METASTABLE MAGNETIC STRUCTURES IN THE BLUME-CAPEL MODEL

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9.7 cm

Recently [1] we have formulated a criterion of stability of magnetic phase formed out during the first-order phase transition from non-magnetic phase at T=0. This criterion was applied [2] to the antiferromagnetic structure of the C15 atomic lattice. In the present paper results of new calculations for a spontaneously formed magnetic phase and its magnetic energy are given. Dynamic phase diagram is constructed for the phase transition. The results are discussed in the context of the pressure-driven phase transition observed experimentally in YMn_2 [3].

[1] M. Antoniuk and K. Kułakowski, Physica A **242** (1997) 219.
[2] K. Kułakowski, M. Antoniuk, J. Deskur and P. Gawronski, J. Magn. Magn. Mat. (1999), in print.
[3] K. Kułakowski and A. del Moral, Phys. Rev. B **56** (1997) 8928.

13.4 cm

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