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**Multi-symplectic methods for the coupled 1D nonlinear Schrödinger system.** (English)

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Comput. Phys. Commun. 155, No. 3, 221-235 (2003).

Summary: The multi-symplectic formulation of the coupled 1D nonlinear Schrödinger system (CNLS) is considered. For the multi-symplectic formulation, a new six point scheme, which is equivalent to the multi-symplectic Preissman integrator, is derived. We also present numerical experiments, which show that the multi-symplectic scheme has excellent long-time numerical behaviour and energy conservation property.

**MSC:**

**65P10** Numerical methods for Hamiltonian systems including symplectic integrators

**37M15** Discretization methods and integrators (symplectic, variational, geometric, etc.) for dynamical systems

Cited in **1** Review  
Cited in **46** Documents

**Full Text:** [DOI](#)

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