The Variational Iteration Method and the Variational Homotopy Perturbation Method for Solving the KdV-Burgers Equation and the Sharma-Tasso-Olver Equation

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In this article, two powerful analytical methods called the variational iteration method (VIM) and the variational homotopy perturbation method (VHPM) are introduced to obtain the exact and the numerical solutions of the (2+1)-dimensional Korteweg-de Vries-Burgers (KdVB) equation and the (1+1)-dimensional Sharma-Tasso-Olver equation. The main objective of the present article is to propose alternative methods of solutions, which avoid linearization and physical unrealistic assumptions. The results show that these methods are very efficient, convenient and can be applied to a large class of nonlinear problems.