

Bright and dark soliton solutions for the variable coefficient generalizations of the KP equation

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Abstract

In this paper, by using a solitary wave ansatz in the form of sech^p and \tanh^p functions, we obtain the exact bright (non-topological) and dark (topological) soliton solutions for the variable coefficient generalizations of the KP (GVCKP) equation, respectively. Note that, it is always useful and desirable to construct exact analytical solutions especially soliton-type envelope for the understanding of most nonlinear physical phenomena. The physical parameters in the soliton solutions are obtained as functions of the dependent coefficients.

Keywords: Solitons, bright and dark soliton, variable-coefficient generalizations of the KP (GVCKP) equation

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