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Optical solitons in a power law media with fourth order dispersion. (English) Zbl 1221.78034
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Summary: A closed form optical soliton solution is obtained for the nonlinear Schrödinger's equation with fourth order dispersion in a power law media. The solitary wave ansatz is used to carry out the integration of this equation. Finally, a numerical simulation is given for the closed form soliton solution.

MSC:

[78A60](#) Lasers, masers, optical bistability, nonlinear optics

[35Q51](#) Soliton equations

[35Q53](#) KdV equations (Korteweg-de Vries equations)

[37K10](#) Completely integrable infinite-dimensional Hamiltonian and Lagrangian systems, integration methods, integrability tests, integrable hierarchies (KdV, KP, Toda, etc.)

Cited in **2** Documents

Keywords:

optical solitons; power law nonlinearity; fourth order dispersion; integrability

Full Text: [DOI](#)

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