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Data analysis of rogue waves in the presence of wind and damping

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Recently we proposed two dynamical selection criteria for rogue waves
in nonlinear Schr\"odinger (NLS) models: stability under perturbation
of initial data and persistence under perturbation of the NLS model.
In this paper we investigate the effects of wind and damping on the development of
rogue waves using a new higher order
nonlinear Schr\"odinger model with nonlinear damping and linear
forcing.
We interpret the damped, wind
driven rogue waves
in light of the stability and persistence analysis and use
the inverse spectral theory of the NLS equation to investigate
their statistical properties and their likelihood.
The likelihood of rogue waves is examined
in relation to the changes in both the nonlinear and the Fourier spectrum.