

Abstract Submitted
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Theory for Magnetism and Triplet Superconductivity in LiFeAs¹

MARIA DAGHOFER, IFW Dresden, PHILIP BRYDON, CARSTEN TIMM, TU Dresden, JEROEN VAN DEN BRINK, IFW Dresden — Superconducting pnictides are widely found to feature spin-singlet pairing in the vicinity of an antiferromagnetic phase, for which nesting between electron and hole Fermi surfaces is crucial. LiFeAs differs from the other pnictides by (i) poor nesting properties and (ii) unusually shallow hole pockets. Investigating magnetic and pairing instabilities in an electronic model that incorporates these differences, we find antiferromagnetic order to be absent. Instead we observe almost ferromagnetic fluctuations which drive an instability toward spin-triplet p -wave superconductivity.

P.M.R. Brydon, M. Daghofer, C. Timm, and J. van den Brink, arXiv:1009.3104

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