

## Elliptic Equation and Its Direct Applications to Nonlinear Wave Equations

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Abstract: Elliptic equation is taken as an ansatz and applied to solve nonlinear wave equations directly. More kinds of solutions are directly obtained, such as rational solutions, solitary wave solutions, periodic wave solutions and so on. It is shown that this method is more powerful in giving more kinds of solutions, so it can be taken as a generalized method.

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Key words: elliptic equation, Jacobi elliptic function, nonlinear equation, periodic wave solution

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