Uniformly Constructing a Series of Nonlinear Wave and Coefficient Functions' Soliton Solutions and Double Periodic Solutions for the (2 + 1)-Dimensional Broer-Kaup-Kupershmidt Equation

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By using a new more general ansatz with the aid of symbolic computation, we extended the unified algebraic method proposed by Fan [Computer Phys. Commun. **153**, 17 (2003)] and the improved extended tanh method by Yomba [Chaos, Solitons and Fractals **20**, 1135 (2004)] to uniformly construct a series of soliton-like solutions and double-like periodic solutions for nonlinear partial differential equations. The efficiency of the method is demonstrated on the $(2+1)$-dimensional Broer-Kaup-Kupershmidt equation.

Key words: Generalized Algebraic Method; Symbolic Computation; Solitary Wave Solution; Weierstrass and Jacobi Elliptic Functions; Periodic Solution.