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Applications of Extended Hyperbolic Function Method for Quintic Discrete Nonlinear Schrödinger Equation

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Abstract: By using the extended hyperbolic function method, we have studied a quintic discrete nonlinear Schrödinger equation and obtained new exact localized solutions, including the discrete bright soliton solution, dark soliton solution, bright and dark soliton solution, alternating phase bright soliton solution, alternating phase dark soliton solution, and alternating phase bright and dark soliton solution, if a special relation is bound on the coefficients of the equation.

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