

Analysis of a Generalized Sharma-Tasso-Olver Equation with Variable Coefficients

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Abstract : Considering the inhomogeneities of media, the variable-coefficient Sharma-Tasso-Olver (STO) equation is hereby investigated with the aid of symbolic computation. A newly developed simplified bilinear method is described for the solution of considered equation. Without any constraints on the coefficient functions, multiple kink solutions are obtained. Parametric analysis is carried out in order to analyze the effects of the coefficient functions on the stabilities and propagation characteristics of the solitonic waves.

Keywords : Hirota bilinear method, multiple kink solution, Sharma-Tasso-Olver equation, inhomogeneity of media

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