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Anomalous Josephson Effect in Junctions with Rashba Spin-Orbit Coupling[1] KONSTANTIN NESTEROV, MANUEL HOUZET, JULIA MEYER, Univ. Grenoble Alpes, INAC-SPSMS, F-38000 Grenoble, France and CEA, INAC-SPSMS, F-38000 Grenoble, France — We study two-dimensional double-barrier SINIS Josephson junctions in which the inversion symmetry in the normal part is broken by Rashba spin-orbit coupling. In the presence of a suitably oriented Zeeman field in the normal part, the system displays the anomalous Josephson effect: the current is nonzero even at zero phase difference between two superconductors.[2] We investigate this effect by means of the Ginzburg-Landau formalism and microscopic Green's functions approach in the clean limit.

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[2]A. Buzdin, Phys. Rev. Lett. **101**, 107005 (2008).

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