

A Generalized Variable-Coefficient Algebraic Method Exactly Solving (3+1)-Dimensional Kadomtsev-Petviashvili Equation

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Abstract: A generalized variable-coefficient algebraic method is applied to construct several new families of exact solutions of physical interest for (3+1)-dimensional Kadomtsev-Petviashvili (KP) equation. Among them, the Jacobi elliptic periodic solutions exactly degenerate to the soliton solutions at a certain limit condition. Compared with the existing tanh method, the extended tanh method, the Jacobi elliptic function method, and the algebraic method, the proposed method gives new and more general solutions.

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Key words: generalized variable-coefficient algebraic method, (3+1)-dimensional KP equation, exact explicit solutions

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