

# Statistics of Rogue Waves with Forcing and Dissipation

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## Abstract

The rogue waves are unexpected waves with the huge amplitude (up to 30 meters). This event is momentary and, therefore, it is difficult to locate this event. However, for latter 30 years, we have received established facts on these waves. Unfortunately, meetings with these waves lead to serious human sacrifices and material losses.

In our talk nonlinear dynamics of water waves is considered. We use the exact numerical simulation of nonlinear water waves on the basis of full nonlinear differential equations. In our model we use a forcing and dissipation. Thus, we have steady model of nonlinear dynamics of waves on water.

In our model there are rogue waves with certain frequency. As a result of a considerable quantity of experiments we have constructed estimation for probability of rogue waves.

## References

[1] V.E. Zakharov, A.I. Dyachenko, R.V. Shamin. How probability for freak wave formation can be found // THE EUROPEAN PHYSICAL JOURNAL - SPECIAL TOPICS Volume 185, Number 1, 113-124, DOI: 10.1140/epjst/e2010-01242-y