

High-field magnetization and de Haas-van Alphen experiments in filled skutterudite compounds

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We have measured the high-field magnetization in a single crystal $\text{CeOs}_4\text{Sb}_{12}$. The magnetization in the field along $\langle 100 \rangle$ at 0.2 K shows no kink up to 40 T, as shown in Fig. 1. The magnetization increases monotonically with increasing the magnetic field, and the amount of the magnetization reaches $0.7 \mu_{\text{B}}/\text{Ce}$. We cannot determine the phase boundary which was reported by the specific heat measurement.[1]

Recently, we have started to measure the de Haas-van Alphen (dHvA) effect with pulse magnetic field. The dHvA oscillations of the electron and hole Fermi surfaces in Pb, of which the frequencies are 2×10^3 and 2×10^4 T, respectively, was observed at 1.3 K in the field along $\langle 100 \rangle$ from 51.5 to 52.8 T using a special winding pick up coil with the inner radius of 0.8 mm diameters and 3000 turns.

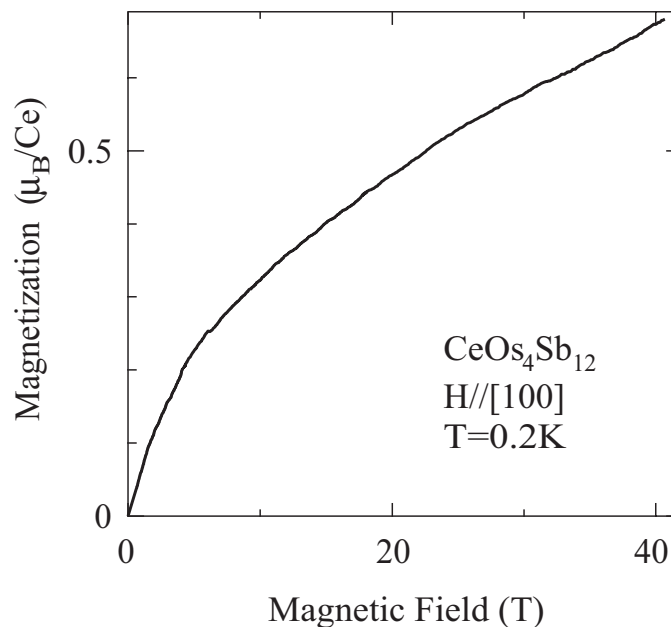


Figure 1: Magnetization of $\text{CeOs}_4\text{Sb}_{12}$ at 0.2 K.

[1] H. Sato, Y. Aoki, T. Namiki, T.D.. Matsida, K. Abe, S. Osaki, S.R. Saha and H. Sugawara, Physica B. **328** (2003) 34.