

霧島火山における2011年1月の噴火以降のGPS連続観測による地殻変動 Crustal deformation after the eruption on January, 2011 by continuous GPS observation in Kirishima Volcano

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In January, 2011, sub-Pulnian eruption occurred in Shinmoedake. Before the eruption four continuous GPS sites are operated with one site of DPRI, Kyoto University, three GEONET and two NIED sites. Four continuous GPS sites were added to the existing GPS network after the eruption. Two other GPS sites were settled in April, 2011. The dense GPS network is consisted of 17 GPS sites.

The deflation source of the eruption is estimated about 7km westward from Shinmoedake with 9.3km depth. The amount of deflation is about 24 M cubic meters. This deep deflation source seems to be magma chamber in this activity.

Length changes are calculated on several baselines. Extension rate of baseline lengths after the eruption are almost same as that before the eruption. However, there are three period of rate change, May, August and November to December, 2011. In May, rate of baseline occurred, whose end point is located near the deep source. In August, rate of baselines decreases to almost zero, where baselines are across on the Shinmoedake. Rate of baselines also decreases to almost zero, where baselines are over the deep source. Length of these baselines became extended in August. It seems that magma supply into the deep chamber becomes lower.