Abstract

On the Crystal Optics of Ferroelectric-Semiconductors

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On the crystal optics of ferroelectric-semiconductors in soliton regime incommensurate phase
The characteristics of linear and nonlinear crystal optics in soliton regime incommensurate phase of crystals are investigated. The space dependence of the dielectric permeability and non-linear susceptibility tensors are derived. The character of temperature evolution of soliton lattice is determined. The characteristic matrixes for soliton regime incommensurate phase are determined by solving the linear and nonlinear Maxwell equations. The temperature dependence transmission coefficient in wives as oscillation function is determined. For the nonlinear properties it is shown that there is a generation of the second harmonic due to low local symmetry. The temperature dependence the intensity of second harmonic is established. The comparison of the received results with experimental data is discussed.