Abstract Submitted
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High field de Haas-van Alphen measurements of RT_2Zn_{20} (R=Yb and Lu,T=Fe, Co and Rh)[1] N. NI, S. JIA, Ames Lab / Iowa State University, N. HARRISON , NHMFL / Los Alamos, NM, G.D. SAMOLYUK, S.L. BUD'KO, P.C. CANFIELD, Ames Lab / Iowa State University — The de Haas–van Alphen (dHvA) effect in heavy fermion compounds $YbFe_2Zn_{20}$, $YbCo_2Zn_{20}$ and $YbRh_2Zn_{20}$ as well as the nonmagnetic compounds $LuFe_2Zn_{20}$, $LuCo_2Zn_{20}$ and $LuRh_2Zn_{20}$ have been observed in pulsed fields up to 55 T directed along [110] and in the temperature range 0.4K to 12K. The cyclotron effective masses of YbT_2Zn_{20} (T=Fe,Co and Rh) range from $1.8m_0$ to $2.8m_0$. Self-consistent tight binding linear muffin-tin orbital method in the atomic sphere approximation (TB-LMTO-ASA) has been used to construct Fermi surfaces of LuT_2Zn_{20}(T=Fe, Co and Rh). The calculated dHvA frequencies show good agreement with the experiments.

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