

On the significance of the monitoring of volcanic islands activity from the neighboring sea surface

*Yozo Hamano¹, Hiroko Sugioka³, Mie Ichihara²

1. Department of Deep Earth Structure and Dynamics Research, Japan Agency for Marine-Earth Science and Technology, 2. Earthquake Research Institute, University of Tokyo, 3. Department of Planetology, Kobe University

We have developed a remote island volcano monitoring system using the Wave Glider (WG) manufactured by Liquid Robotics Inc. The WG sails sea surface for long time using sea waves and solar energy without any fuel, and is equipped with a satellite communication modem to transmit data message to the land station. The system observes 1) volcanic eruptions with infrasound signals, 2) deep volcanic activity by seismic signals with the underwater hydrophone, 3) eruptive activity by photographs, and 4) waves by wave gauge while autonomously navigating around the remote island far from the land, and transmit the information to the land station via satellite communication. This sea going monitoring system of the volcanic activities is useful not only for inhabited small volcanic islands but also the big islands such as Izu-Oshima island. Especially, the hydrophone measurements from the sea extend the seismic network confined within the island and enable the highly sensitive seismic observation on the seismic activity in the deeper part of the island.

Keywords: Volcano, Izu-Oshima, Volcanic activity monitoring