

The Effects of the Layer-Dependent Interaction Parameters on the Phase Diagrams and Polarizations of the Ferroelectric Thin Film

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While the exchange interaction and the transverse field parameters are changed with the layers of the ferroelectric thin film, the properties of phase transition of the transverse field Ising model have been studied within the framework of the mean field approximation. The phase diagrams and polarizations of the ferroelectric thin film have been calculated numerically in the different situations of the interaction parameters changed with the layers. The results show that various layer-dependent parameters changed gradually layer by layer have sensitive effects on the phase diagrams and the polarizations of the n -layer ferroelectric thin film.

Key words: Ferroelectrics; Layer-dependent Parameters; Phase Diagrams.

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