



Tsunami Run-up Heights at Imwon Port, Korea

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The Eastern Coast of the Korean Peninsula has been attacked frequently by a number of tsunamis causing severe damages during this century. Among them, 1983 Central East Sea and 1993 Hokkaido Tsunami events were recorded as the most devastating events in Korea. More recently, the Great East Japan Tsunami had also attacked the Korean Peninsula. The Eastern Coast of the Korean Peninsula is the terminal place where tsunamis climb up inland after it generated along the western coast of Japan. The central part of the coast, in special, is worried as a tsunami danger zone because much tsunami energy is concentrated on by a topographic condition of this region.

Recently, several coastal facilities including harbors and breakwaters are built and operated along the Eastern Coast of the Korean Peninsula. Furthermore, several nuclear power plants are already operating and several more units are now under construction. Residents who lived alongside the coast want free from unexpected danger, so the tsunami hazard mitigation becomes an important issue of coastal problems in Korea. Through the historical tsunami events, the Imwon Port is known as the place where most severe damage occurred, especially in 1983.

An effective and economic way for the tsunami hazard mitigation planning is to construct inundation maps along the coast vulnerable to tsunami flooding. These maps should be built based on the historical tsunami events and the projected scenarios. For this purpose, an accurate estimation of tsunami run-up height and inundation process through the numerical model is needed.

As a first step to tsunami mitigation program, the maximum run-up heights at the Imwon Port are computed and compared with field observed data. For this, tsunami run-up heights in this region were filed surveyed again. The run-up heights for both 1983 and 1993 Tsunami events are computed along the Eastern Coastline of the Korean Peninsula. Finally, a tsunami hazard map is generated based on the computed and observed run-up heights. Significant information such as proper evacuation routes, shelters and hot lines are included in the map.

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