

Abstract Submitted
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Superconductivity in anisotropic ferromagnets near a transverse saturation field¹ ILYA VEKHTER, Louisiana State University, KAZUSHI AOYAMA, The Hakubi Center for Advanced Research, Kyoto University, Kyoto 606-8501, Japan and Department of Physics, Kyoto University, Kyoto 606-8502, Japan, HIROAKI IKEDA, Department of Physics, Kyoto University, Kyoto 606-8502, Japan — In the uranium compounds such as URhGe, UCoGe, and UGe₂, superconductivity emerges inside ferromagnetic phases and often exhibits a reentrant behavior in a magnetic field. Motivated by this experimental observation, we consider a model for superconductivity in an anisotropic ferromagnet under transverse field. We derive the spectrum of critical magnetic excitations near the saturation field, derive the pairing interaction due to exchange of these spin fluctuations, and compute the transition temperature into the superconducting state. We compare our results with experiments on U-based ferromagnetic superconductors and with recent theoretical analyses.

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