Separation Transformation and New Exact Solutions for the (1+*N*)-Dimensional Triple Sine-Gordon Equation

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The separation transformation method is extended to the (1+N)-dimensional triple Sine-Gordon equation and a special type of implicitly exact solution for this equation is obtained. The exact solution contains an arbitrary function which may lead to abundant localized structures of the high-dimensional nonlinear wave equations. The separation transformation method in this paper can also be applied to other kinds of high-dimensional nonlinear wave equations.

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