A SUSCEPTIBILITY OF COMPLEX MAGNETIC SYSTEMS.

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The paramagnetic susceptibility of magnetic systems is calculated with the help of the microscopic theory of complex magnetic systems. Fluctuations of spin and charging density which determine behavior of system both in paramagnetic and in regular phases are investigated. The model of collectivized s, d, f-electrons which cooperate among themselves, with a crystal lattice and with a field of irregular electronic spin system, is considered. In this model distribution of spins is connected to spatial distribution of charges, thus fluctuations of spin density are directly connected to fluctuations of charging density. The formula for calculation of full density of a charge in magnetic system is obtained. The integrated ratio for inverse dielectric permeability is deduced. With the help of this ratio the paramagnetic susceptibility of system is determined. It is shown that inverse static susceptibility will comply with the Curie-Weiss law and Curie temperature is defined by exchange interaction in self-congruent approach. The experimental data for complex combinations of rare-earth metal are explained with formula for susceptibility .The value of dielectric permeability is negative one in the area of critical temperature. This fact allows to value susceptibility of the system in regular phase. In the combination $Er_{1-x}Ho_xRh_4B_4$ $(x = 0{,}813)$,when $T < T_c$, $\chi_{theor} = -0{,}8$, $(\chi_{\exp} = -0{,}9)$. The new modes in spectrum of the spin waves are predicted in this model. It is shown that electron spins get out of the plane near by dislocation line, i.e. Neel`s domain wall becomes Bloh`s one. Thus, magnetic symmetry of the crystal varies near by dislocation center.

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