Ambipolar transport in the field-suppressed superconducting state of quasi-one-dimensional Li$_{0.9}$Mo$_6$O$_{17}$

JOSHUA L. COHN, University of Miami, CARLOS A. M. DOS SANTOS, Escola de Engenharia de Lorena - USP, Brazil, JOHN J. NEUMEIER, Montana State University — We present resistivity, Hall, Seebeck, and Nernst coefficient measurements in the range 0.4 $K \leq T \leq 20$ K on single crystals of the quasi-one-dimensional (Q1D) metal, Li$_{0.9}$Mo$_6$O$_{17}$ with current along the Q1D metallic chains. At temperatures below the nominal superconducting transition temperature ($T_c = 2$ K), a transition from hole-like ($\mu_0 H < 1$ T) to electron-like ($\mu_0 H \geq 2$ T) behavior is evidenced in the magnetotransport coefficients. Possible insights from these results into the nature of the mysterious density-wave order$^{a,b}$ responsible for the upturn in resistivity below $\sim 25$ K will be discussed.


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