

Abstract Submitted
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Magnetism in RFe_2Ge_2 ($R = Y, Lu, Tb$) as seen by ^{57}Fe Mössbauer spectroscopy¹ SERGEY L. BUD'KO, Ames Lab/ISU, MARCOS A. AVILA, UFABC, XIAOMING MA, Lanzhou U. and Ames Lab/ISU, SHENG RAN, HYUNSOO KIM, PAUL C. CANFIELD, Ames Lab/ISU — Magnetic properties of RFe_2Ge_2 ($R = Y, Lu, Tb$) were studied using temperature dependent (4.6 - 300 K) Mössbauer spectroscopy and specific heat capacity. In the paramagnetic state all three compounds have similar evolution of the isomer shift and quadrupolar splitting. Magnetic phase transitions can be detected both in $LuFe_2Ge_2$ and $TbFe_2Ge_2$, with an indication of very small iron magnetic moment in the ordered state for $LuFe_2Ge_2$. The Debye temperature evaluated from the temperature-dependent isomer shift for these three compounds is significantly higher than inferred from specific heat capacity measurements, that might indicate presence of magnetic correlations. The results will be compared with the bulk measurements.

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