

Solutions to Generalized mKdV Equation

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Abstract: A transformation is introduced for generalized mKdV (GmKdV for short) equation and Jacobi elliptic function expansion method is applied to solve it. It is shown that GmKdV equation with a real number parameter can be solved directly by using Jacobi elliptic function expansion method when this transformation is introduced, and periodic solution and solitary wave solution are obtained. Then the generalized solution to GmKdV equation deduces to some special solutions to some well-known nonlinear equations, such as KdV equation, mKdV equation, when the real parameter is set specific values.

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Key words: Jacobi elliptic function, GmKdV equation, periodic wave solution, solitary wave solution

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