

Symbolic Computation and Non-travelling Wave Solutions of the (2+1)-Dimensional Korteweg de Vries Equation

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In this paper, with the aid of symbolic computation we improve the extended F-expansion method described in Chaos, Solitons and Fractals **22**, 111 (2004) to solve the $(2 + 1)$ -dimensional Korteweg de Vries equation. Using this method, we derive many exact non-travelling wave solutions. These are more general than the previous solutions derived with the extended F-expansion method. They include the Jacobi elliptic function, soliton-like trigonometric function solutions, and so on. Our method can be applied to other nonlinear evolution equations.

Key words: Non-travelling Wave Solution; $(2 + 1)$ -Dimensional Korteweg de Vries Equation; Jacobi Elliptic Function; Soliton-like.