



## Peculiarities of sea waves near the southeastern coast of Sakhalin Island during cyclones moving above the observation area

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### Abstract

The processing of long time series of sea-level fluctuations revealed rather strange aspect (from first look): waves amplitudes raising does not always correlate with the cyclone front arrival. Therefore, the paper analyzes the data of field observations of the waves in the coastal zone of the South-Eastern coast of Sakhalin Island during the movement of cyclones and cold fronts. It was found that remote cyclones in the Pacific Ocean can cause of swell several days ahead of the arrival of cyclone in the observation points. However, such cyclones excite strong storm waves not every time when they become to the area of Okhotsk Sea. This is apparently caused by the blocking action of high atmospheric pressure zone (the anticyclone) located over the Pacific Ocean. It has been shown that the vast cold fronts when moving over the Sea of Okhotsk were able to cause strong winds, which in turn excite waves in the coastal zone up to 1 m height. The combined influence of the vast cold front and the cyclone could lead to a significant wind waves in the Mordvinova Bay, of height up to two meters. The establishing these patterns of the sea waves will ensure the safety of navigation of the boats.

### Keywords

wind waves, swell, cyclone, cold front

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