Stochastic analysis and modeling of abnormally large waves

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In this work stochastics of amplitude characteristics of waves during the freak waves formation was estimated. Also amplitude characteristics of freak wave was modeling with the help of the developed Markov model on the basis of in-situ and numerical experiments. Simulation using the Markov model showed a great similarity of results of in-situ wave measurements[1], results of directly calculating the Euler equations[2] and stochastic modeling data.

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2. R.V. Shamin, V.E. Zakharov, A.I. Dyachenko. 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
3.E. N. Pelinovsky, K. I. Kuznetsov, J. Touboul, A. A. Kurkin Bottom pressure caused by passage of a solitary wave within the strongly nonlinear Green-Naghdi model //Doklady Physics, April 2015, Volume 60, Issue 4, pp 171-174. DOI: 10.1134/S1028335815040035