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Preliminary report for a dense seismic array observation for a short period in the western area at Kirishima Volcanoes

Hiroki Miyamachi[1]*, Tomoki TSUTSUI[2], Takeshi MATSUSHIMA[3], Yusuke YAMASHITA[3], Hiroshi SHIMIZU[3], Takeshi TAMEKURI[4], Hiroyuki INOUE[4], Jun OIKAWA[5], Hiroshi YAKIWARA[1], Shuichiro HIRANO[1], Kazuhiko GOTO[1], Suguru SHIMOSAKO[1], Kengo IWAMOTO[1], Ryusuke IIHOSHI[1]

[1]Kagoshima University, [2]Akita University, [3]Kyushu University, [4]Kyoto University, [5]University of Tokyo

Dense seismic array observation composed of 97 temporary seismic stations was carried out in the western wide area at Kirishima Volcanoes in a period from March 7 to March 13, 2011. This observation aims to observe the volcanic events such as volcanic earthquakes, tremors and local earthquakes occurred in and around the volcanoes, in order to try to estimate the spatial locations of these events, to try to detect the temporal change of the event locations, and to obtain the basic velocity structure beneath the volcanoes.

The array consisted of three profiles, A-profile, B-profile and C-profile. Each profile has 46, 25 and 26 temporary seismic stations equipped with a 4.5Hz UD-component seismometer and LS-8200SD recorders, respectively. A spatial interval between the stations along the profiles is about 100m. At each station, it was scheduled to record continuously seismic waves every about 3 hours.

During the whole observation period, one eruption occurred on 02h50m, March 8. Because the 10 minutes interruption scheduled between the continuous recording periods unfortunately overlapped the eruption time, we have no seismic data accompanied by the eruption. In addition, the main shock and many big aftershocks of the 2011 Off the Pacific Coast of Tohoku Earthquake occurred on March 11 strongly disturbed weak signals produced in the volcanic area. However, we could successfully obtain other seismic data derived from local earthquakes and volcanic events.

Keywords: array, volcano, Kirishima