# ROLE OF FLUCTUATIONS IN THE COHERENT DISPLACEMENTS OF ATOMIC EQUILIBRIUM POSITIONS AT SECOND-ORDER PHASE TRANSITIONS

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S u m m a r y

Second-order phase transitions in ferroics of the ferroelastic type have been studied theoretically. The temperature-induced phase transition in crystals with a wide forbidden gap caused by the interaction between electrons and a branch of acoustic vibrations in the crystal lattice is considered. The vertex part of this interaction with transverse lattice vibrations is calculated. The characteristic features of the thermodynamic potential at the transition point and the temperature dependence of the acoustic phonon dispersion at the transition over quasiequilibrium states are discussed. It is shown that the stabilization of structure fluctuations by the electron subsystem in the high-symmetry phase, and a reduction of soft mode frequencies makes those fluctuations metastable.