

Abstract Submitted  
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**Cd and Sn doping effects on Pauli limiting and HFLT state in CeCoIn<sub>5</sub>**<sup>1</sup> R. MOVSHOVICH, Y. TOKIWA, N. KURITA, F. RONNING, E.D. BAUER, P. PAPIN, J.D. THOMPSON, Los Alamos National Laboratory, Los Alamos, NM 87544, USA, A.D. BIANCHI, University of Montreal, Montreal, QC, H3C 3J7 Canada, J.F. RAUSCHER, S.M. KAUZLARICH, Z. FISK, University of California, Davis, California 95616, USA, I. VEKHTER, Louisiana State University, Baton Rouge, Louisiana 70803, USA — We investigated the effect of Cd and Sn doping on the superconducting (SC) transition temperature  $T_c$ , the superconducting critical field  $H_{c2}$ , and the High-Field-Low-Temperature (HFLT) phase in heavy fermion superconductor CeCoIn<sub>5</sub>.  $T_c$  decreases monotonically for both dopants, whereas  $H_{c2}$  rises initially with Cd substitution, while dropping for Sn doping. Analysis of the magnetization data suggests that these effects are caused by weakening of the Pauli limiting in CeCoIn<sub>5</sub> with Cd doping, most likely due to changes of susceptibility of the normal state. Both Cd (leading to AFM ground state at higher concentrations) and Sn impurities, at a very low level of a few hundred ppm, suppress the HFLT phase. We interpret these results as supporting the superconducting origin of the HFLT phase.

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