

Abstract Submitted  
for the MAR15 Meeting of  
The American Physical Society

**Shubnikov-de Haas Oscillations of filled skutterudite compounds  
CeOs<sub>4</sub>Sb<sub>12</sub> and NdOs<sub>4</sub>Sb<sub>12</sub>**<sup>1</sup> P.-C. HO, Physics/CSU-Fresno, J. SINGLETON,  
F. F. BALAKIREV, NHMFL/LANL, M. B. MAPLE, Physics/UC San Diego,  
T. YANAGISAWA, Hokkaido U, Japan — The filled skutterudite compounds  
CeOs<sub>4</sub>Sb<sub>12</sub>, PrOs<sub>4</sub>Sb<sub>12</sub>, and NdOs<sub>4</sub>Sb<sub>12</sub> are respectively a 1 K antiferromagnetic  
(AFM) Kondo insulator, a 1.85 K unconventional superconductor (SC), and a 1 K  
mean-field type ferromagnet (FM). Since SC in PrOs<sub>4</sub>Sb<sub>12</sub> exhibits non-BCS prop-  
erties, it may originate from proximity to AFM and FM quantum-critical points.  
Therefore, Fermi-surface measurements of NdOs<sub>4</sub>Sb<sub>12</sub> and CeOs<sub>4</sub>Sb<sub>12</sub> become cru-  
cial in understanding the SC pairing mechanism in PrOs<sub>4</sub>Sb<sub>12</sub>. MHz skin-depth  
measurements of single crystals of CeOs<sub>4</sub>Sb<sub>12</sub> and NdOs<sub>4</sub>Sb<sub>12</sub> were performed for  
temperatures down to 1.3 K and magnetic fields of up to 60 tesla in the Pulsed Field  
Facility at NHMFL/LANL. Proximity detection oscillator (PDO) data are taken in  
the 60 tesla generator-driven magnet ( $\sim 1$  s) using a rotational probe. Shubnikov-  
de Haas oscillations were detected for various direction of the magnetic field with  
respect to the crystalline orientations. The results indicate that NdOs<sub>4</sub>Sb<sub>12</sub> has sim-  
ilar Fermi surfaces to those of PrOs<sub>4</sub>Sb<sub>12</sub> and LaOs<sub>4</sub>Sb<sub>12</sub> but that the Fermi surface  
of CeOs<sub>4</sub>Sb<sub>12</sub> is much different from those of the other three compounds.

<sup>1</sup>Research at CSU-Fresno is supported by NSF DMR-1104544; at UCSD by NSF  
DMR-1206553 and US DOE DE-FG02-04ER46105; at at NHMFL by DOE, NSF,  
and FL; at Hokkaido U by MEXT, Jpn.

Pei-Chun Ho  
California State University, Fresno

Date submitted: 14 Nov 2014

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