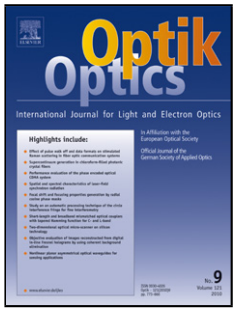

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CONSERVATION LAWS FOR CUBIC-QUARTIC OPTICAL SOLITONS IN KERR AND POWER LAW MEDIA

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Abstract

This paper obtains conservation laws for the cubic-quartic nonlinear Schrödinger's equation that is proposed to be an alternative model for soliton propagation, when the group velocity dispersion is negligibly small. Two laws of nonlinearity are considered, namely Kerr law and power law. The multiplier method obtains the conserved densities for the model, with these two laws.

Key Words: cubic-quartic solitons; conservation laws; Kerr law; power law.