

Nonlinear dynamics of solitary wave structures in complex continuous media

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Abstract

© 2019 IEEE. The results of simulation of evolution and interaction of the multidimensional soliton structures being described by the equations of nonlinear BK system, namely: generalized KP equation, 3-DNLS and 3-GNLS equations are presented. It is shown that the collision interaction can be elastic and non-elastic with the N-soliton structures' formation. The results are in conformity with the stability conditions obtained earlier analytically for the equations of the BK system.

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Keywords

BK system, DNLS equation, Generalized KP equation, Nonlinear Schrödinger equation, Numerical simulation, Solitons

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