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A New Generalization of Extended Tanh-Function Method for Solving Nonlinear Evolution Equations

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Abstract: Making use of a new generalized ansätze and a proper transformation, we generalized the extended tanh-function method. Applying the generalized method with the aid of Maple, we consider some nonlinear evolution equations. As a result, we can successfully recover the previously known solitary wave solutions that had been found by the extended tanh-function method and other more sophisticated methods. More importantly, for some equations, we also obtain other new and more general solutions at the same time. The results include kink-profile solitary-wave solutions, bell-profile solitary-wave solutions, periodic wave solutions, rational solutions, singular solutions and new formal solutions.

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Key words: nonlinear evolution equations, exact solutions, symbolic computation, Riccati equation

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