Elliptic Function Solutions of (2+1)-dimensional Long Wave – Short Wave Resonance Interaction Equation via a sinh-Gordon Expansion Method

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With the aid of symbolic computation, the sinh-Gordon equation expansion method is extended to seek Jacobi elliptic function solutions of (2+1)-dimensional long wave-short wave resonance interaction equation, which describe the long and short waves propagation at an angle to each other in a two-layer fluid. As a result, new Jacobi elliptic function solutions are obtained. When the modulus m of Jacobi elliptic functions approaches 1, we also deduce the singular oliton solutions; while when the modulus $m \to 0$, we get the trigonometric function solutions. — PACS: 02.30.Jr, 03.40.Kf

Key words: Nonlinear Wave Equation; sinh-Gordon Equation; Jacobi Elliptic Function; Soliton Solution.