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Superconductivity in the repulsive Rashba model LUYANG

WANG, OSKAR VAFEK, National High Magnetic Field Laboratory and Department of Physics, Florida State University — We study the superconducting instability of a two dimensional Rashba spin-orbit coupled system with a weak repulsive interaction by a two step renormalization group (RG) method introduced by Raghu et.al. (PRB 81, 224505 (2010)). We present the superconducting transition temperature T_c in terms of the correlation functions of the non-interacting system. The RG flows in the Cooper channel break down below some scale, which we identify with T_c and verify that the T_c is independent of the intermediate cutoff. Finally, we present results of T_c as a function of spin-orbit coupling strength.

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