

Magma Plumbing System of the Izu-Oshima Volcano Inferred from the Crustal Deformation by Geodetic Measurements

Makoto Murakami[1]

[1] Geography and Geodynamics Research Center, The GSI

Izu-oshima is an active island volcano of the northernmost part of the Izu-Bonin arc, central Japan. Repeated and continuous geodetic measurements using leveling, EDM and GPS revealed that shortly after the 1986 eruption the inflation of the island resumed. The recent observations indicate the inflation is still on-going. The spatial pattern of the deformation suggests that a magma chamber is located at about 5km depth beneath the center of the island and inflates at a rate of several million cubic meters per year. In addition to the spherical source, a vertical planar magma source is required to explain the subsidence in the southern part of the island, which is consistently measured by the repeated precise leveling. In the presentation, we construct a model for the magma plumbing system of the volcano starting from the geodetic measurement results, and discuss its implications for the eruption prediction.