Timing and scale of tsunamis caused by the 1994 Rabaul eruption, East New Britain, Papua New Guinea

Yuichi Nishimura[1]; Mitsuhiro Nakagawa[2]; Jonathan Kudoun[3]; Joseph Wukawa[3]

[1] Inst. Seismology and Volcanology, Hokkaido Univ.; [2] Earth & Planetary Sci., Hokkaido Univ.; [3] RVO

http://karkar.eos.hokudai.ac.jp/nishimura/

In order to investigate the timing and scale of the 1994 Rabaul tsunamis, we conducted reconnaissance geological mapping of the 1994 tsunami deposits. Around Rabaul, the tsunami deposits are identified as sand layers or characteristic pumiceous sand (mixes pumice and sand) layers sandwiched by tephras from both Vulcan and Tavurvur Volcanoes. The tephra might play an important roll to preserve the original structures of the tsunami deposits. According to the chronological studies of both tephra and tsunami deposits, we infer that the tsunami was not generated by the first small eruption from Vulcan Volcano although this eruption occurred close to the coast. The tsunamis were excited several times or continuously by larger pyroclastic flows and base surges during the climactic stage of the volcano. Tsunami run-up heights estimated from distribution of the tsunami deposits are ca. 5 meter around western to southern shore of Matupit Island.