

Nonautonomous rogue waves and interactions in some nonlinear physical models

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Abstract:

The rogue wave phenomenon appears in many fields of nonlinear science such as ocean, nonlinear optics, Bose-Einstein condensates, and even finance (see, e.g., [1-9]). In this talk, we study self-similar rogue waves and interactions of some nonlinear physical models with varying parameters including nonlinear Schrödinger equation with varying coefficients [10], the three-dimensional Gross-Pitaevskii equation with varying coefficients [11], and the generalized discrete Ablowitz-Ladik model with varying potentials [12]. Some special functions are chosen to illustrate the propagations of these obtained rogue waves.

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