Abstract for GR-TR Conference on Statistical Mechanics and Dynamical Systems

Topic: Other Preference: Poster

Effects of the randomly distributed magnetic field on the phase diagrams of the Ising Nanowire

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The effect of the random magnetic field distribution on the phase diagrams and ground state magnetizations of the Ising nanowire is investigated with effective field theory with correlations. Trimodal distribution chosen as a random magnetic field distribution. The variation of the phase diagrams with that distribution parameters obtained and some interesting results found such as reentrant behavior and first order transitions. Also for the trimodal distribution, ground state magnetizations for different distribution parameters determined which can be regarded as separate partially ordered phases of the system.

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[1] T. Kaneyoshi, *Phys. Status Solidi B* **248**, 250 (2011).

[2] T. Kaneyoshi, *J. Magn. Magn. Mater.* **323**, 1145 (2011).

[3] Ü. Akıncı, *J. Magn. Magn. Mater.* in press, doi: 10.1016/j.jmmm.2012.07.002, (2012).