

An Algebraic Method for Constructing Exact Solutions to Difference-Differential Equations

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Abstract: In this paper, we present a method to solve difference differential equation(s). As an example, we apply this method to discrete KdV equation and Ablowitz-Ladik lattice equation. As a result, many exact solutions are obtained with the help of Maple including soliton solutions presented by hyperbolic functions \sinh and \cosh , periodic solutions presented by \sin and \cos and rational solutions. This method can also be used to other nonlinear difference-differential equation(s).

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Key words: difference differential equation, soliton solutions, exact solutions, discrete KdV equation, Ablowitz-Ladik lattice equations

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