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Chiral d-wave superconductivity in SrPtAs: A Weyl superconductor TITUS NEUPERT, Princeton University, MARK FISCHER, Weizmann Institute, CHRISTIAN PLATT, University of Wuerzburg, ANDREAS SCHNYDER, Max Planck Institute for Solid State Research, WERNER HANKE, RONNY THOMALE, University of Wuerzburg, MANFRED SIGRIST, ETH Zurich, JUN GORYO, Hirosaki University — Recent μSR measurements suggest that the hexagonal pnictide SrPtAs is a chiral d-wave superconductor that spontaneously breaks time-reversal symmetry in the superconducting state. The d-wave order parameter fully gaps all Fermi surfaces, except for point nodes on one Fermi surface sheet near the K and K' points at the Brillouin zone corners. Theses nodal points are Majorana-Weyl fermions in momentum space. We study the topological characteristics of this superconducting phase, which features protected chiral surface states, Majorana-Fermi arcs on the surface and an associated thermal Hall response.

Titus Neupert
Princeton University

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