Chirped Wave Solutions of a Generalized (3+1)-Dimensional Nonlinear Schrödinger Equation

Xian-Jing Lai and Xiao-Ou Cai

Department of Basic Science, Zhejiang Shuren University, Hangzhou, 310015, Zhejiang, China

Reprint requests to X.-J. L.; E-mail: laixianjing@163.com

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The exact chirped soliton-like and quasi-periodic wave solutions of the (3+1)-dimensional generalized nonlinear Schrödinger equation including linear and nonlinear gain (loss) with variable coefficients are obtained detailedly in this paper. The form and the behaviour of solutions are strongly affected by the modulation of both the dispersion coefficient and the nonlinearity coefficient. In addition, self-similar soliton-like waves precisely piloted from our obtained solutions by tailoring the dispersion and linear gain (loss).

Key words: (3+1)-D NLSE; Chirp; Ansatz Method; Soliton-Like Wave Solution; Quasi-Periodic Wave Solution.

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