

Inhomogeneous Plane Waves in Cubic Crystals subject to a Bias

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Abstract

In the present paper we investigate the condition of inhomogeneous plane waves propagation in cubic crystals subject to initial deformations and electric fields. The author obtains here the components of the electroacoustic tensor and the velocities of propagation as closed-form solutions. We show the influence of electrostrictive and piezoelectric effects on wave propagation in such media. We analyze the influence of the initial fields on the waves polarization in two main cases: (i) propagation in isotropic directional bivectors; (ii) propagation in case of polar anisotropic directional bivectors.

Keywords—*Inhomogeneous plane waves, cubic crystals, initial fields, isotropic/anisotropic directional bivectors.*

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