Abstracts

Geometric Phases in Magnetooptic Channel Waveguide Devices

M.C. Nistal, J. Linares and D. Baldomir. "Geometric Phases in Magnetooptic Channel Waveguide Devices." 1995 Transactions on Microwave Theory and Techniques 43.3 (Mar. 1995 [T-MTT]): 627-631.

Geometric phases, generated by a coupling process between TE and TM polarizations through anisotropic chiral media--magnetooptic channel waveguides--are determined. In fact, many of the conventional phase and frequency shifters are based on this geometrical effect, nevertheless, the physical origin of these phase factors (spatial and temporal ones) has never been explained. In this work a physical interpretation, based on the topological phases theory, is given. Likewise, an integrated interferometer is proposed for both generating and checking these phases by changing the characteristics of the channel waveguides. The relationship between geometric factors and phase and frequency shifters is shown along the work.

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