



Abstract View

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Detection of Breaking Events in a Wind-Generated Wave Field

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ABSTRACT

Measurements were made of the surface elevation of a fetch-limited wave field (fetch 7 km, wind speed about 6 m s^{-1}). Good high-frequency response was attained by the use of a very thin, bare wire probe of diameter 0.13 mm. Breaking waves were detected based on the energy in the 18–32 Hz frequency band. An appropriate threshold was found by a trial and error method. General agreement was found with visual observations.

The temporal intermittency of wave breaking (fraction of time spent in breaking regions) was found to be 1.2%; however, the fraction of high-frequency (5–50 Hz) energy in those region was 12%. An argument is presented to show that the spatial intermittency and the spatial energy fraction should have the same values.

The mean crest height of the breaking waves was found to be much lower than expected from theoretical considerations (by a factor of 4).

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