

Abstract Submitted  
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**The Effect of Wind on Wave Shape: Shallow Water** THOMAS ZDYRSKI, FALK FEDDERSEN, Univ of California - San Diego — Wave shape (e.g., wave skewness and asymmetry) impacts sediment transport, beach morphology, and ship safety. Previous work by the authors showed that wind (via changes in surface pressure) affects wave shape in intermediate and deep water. This effect was most pronounced as the depth ( $kh$ ) decreased. Here, this work investigates the interaction of wind and wave shape in shallow water. A multiple-scales analysis is applied to waves propagating over a shallow ( $kh \ll 1$ ), flat bottom with a variety of wind-induced surface-pressure profiles, such as Jeffreys-type and generalized Miles-type. The shallow depth enhances the influence of wind on wave shape and intensifies the waves' second-harmonic modes. The results are compared to previous wave-tank experimental data and numerical simulation results.

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