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Collocation method for numerical solution of coupled nonlinear Schrödinger equation

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Abstract

The coupled nonlinear Schrödinger equation models several interesting physical phenomena presents a model equation for optical fiber with linear birefringence. In this paper we use collocation method to solve this equation, we test this method for stability and accuracy. Numerical tests using single soliton and interaction of three solitons are used to test the resulting scheme. © 2010 American Institute of Physics.