

Abstract Submitted
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Anomalous Pinning Fields in Helical Magnets¹ D. BELITZ, Department of Physics, and Institute of Theoretical Science, University of Oregon, Eugene, OR 97403, T.R. KIRKPATRICK, Institute for Physical Science and Technology, and Department of Physics, University of Maryland, College Park, MD 20742 — The spin-orbit interaction strength g_{SO} in helical magnets determines both the pitch wave number q and the critical field H_{C1} where the helix aligns with an external magnetic field. Within a standard Landau-Ginzburg-Wilson (LGW) theory, a determination of g_{SO} in MnSi and FeGe from these two observables yields values that differ by a factor of 20. This discrepancy is remedied by considering the fermionic theory underlying the LGW theory, and in particular the effects of screening on the effective electron-electron interaction that results from an exchange of helimagnons [1].

[1] T.R. Kirkpatrick and D. Belitz, Phys. Rev. B, in press.

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