

Pressure induced changes of magnetic phase transitions in $R\text{Co}_4\text{B}$ compounds

Arnold Z., Kamarad J., Skorokhod Y., Hong N.M., Thuy N.P., Thang C.V.

Institute of Physics AS CR, Na Slovance 2, 182 21 Prague 8, Czech Republic; Institute of Mat. Science NCST, 18 Hoang Quoc Viet Str., Cau Giay, Hanoi, Viet Nam; Fac. of Physics, University of Hanoi, Hanoi, Viet Nam; Int. Train. Inst. Mat. Sci. (ITIMS), ITIMS Building, Hanoi University of Technology, 1 Dai Co Viet Road, Hanoi, Viet Nam; Institute of Physics AS CR, Cukrovarnicka 10, 162 53 Prague 6, Czech Republic

Abstract: The magnetovolume and magnetic properties of $R\text{Co}_4\text{B}$ ($R = \text{Y}, \text{Ce}, \text{Gd}$) compounds under pressure up to 12kbar have been studied. We determined the volume dependencies of Curie temperatures, magnetization, spin reorientation transitions (for YCo_4B), first-order magnetization process (for monocrystalline GdCo_4B) and also the pressure induced changes of the volume anomaly connected with the isostructural phase transition of CeCo_4B . The results have been used to analyze the influence of rare-earth atoms on the volume dependencies of exchange interactions and magnetic anisotropy of $R\text{Co}_4\text{B}$ compounds.

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Correspondence Address: Arnold, Z.; Institute of Physics AS CR, Cukrovarnicka 10, 162 53 Prague 6, Czech Republic; email: arnold@fzu.cz

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Authors with affiliations:

- Arnold, Z., Institute of Physics AS CR, Na Slovance 2, 182 21 Prague 8, Czech Republic, Institute of Physics AS CR, Cukrovarnicka 10, 162 53 Prague 6, Czech Republic
- Kamarád, J., Institute of Physics AS CR, Na Slovance 2, 182 21 Prague 8, Czech Republic
- Skorokhod, Y., Institute of Physics AS CR, Na Slovance 2, 182 21 Prague 8, Czech Republic
- Hong, N.M., Institute of Mat. Science NCST, 18 Hoang Quoc Viet Str., Cau Giay, Hanoi, Viet Nam
- Thuy, N.P., Fac. of Physics, University of Hanoi, Hanoi, Viet Nam, Int. Train. Inst. Mat. Sci. (ITIMS), ITIMS Building, Hanoi University of Technology, 1 Dai Co Viet Road, Hanoi, Viet Nam
- Thang, C.V., Int. Train. Inst. Mat. Sci. (ITIMS), ITIMS Building, Hanoi University of Technology, 1 Dai Co Viet Road, Hanoi, Viet Nam

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