Abstract

This paper carries out the integration of a few nonlinear wave equations to obtain topological as well as non-topological soliton solutions. The mathematical techniques used to obtain the soliton solutions are He's variational iteration method, the tanh method and the ansatz method. The nonlinear wave equations that are studied are coupled mKdV equations, Drinfeld–Sokolov equation and its generalized version. Finally, some numerical simulations are given to support the analytical solutions.

Keywords: Solitons; Exact solutions; Variational iteration method; Tanh method