

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

High-pressure resistivity of CeCoIn₅ at low temperatures using four-point probe technique and finite element analysis¹ NATHANIEL BRADY, GEORGIY TSOI, University of Alabama at Birmingham, TESFAYE GEBRE, National High Magnetic Field Lab, YOGESH VOHRA, DAVID HILTON, University of Alabama at Birmingham — We performed high-pressure electronic characterization of the heavy fermion superconductor, CeCoIn₅. Using a designer diamond anvil four-point probe system, we measured the temperature-dependent resistivity up to 25 GPa and found evidence for a decrease in the effective mass at high pressures. We determined the resistivity using Van Der Pauws method and a finite element analysis approach. Room temperature resistivity with increasing pressure was also measured and a maximum in resistivity was observed near ~ 8 GPa. These data suggest the existence of a pressure-dependent modification of the $4f$ hybridization at the highest pressures

¹Nathaniel Brady acknowledges support from the Department of Education Grant No. P200A090143.

Nathaniel Brady
University of Alabama at Birmingham

Date submitted: 26 Nov 2010

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