

Abstract Submitted
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Presence of parimagnetism in HoCo₂ under hydrostatic pressure JAROSLAV VALENTA, JIRI PRCHAL, MARIE KRATOCHVILOVA, MARTIN MISEK, VLADIMIR SECHOVSKY, Charles University in Prague, DCMP, CHARLES UNIVERSITY IN PRAGUE, DCMP TEAM — HoCo₂ belongs to a group of RECo₂ compounds (RE = rare earth metal) which were previously studied mostly due to presence of two types of magnetism - the localized RE magnetic moment and the Co moment originating in the splitting of the Co 3d subbands. The corresponding RE and Co magnetic sublattices are both ferromagnetic and antiparallel to each other for RE ∈ (Gd..Tm) below T_C . In 2007 Herrero-Albillos et al. published experimental evidences of the Co moments surviving in paramagnetic state above T_C in ErCo₂. The surviving Co magnetic moments form small (ferromagnetic) clusters coupled antiparallel to the nearest RE magnetic moments in the paramagnetic state. These antiparallel short-range Co-Er moment correlations at $T > T_C$ are denoted as parimagnetism. Above a characteristic temperature T_f (observed in the AC magnetic susceptibility data as a tiny anomaly) the Co magnetic moment turns to the same direction as Er magnetic moment. The phenomenon of parimagnetism has been recently confirmed for HoCo₂. In 2011 Bonilla et al. presented results from μ SR experiment on ErCo₂. Results of the μ SR experiment show the presence of Co magnetic clusters up to temperature $T^* > T_f$. We present experimental results AC susceptibility measurements for HoCo₂ under hydrostatic pressure up to 3 GPa and μ SR data under hydrostatic pressure up to 2 GPa. The results will be discussed in terms of corresponding variations of the hierarchy inter- and intra-sublattice exchange interactions.

Jaroslav Valenta
Charles University in Prague, DCMP

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