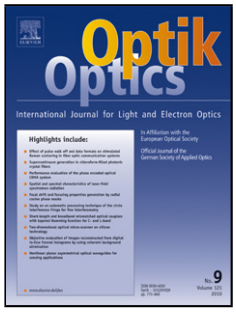

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CUBIC-QUARTIC OPTICAL SOLITONS IN KERR AND POWER LAW MEDIA

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Abstract

In this paper, we present the exact bright and singular optical solitons of the nonlinear Schrödinger equation with third and fourth order dispersion terms. The method of undetermined cefficients is applied to obtain the reported solutions. The cases of Kerr law and power law nonlinearity are taken into account. We also find the conditions concerning the optical material parameters for the existence of these soliton structures. The results are useful in describing the propagation of optical solitons in highly dispersive media with Kerr and power law nonlinearity.

Key Words: solitons; higher-order dispersion; Kerr law; power law.