

Gravity survey of Shinjima Island, Kagoshima Bay, Kyushu

Naoto Inoue[1]; Yuichi Yoshinaga[2]; Tsuyoshi Haraguchi[3]; Ryusuke Imura[4]; Tsuneeo Eto[5]

[1] Kyoto Univ.; [2] Earth and Environmental Sci, Kagoshima Univ; [3] Geosci.,Osaka City Univ.; [4] Earth and Environmental Sci., Kagoshima Univ.; [5] Earth and Environmental Sci., Kagoshima

Univ

The Shinjima Island (Moeshima Island) is located in the northeast of Sakurajima, Kagoshima Bay, Kyushu, Japan. The Shinjima Island emerged at the eruption of Sakurajima in 1779. The topography of the Shinjima Island shows the graben and horst structures by several E-W trending active faults. The stratigraphy obtained from the drilling in the Shinjima Island by the Sakurajima Volcano Research Center of Disaster Prevention Research Institute, Kyoto University (SVRC), indicated the andesitic lava covered with the pyroclastic deposits (Miki et al, 2004). We carried out gravity survey in the Shinjima Island with the purpose of confirm the configuration of andesitic lava.

We measured gravity at 41 stations along the coast line and cross the Shinjima Island with SCINTREX CG-3M of the OYO Corporation during 2004 July 22 to 23. The interval of gravity station was about 50m. The two N-S profiles run through the eastern and western sides of the Shinjima Island and one E-W profile crossed the central part of the Shinjima Island. The 2D two layer analysis was performed to determine the basement configuration (andesitic lava). The N-S profiles were obtained with the constraint of the result of E-W profile, which was constrained with borehole data by the SVRC. The N-S profiles indicated the uplifted basement configuration. The basement uplifted in the middle part of the Shinjima Island on the western N-S profile. On the contrary, the basement in the northern part on the eastern N-S profile uplifted and was shallower than the western side.