



Nonlinear Sciences > Exactly Solvable and Integrable Systems

Deterministic Vector Freak Waves

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We construct and discuss a semi-rational, multi-parametric vector solution of coupled nonlinear Schrödinger equations (Manakov system). This family of solutions includes known vector Peregrine solutions, bright-dark-rogue solutions, and novel vector unusual freak waves. The vector freak (or rogue) waves could be of great interest in a variety of complex systems, from optics to Bose-Einstein condensates and finance.

Subjects: **Exactly Solvable and Integrable Systems (nlin.SI)**; Pattern Formation and Solitons (nlin.PS); Optics (physics.optics)

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