

Delayed phase of the tsunami of earthquakes occurred in the eastern Hokkaido Sea Region observed at stations on the Sanriku Coasts

Yuichi Namegaya[1]; Yoshinobu Tsuji[1]

[1] ERI, Univ. Tokyo

Plate boundary typed major earthquakes frequently occurred in the south east sea region of Hokkaido, and accompanied with these earthquakes tsunamis were generated and hit the coasts of Hokkaido and Tohoku District.

On the recorded tidal curve, we sometimes find such a record that after finishing the initial wave, a smaller wave train is continued and again several peaks appear about 2.5 hours after the initial waves. In some cases the amplitude of the delayed phase is larger than that of the initial waves.

In the present study we research numerically the mechanism of the reason why such a delayed phase waves appear.

We make a numerical calculation of the tsunami propagation for the 1973 Nemuro Hanto-Toho-Okai Earthquake, with assuming the long wave approximation. We found out that the delayed phase waves were reproduced also by the numerical calculation. The animation of the tsunami propagation shows that the delayed phase was suggested to be formed by the reflected wave components on the coast lines of the south of Hokkaido and of Shimokita peninsula.

Next we made additional numerical simulation with assuming the following two conditions:

Case 1. Hokkaido coast was removed

Case 2. Shimokita peninsula was removed.

It was clarified that the delayed phase waves were formed partially by the wave component which came directly to Shimokita peninsula and was transferred into the edge wave, and partially by the wave component which was once reflected on the coast of Hokkaido, and reached Shimokita peninsula.