Physics of Metals and Metallography 2001 vol.92 N5, pages 460-469

Study of magnetic ordering in a multisublattice Ising model in terms of static fluctuation approximation

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Abstract

In terms of the static fluctuational approximation previously developed by the authors, a closed set of equations was found for finding all necessary thermodynamic characteristics (including the calculation of two-particle correlation functions) of a multisublattice Ising model with an arbitrary interaction between spins over the entire temperature range. Magnetic ordering on a simple-cubic magnetic lattice is investigated with allowance for the nearest and next-nearest neighbors. Closed equations were obtained for binary correlation functions of a given system.