

Conservation laws and exact solutions for the generalized Ostrovsky equation using symmetry analysis

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Abstract

In this work we consider a generalized Ostrovsky equation depending on two arbitrary functions and we make an in-depth study of this equation. We obtain the Lie symmetries which are admitted by this equation and some exact solutions as a periodic or solitary waves, obtained through ordinary and partial differential equations. Also, by means of the concept of multiplier, we obtain a wide range of conservation laws which preserve properties of the generalized Ostrovsky equation.

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