

Abstract

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A novel technique in analyzing non-linear wave-wave interaction

During wave growth non-linear wave–wave interactions cause transfer of some wave energy from lower to higher wave periods as the spectrum grows. Wavelet bicoherence, which is a new technique in the analysis of wind–wave and wave–wave interactions, is used to analyze non-linear wave–wave interactions. A ed record of wind wave that contains the maximum wave height observed during 6 h of wave generation is divided into five segments and wavelet bicoherence is computed for the whole record, and for all divided segments. The study shows that the non-linear wave–wave interaction occurs at different bicoherence levels and these levels are different from one segment to another due to the non-stationarity feature of the examined data set.