New Exact Travelling Wave Solutions to Kundu Equation

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Abstract: Based on a first-order nonlinear ordinary differential equation with six-degree nonlinear term, we first present a new auxiliary equation expansion method and its algorithm. Being concise and straightforward, the method is applied to the Kundu equation. As a result, some new exact travelling wave solutions are obtained, which include bright and dark solitary wave solutions, triangular periodic wave solutions, and singular solutions. This algorithm can also be applied to other nonlinear evolution equations in mathematical physics.

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