

Abstract Submitted
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Statistics of unidirectional random breaking water-waves LEV SHEMER, Tel-Aviv University, ANNA SERGEEVA, Institute of Applied Physics, RAS — Quasi-random wave groups were studied experimentally in a 300 m long Large Wave Chanel in Hannover. Multiple realizations of several spectral shapes each having random phases of individual harmonics were excited by a computer-controlled wavemaker. Wave field evolution along the tank was recorded by 28 wave gauges and the variation of waves' statistical parameters with the distance from the wavemaker was analyzed. An attempt was made to identify individual breaking events based on the spectrum variation between consecutive wave gauges. It was concluded that energy decay in the high frequency part of the spectrum can serve as a reliable criterion for breaking localization in each realization. The data processing based on the adopted criterion resulted in constructing separate ensembles of events with and without breaking. Statistical processing of those ensembles enabled to assess the effect of breaking on such wave field characteristics as probability of appearance of extremely steep (rogue, or freak) waves, as well on skewness and kurtosis.

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