

## Was the magma migration real?

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From June 26, 2000, an intensive earthquake swarm started under the Miyake-jima Island, 180km south off Japan. This swarm was closely related to the eruption of the Miyake-jima Island, probably dominated by the underground magmatic activity. The swarm spread toward northwestern ocean region from Miyake-jima Island, in which a huge number of earthquakes (over about 100,000) including five large events with M6 were detected for about 2 months. This earthquake swarm was the most active one since we started the seismic observation in 1970's.

Although some telemetered observation stations exist on the Izu volcanic islands, no offshore instruments were operated in the area of this earthquake swarm. To understand both the spatial and temporal changes of this activity, we conducted a series of ocean bottom seismometer observations. According to the variation in the seismic activity with time, we changed the array configuration of OBSs six times. Furthermore, a real time seismic observation was undertaken using a buoy-telemetering OBS system.

Combining the OBS data with those of the island stations, very precise earthquake locations were determined. The epicenter distribution obtained strongly indicates a northwest-southeastern lineament. The vertical cross-section of the events shows two characteristic trends. Deeper (7-13km) events are forming a very thin (2km thick) plane, while shallower ones show much thicker distribution. These distribution patterns will provide important constraints on the physical mechanism of to understand of the magma migration.