

## The study of Aogashima volcano by geophysics

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### 1. Introduction

Aogashima volcanic island is located at the southern edge of the Izu Island Arc. Aogashima is the ellipse shape island with an area of 5.98 km<sup>2</sup>, and the circumference of the island is about 9km. The latest volcanic hazards occurred from 1780 to 1785. It evacuated villagers from to Hachijo Island. Even now, if volcanic eruption occurs, the residents of Aogashima will be evacuated. Considering evacuation from the island, the residents should escape far from the island promptly. Besides, some studies show there is a possibility that the phreatomagmatic eruption occurs, because the sea water goes into the island at same level of the sea.

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-Approach to detect the location of the magma chamber.

-Approach to grasp the weak area in Aogashima geological structure.

-Approach to know the groundwater properties.

-Approach to monitor the tectonic movement relate to the volcanic eruption.

### 2. Aogashima study by geophysics approach

#### 2-1 Approach to detect the location of the magma chamber

Helicopter-borne aeromagnetic survey was carried out over the Aogashima Island on 6th December 2006. Now we are analyzing data According to the total magnetic intensities, we found that the northern part of island is low magnetic intensity, and the southern part of island is high magnetic intensity. We try to detect a location of the magma chamber after choosing the signals of the deeper geological feature.

#### 2-4. Approach to monitor the tectonic movement relate to the volcanic eruption.

To detect the tectonic movement, GPS receivers were installed at two points. One is located at Fureai Sauna, which is at geothermally active area, and the other is located at the southern part of Maruyama, which is at non-active area. The data are stored in the PC. In the near future, we will develop an on-line observation system to catch anomalous crustal movement immediately.

### 3. Conclusion

Authors made a plan of the study as three time stages. The first step is the field work for collecting data since May of 2006 to April of 2007. The second step is the analyses of data which will be obtained at the first step. The third step is to prepare the scenario of next volcanic eruption, which was predicted at the future considering the geological structure of Aogashima.

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