

Abstract Submitted
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History Dependence of the Vortex Lattice Rotation in the B-phase of UPt₃ with $\mathbf{H} \parallel \mathbf{c}$ ¹ K.E. AVERS, Northwestern Univ, M.R. ESKILDSEN, Notre Dame University, W.P. HALPERIN, W.J. GANNON, Northwestern Univ, J.L. GAVILANO, G. NAGY, U. GASSER, Paul Scherrer Institute — The unconventional superconductor UPt₃ is widely believed to be a triplet superconductor, where the low temperature superconducting B-phase is a chiral state. We have performed small angle neutron scattering (SANS) from the vortex lattice (VL) in UPt₃ at the Paul Scherrer Institute with the magnetic field parallel to the hexagonal *c*-axis in the 0.5 T to 0.9 T range. The diffraction pattern of the VL rotates away from a high symmetry direction producing two domains of different orientation. Our field dependent measurements show a subtle magnetic field history dependence of this orientation; VLS prepared with the magnetic field parallel or anti-parallel with respect to the angular momentum from the circulating screening currents show different field-history dependence. These results suggest a coupling of a chiral superconducting order parameter with the applied magnetic field.

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Keenan Avers
Northwestern Univ

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