

## Magnetism in $\text{TmCo}_2$

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Magnetic properties of  $\text{RCo}_2$  compound has been subject of studies already in the second half of last century. However, in recent years these materials are becoming interesting again because of new magnetic state - called “parimagnetism” recently discovered in  $\text{RCo}_2$  ferrimagnets ( $\text{R} \in \{\text{Gd}, \dots, \text{Tm}\}$ ) in the paramagnetic range. The parimagnetism is explained like a short-range anti-parallel coupling between magnetization of Co clusters and rare-earth magnetic moments. The importance of  $\text{TmCo}_2$  compound comes from its position at the end of the series of ferrimagnetic compounds. There exist discrepancies in the literature concerning a behavior of Co magnetism. As a results of a set of several experiments we obtain two characteristic temperatures. One at  $T_C=3,5$  K corresponding to first order magnetic phase transition and another at 35 K connected with parimagnetic configuration totally independent on external hydrostatic pressure. We will present experimental data evidencing the exceptionality of  $\text{TmCo}_2$ . It is a special case among the family of  $\text{RCo}_2$  compounds with respect to relation of the characteristic temperatures. These temperatures are moreover almost independent on the applied hydrostatic pressure.