

Abstract Submitted
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High-Pressure Electrical and Structural Characterization of CeCoIn₅¹ NATHANIEL BRADY, GEORGIY TSOI, University of Alabama at Birmingham, TEFAYE GEBRE, ERIC PALM, STANLEY TOZER, TIMOTHY MURPHY, National High Magnetic Field Lab, YOGESH VOHRA, DAVID HILTON, University of Alabama at Birmingham — We have performed both electrical and structural characterizations of the heavy fermion, CeCoIn₅, in a *high-pressure* designer diamond anvil cell (0 to 60 GPa). First, we performed four-point probe measurements of the electrical resistivity as a function of temperature (10 K to 300 K) over this pressure range. We observe a resistance peak (Kondo) that shifts to higher temperatures as pressure is increased from 0 to 5.4 GPa. Above 5.4 GPa, we observe no peak resistance between 10 K and 300 K. Additionally, we have performed an x-ray diffraction measurement in a diamond anvil cell at 300 K and have observed a novel structural phase transition at 15 GPa. In this talk, we will discuss the origins of the electrical resistivity of CeCoIn₅ and its relation to this structural phase transition.

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