Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Electrical resistivity of $CeZn_{11}$ under pressure[1] VALENTIN TAUFOUR, Department of Physics and Astronomy, Iowa State University, Ames, Iowa 50011, U.S.A, STELLA K. KIM, HALYNA HODOVANETS, SERGEY L. BUD'KO, PAUL C. CANFIELD, Ames Laboratory, US DOE, Iowa State University, Ames, Iowa 50011, U.S.A — In most Ce-based intermetallic compounds, the magnetic exchange is assumed to be due to the RKKY interaction. This interaction competes with the Kondo interaction, leading to the suppression of the magnetic order and the possibility of field and/or pressure induced quantum criticality. In order to study this competition in $CeZn_{11}$, a compound that orders antiferromagnetically below $T_N = 2$ K, we performed electrical resistivity measurements on a single crystal of $CeZn_{11}$ under pressure up to 5 GPa in a Bridgman pressure cell modified to use a liquid pressure transmitting medium (1:1 mixture of n-pentane: iso-pentane). $T_N(p)$ slightly increases and approaches a broad maximum in the studied pressure range. At ambient pressure, the antiferromagnetic order is suppressed by a magnetic field along the [1,1,0] direction of the tetragonal crystal structure. The temperature versus magnetic field phase diagram at 5 GPa will be compared to the one at ambient pressure.

[1]This work was supported by AFOSR-MURI grant FA9550-09-1-0603 (V. Taufour and P. C. Canfield) and by US DOE under the Contract No. DE-AC02-07CH11358 (S. K. Kim, H. Hodovanets and S. L. Bud'ko.).

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Date submitted: 05 Nov 2012 Electronic form version 1.4