

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Unusual transport properties in the orbitally-ordered system $\text{Lu}_2\text{V}_2\text{O}_7$ H.D. ZHOU, B. CONNER, B.W. VOGT, C.R. WIEBE, L.L. LUMATA, J.S. BROOKS, Department of Physics and National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL 32306-3016, USA, E.S. CHOI, Y. XIN, National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL 32306, USA — DC susceptibility (χ), AC and DC resistivity (ρ), specific heat (C_p), and thermoconductivity (k) measurements on single crystalline $\text{Lu}_2\text{V}_2\text{O}_7$ with the pyrochlore structure reveal two transitions: (1) a short-range magnetic ordering transition at $T_s = 175$ K, which is identified by the slope change of $1/\chi$ and $1/k$, an anomaly in the AC resistivity, and a change in the activation energy (2) an orbital ordering transition at $T_o = 70$ K, which is confirmed by the sharp transition on χ , k , and C_p . At T_o , the resistivity shows an unusual insulator-metal transition which will be discussed in relation to the orbital ordering transition.

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Date submitted: 30 Nov 2006

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