

## Extended Hyperbola Function Method and Its Application to Nonlinear Equations

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Abstract: An extended hyperbola function method is proposed to construct exact solitary wave solutions to nonlinear wave equation based upon a coupled Riccati equation. It is shown that more new solitary wave solutions can be found by this new method, which include kink-shaped soliton solutions, bell-shaped soliton solutions and new solitary wave. The new method can be applied to other nonlinear equations in mathematical physics.

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Key words: nonlinear wave equations, exact solitary wave solution, hyperbola function method

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