

# **Energiedispersive Röntgenbeugungsuntersuchungen an einigen Laves-Phasen unter hohem Druck**

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Energy-dispersive X-ray-studies of the structural properties of some Laves-Phases ( $\text{RCo}_2$  with  $\text{R}=\text{Pr}$ ,  $\text{Nd}$ ,  $\text{Sm}$ ,  $\text{Co}$ ;  $\text{RFe}_2$  with  $\text{R}=\text{Sc}$ ,  $\text{Ti}$ ,  $\text{Y}$ ,  $\text{Gd}$ ,  $\text{Tb}$ ,  $\text{Dy}$ ,  $\text{Ho}$ ;  $\text{RMn}_2$  with  $\text{R}=\text{Y}$ ,  $\text{Gd}$ ,  $\text{Tb}$ ,  $\text{Dy}$ ) were carried out under extreme hydrostatic pressure- and temperature conditions. The compounds with cobalt show very anomalous properties in the pressure range below 10 GPa, which are caused by the Co-moment. The cubic (C15) Laves-Phases undergo (with exception of  $\text{TbFe}_2$ ) a pressure-induced phase transition to the hexagonal C14-structure. It was possible by use of temperature-dependent X-ray diffraction measurements under pressure to determine the pressure dependence of the Curie-point of  $\text{YFe}_2$ . The Manganese compounds show a very high compressibility in comparison to the other compounds. This is caused by a vanishing Mn-moment in the lower pressure range.