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Simulation of Propagation of Cos-Gaussian Beam in Strongly Nonlocal Nonlinear Media Using Paraxial Group Transformation

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Abstract : In this paper, propagation of cos-Gaussian beam in strongly nonlocal nonlinear media has been stimulated by using paraxial group transformation. At first, cos-Gaussian beam, nonlocal nonlinear media, critical power, transfer matrix, and paraxial group transformation are introduced. Then, the propagation of the cos-Gaussian beam in strongly nonlocal nonlinear media is simulated. Results show that beam propagation has periodic structure during self-focusing effect in this case. However, this simple method can be used for investigation of propagation of kinds of beams in ABCD optical media.

Keywords : paraxial group transformation, nonlocal nonlinear media, cos-Gaussian beam, ABCD law
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