Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Hall Effect under pressure in CeCoIn5[1] S. SINGH, MPI for Chemical Physics of Solids, 01187 Dresden, Germany, C. CAPAN, Dept. of Physics and Astronomy, LSU, Baton Rouge, Louisiana 70803, USA, S. WIRTH, M. NICKLAS, A. GLADUN, MPI for Chemical Physics of Solids, 01187 Dresden, Germany, H. LEE, Z. FISK, Dept. of Physics, UC Davis, California 95616, USA, J. F. DITUSA, Dept. of Physics and Astronomy, LSU, Baton Rouge, Louisiana 70803, USA, F. STEGLICH, MPI for Chemical Physics of Solids, 01187 Dresden, Germany — Important deviations from Landau Fermi Liquid theory are observed in many rare-earth compounds known as heavy fermion compounds. These anomalies can be ascribed to the presence of a quantum critical point (QCP) separating two different ground states in the phase diagram of these compounds. A quantum phase transition is a continuous ground state transformation driven by quantum fluctuations. In this context, CeCoIn5, a recently discovered heavy fermion superconductor, has been at the focus of intensive investigations. In this material, thermodynamic and transport properties point to a field-tuned QCP, whose origin remains elusive. At ambient pressure, this QCP is close to the superconducting upper critical field, and a Sn-doping study has failed to separate the two. We present new results on Hall Effect under pressure in a single crystal CeCoIn5 and discuss the origin of the QCP and its evolution with pressure.

[1]HL is supported by NSF DMR 0533560 and JFD by NSF DMR0406140

Steffen Wirth
MPI for Chemical Physics of Solids, 01187 Dresden, Germany

Date submitted: 30 Nov 2005 Electronic form version 1.4