Abstract Submitted
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Anomalous normal state magneto-resistance in the noncentrosymmetric superconductor Li_2Pt_3B[1] B. J. TAYLOR, C. MCELROY, T. A. SAYLES, UCSD, A. C. MOTA, Festkoerperphysik, ETH-Zurich, M. BRIAN MAPLE, UCSD — The isotypic superconducting compounds Li_2Pd_3B and Li_2Pt_3B crystallize in a structure lacking physical inversion symmetry. In contrast to the inversion symmetry breaking superconductors $CePt_3Si$, $CeRhSi_3$, and UIr, to date, no evidence of magnetic order has been reported in either Li_2Pd_3B or Li_2Pt_3B. Through detailed magnetoresistive and magnetization measurements of Li_2Pt_3B, we have observed behavior suggestive of a link between normal state electronic transport and magnetic behavior, and properties of the superconducting ground state. Corresponding changes in magnetoresistive and magnetic behavior are found wherein both properties exhibit two distinct features at high and intermediate temperatures. Remarkably, both features evolve as a function of magnetic field and temperature towards the $T = 0$ value of the superconducting upper critical field $H_{c2}(0) \approx 1.5$ T. Polycrystalline samples of Li_2Pt_3B with the highest reported values to date of the superconducting critical temperature, $T_c = 3$K , and residual resistivity ratio, RRR ≈ 2, were used in this study.

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