

The general bilinear techniques for studying the propagation of mixed-type periodic and lump-type solutions in a homogenous-dispersive medium

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Abstract

This paper aims to construct new mixed-type periodic and lump-type solutions via the dependent variable transformation and the Hirota's bilinear form (general bilinear techniques). This study will be investigated by considering the (3+1)-dimensional generalized B-type Kadomtsev-Petviashvili equation which describes the weakly dispersive waves in a homogenous medium in fluid dynamics. The obtained solutions contain abundant physical structure. Consequently, the dynamical behaviors of these solutions are graphically discussed for different choices of the free parameters through 3D- and contour plots.

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