

Abstract Submitted  
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**Unconventional Anomalous Hall Effect in  $\text{UCu}_5$** <sup>1</sup> B.G. UELAND, C.F. MICLEA, I. MARTIN, E.D. BAUER, R. MOVSHOVICH, F. RONNING, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, Z. FISK, Department of Physics & Astronomy, University of California, Irvine, California 92697, USA, J.D. THOMPSON, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA — Field-dependent resistivity, magnetization, and specific heat measurements have been carried out on the heavy fermion compound  $\text{UCu}_5$ . We find an unconventional anomalous Hall resistance below the lower temperature magnetic transition at  $T_2 \sim 1$  K that is proportional to neither the magnetization nor the longitudinal resistivity. We discuss the origin of this resistance in terms of the itinerant carriers' interaction with the magnetically ordered U cations. Complementary measurements on  $\text{Lu}_{1-x}\text{U}_x\text{Cu}_5$ ,  $x = 0$  to 0.15 show how non-magnetic dilution affects the Hall resistance and magnetic phase diagram. Interestingly, light Lu substitution for U appears to stabilize the low temperature magnetic phase.

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Benjamin Ueland  
Los Alamos National Laboratory,  
Los Alamos, New Mexico 87545, USA

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