Abstract Submitted
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Kinematic criterion for breaking of shoaling waves[1] DAN LIBERZON, URI ITAY, Technion - Israel Institute of Technology — Validity of a kinematic criterion for breaking of shoaling waves was examined experimentally. Results obtained by simultaneous measurements of water surface velocity by PTV and of the propagation velocity of a steep crest up to the point of breaking inception during shoaling will be reported. The experiments performed in a large wave tank examining breaking behavior of gentle spillers during shoaling on three different slopes suggest a validity of the recently proposed kinematic criterion. The breaking inception was found to occur when the horizontal velocity of the water surface on the steep (local steepness of 0.41-0.6) crest reaches a threshold value of 0.85-0.95 of that of the crest propagation. The exact moment and position of breaking inception detected using a Phase Time Method (PTM), characterizing a unique shape of the local frequency fluctuations at the inception. Future implementation of the PTM method for detection of breaking events in irregular wave fields will be discussed.

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