

# New exact solution and simulation for the coupled nonlinear Schrödinger equations with variable coefficients

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## Abstract

In this paper, we study the coupled nonlinear Schrödinger equation with variable coefficients (VCNLS) by means of modified Sine-Gordon equation method, the subsistence of some novel bright-dark solitons and dark-dark solitons are obtained. Moreover, some figures are simulated by computer to show the solutions are soliton solutions and how the evolution of soliton is determined by different values of variable group velocity dispersion terms, which can be used to simulate various phenomena.

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