EFFECT OF PRESSURE ON MAGNETIC TRANSITIONS IN PrMnGe

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9.7 cm

The compund PrMnGe crystallizes in the tetragonal CeFeSi-type structure. Pr, Mn and Ge atoms are arranged in alternate layers stacked along the c axis in the sequence $PrGeMn_2GePrPrGeMn_2GePr$. The compound is antiferromagnetic below T_N=410K. At T_C=150K it exhibits ferromagnetic behaviour followed by a ferro-antiferromagnetic transition at temperature T_M below 80K, simultaneously with a crystallographic phase transition (tetragonal to orthorhombic symmetry). The influence of pressure on T_C and T_M have been investigated by means of ac susceptibility measurements under hydrostatic pressure. The magnetic (p,T) phase diagram is presented. T_C decrease slightly with increasing pressure. On the other hand, a positive effect of pressure is observed for T_M. At pressure above 1.5GPa ($\sim$ 1.7GPa) a multicritical point is observed. The results are discussed in comparison to those obtained for compounds RT_2X_2 in the $ThCr_2Si_2$-type structure.

13.4 cm

Subject category :

5. Phase Transitions and Critical Phenomena

Presentation mode :
poster

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