel junctions is demonstrated. The measured superconducting gap as a function of magnetic field reveals a dramatic decrease when the magnetizations of the two leads are in opposite orientations. The effect of suppression increases with increasing voltage but decreases at elevated temperatures. The possible explanations for these dependences are given.