Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Anisotropic transport and magnetic properties, and magnetic-field tuned ground states of $CeZn_{11}$[1] H. HODOVANETS, S.L. BUD'KO, M.G. KIM, D.K. PRATT, A. KREYSSIG, A.I. GOLDMAN, P.C. CANFIELD, Ames Laboratory and Department of Physics and Astronomy, Iowa State University, IA —
We have studied the electrical, magnetic, and thermal properties of single crystals of $CeZn_{11}$ by the means of magnetization, resistivity, heat capacity, and thermoelectric power. The compound exhibits an antiferromagnetic long-range order below 2.0 K. The zero-field temperature dependent resistivity of $CeZn_{11}$ is similar to that of other strongly correlated, Kondo lattice, compounds. T_N is suppressed with the applied magnetic field and disappears for $H \sim$47.5 kOe ($H \| [110]$) and $H \sim$ 120 kOe ($H \| [011]$). Temperature-dependent resistivity for $H \| [110]$ shows sub-linear behavior up to 2.5 K for H=45 kOe, followed by Fermi liquid behavior for limited range of temperatures ($T <$1.1 K) and fields (47.5 kOe$\leq H \leq$60 kOe). The $H - T$ phase diagrams for $H \| [110]$ and $H \| [011]$ will be discussed.

[1]Supported by the Department of Energy, Basic Energy Sciences under Contract No. DE-AC02-07CH11358.

Halyna Hodovanets
Ames Laboratory and Department of Physics and Astronomy,
Iowa State University, IA

Date submitted: 25 Nov 2012 Electronic form version 1.4