

Abstract Submitted
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Characterization of Doped CeCoIn₅ A.R. TREAT, Boston College, J.C. COOLEY, Los Alamos National Laboratory, C.P. OPEIL, Boston College — Department of Physics, Boston College, Chestnut Hill, Massachusetts 02467. Los Alamos National Laboratory, Los Alamos, New Mexico 87545. CeCoIn₅ is an unconventional, d-wave, heavy fermion superconductor with a critical temperature of $\sim 2.3\text{K}$. The physical properties of doped samples of CeCo_{1-x}M_xIn₅, where M is Fe, Cr, Rh, Ru, Ir, Mn, Ni, V, or Cu for $x \leq 0.03$, are characterized. Resistivity, magnetoresistance, and magnetization are measured in a temperature range 5 - 300K and magnetic field up to 9 Tesla; the magnetization is measured using a capacitive cantilever magnetometer. The effect of the dopants on resistivity and magnetization, with regard to percentage x present in the sample, provides valuable insight into the character of the parent material CeCoIn₅. Implications of magnetic, diamagnetic, and non-magnetic doping of CeCoIn₅ will be discussed.

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