A New Generalized Riccati Equation Rational Expansion Method to Generalized Burgers-Fisher Equation with Nonlinear Terms of Any Order

ZHANG Xiao-Ling,[1] WANG Jing,[1,2] and ZHANG Hong-Qing[1]

[1] Department of Applied Mathematics, Dalian University of Technology, Dalian 116024, China
[2] Department of Mathematics and Informatics, Henan Polytechnic University, Jiaozuo 454000, China

Abstract: In this paper, based on a new more general ansatz, a new algebraic method, named generalized Riccati equation rational expansion method, is devised for constructing travelling wave solutions for nonlinear evolution equations with nonlinear terms of any order. Compared with most existing tanh methods for finding travelling wave solutions, the proposed method not only recovers the results by most known algebraic methods, but also provides new and more general solutions. We choose the generalized Burgers-Fisher equation with nonlinear terms of any order to illustrate our method. As a result, we obtain several new kinds of exact solutions for the equation. This approach can also be applied to other nonlinear evolution equations with nonlinear terms of any order.

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