

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

High Pressure Ultrasonic and Transport Studies of Cerium Skutterudite Thermoelectrics¹ MATTHEW JACOBSEN, WEI LIU, WEI ZHU, Mineral Physics Institute, Stony Brook University, QIANG LI, Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, BAOSHENG LI, Mineral Physics Institute, Stony Brook University — In the effort to find more efficient thermoelectric materials, some skutterudite materials based on CoSb_3 have shown that these materials have the potential of being effective at elevated temperatures. This work will present high pressure ultrasonic and transport measurements on the cerium filled versions of this parent compound, $\text{CeFe}_4\text{Sb}_{12}$ and $\text{CeFe}_3\text{CoSb}_{12}$. A previous study on these materials showed an anomaly in the equation of state for these materials originally attributed to the vitrification of a Methanol:Ethanol pressure medium. However, the studies performed as a part of this work demonstrate that, while this may be partly to blame, there is some contribution due to a real effect in this material.

¹This work was supported by DoE/NNSA (DEFG5209NA29458 to BL). Portions of this work were carried out at the National Synchrotron Light Source, which is supported by the US DoE, Divisions of Materials and Chemical Sciences under Ct. No. DE-AC02-76CH00016

Matthew Jacobsen
Mineral Physics Institute, Stony Brook University

Date submitted: 12 Dec 2011

Electronic form version 1.4