

# Seismic monitoring links between microseisms and waves during typhoons

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## Abstract

Microseisms in the deep seafloor are linked to activities of ocean gravity waves. It provides a good chance to examine source characteristics and possible links to typhoons. By comparing between background and typhoon induced microseisms at ocean broadband seismometers (OBS) and on-land seismic stations, the local topographic effect has been separated from the seismic spectra and the power between 0.1 and 0.2 Hz significantly coincides with three typhoon events. The simple spectral method highlights the source associated with the typhoon intensity and could also be the potential tool of tracking typhoon motions in real time. The ground motions on the seafloor correlate with locally increased (ocean) wave heights and wave periods, suggesting that the ground motions are mostly induced by in situ or nearby pressure fields. Part of the ground motions were excited near the coast, possibly in continental shelves where the water is shallow, and that energy was attenuated after propagating inland. When a typhoon turns and changes wave-wave interaction near the source region, a new set of en echelon patterns develops which can be observed by OBSs and land stations.

## Reference:

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