

Further Extended Jacobi Elliptic Function Rational Expansion Method and New Families of Jacobi Elliptic Function Solutions to (2+1)-Dimensional Dispersive Long Wave Equation

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Abstract: In this paper, a further extended Jacobi elliptic function rational expansion method is proposed for constructing new forms of exact solutions to nonlinear partial differential equations by making a more general transformation. For illustration, we apply the method to (2+1)-dimensional dispersive long wave equation and successfully obtain many new doubly periodic solutions. When the modulus  $m \rightarrow 1$ , these solutions degenerate as soliton solutions. The method can be also applied to other nonlinear partial differential equations.

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Key words: doubly periodic solution, soliton solution, (2+1)-dimensional dispersive long wave equation

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