

## Magma intrusion system estimated from the ground deformation at Miyake Volcano in and after the 1983 eruption

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A magma intrusion system at the Miyake Volcano is discussed from the ground deformation observed by the GPS and leveling. Before the 2000 eruption, inflation deformation is detected by GPS and leveling. However, a rate of intrusion is within  $5 \times 10^6 \text{m}^3/\text{yr}$ , which amounts to only  $1 \times 10^8 \text{m}^3$  after the 1983 eruption. Tada and Nakamura (1988) discuss the vertical deformation in the Miyake Island as the magma deflation model. A dike intrusion under the southwest part of the volcano with depth of 4 ~ 8km is estimated from the vertical movements at the 1983 eruption. The horizontal displacements in 1971 and 1993 by GSI show the extension at the part of the volcano, which is consistent with the open crack model. The dike intrusion was undergoing with the volume of  $2-8 \times 10^8 \text{m}^3$ .