Optical metrics and birefringence of anisotropic media

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Abstract

The material tensor of linear response in electrodynamics is constructed out of products of two symmetric second rank tensor fields which in the approximation of geometrical optics and for uniaxial symmetry reduce to "optical" metrics, describing the phenomenon of birefringence. This representation is interpreted in the context of an underlying internal geometrical structure according to which the symmetric tensor fields are vectorial elements of an associated two-dimensional space. © Springer-Verlag 2005.

Keywords