

日本海東縁部での津波数値計算

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Abstract

1993 Hokkaido-nansei-oki earthquake occurred only 10 years after 1983 Nihonkai-chubu earthquake, and both earthquakes induced serious tsunami disaster. After these events, a new idea has been born that there exists a plate boundary in the eastern edge of the Japan sea, and a possibility is pointed out that earthquakes with the same order of magnitude may occur in some areas on the plate boundary where no great earthquake has occurred for a long time. Thus a need arises that in the construction of coastal dikes tsunamis should be taken into consideration as a design force in addition to sea waves which have currently been taken into account.

Therefore, a high resolution tsunami simulation model has been required to estimate necessary heights of coastal dikes against possible future earthquake tsunamis. The model consists of fine grids of 0.2km spacing along the eastern edge of the Japan sea and coarser grid systems with 0.6km to 3.6km spacing covering the whole Japan sea. In order to evaluate model reality, 1983 Nihonkai-chubu earthquake and 1993 Hokkaido-nansei-oki earthquake tsunamis were reproduced using the model. Very good agreements were observed with respect to coastal distribution of inundation heights, arrival time of the first tsunami wave and time histories of water surface and current velocity.