

Numerical analysis for the boulder transport by the 2004 Indian Ocean tsunami at Pakarang Cape, Thailand

Kazuhisa Goto[1]; Kiyohiro Okada[2]; Fumihiko Imamura[3]

[1] DCRC, Tohoku Univ.; [2] Civil Engineering, Tohoku Univ.; [3] Disaster Cntr. Res. Cntr., Tohoku Univ.

The tsunami of 2004 in the Indian Ocean transported thousands of boulders shoreward at Pakarang Cape, Thailand. The boulders found at the cape were fragments of reef rocks and all boulders were deposited below the high-tide line (Goto et al., 2007). We carried out field observations of the tsunami, along with numerical calculations. These suggest that the tsunami waves that were directed eastward, struck the reef rocks and coral colonies, originally located on the shallow sea bottom near the reef edge, and detached and transported the boulders shoreward. In order to understand the relationship between the hydrodynamic features of the tsunami and the spatial/size distribution of boulders at the cape, we also investigated the process by which these boulders were transported at Pakarang Cape based on the numerical calculation for the boulder transport by the tsunami. We found that the slope at the beach plays an important role for determining the boulder distribution, and all average and maximum boulders were calculated to be stopped below the high-tide line.