

## Micro-earthquake activity at Usu volcano revealed by temporary dense observation

# Hiroshi Aoyama[1]; Shin'ya Onizawa[2]; Takeshi Tameguri[3]; Atsuo Suzuki[4]; Tokumitsu Maekawa[4]; Hiromitsu Oshima[5]; Hitoshi, Y. Mori[6]; Takeshi Hashimoto[7]; Toru Shiga[8]; Hiroshi Koyama[9]; Masaki Nakahashi[9]; Akifumi Yoshikawa[9]; Yoshiaki Fukuyama[9]

[1] ISV, Hokkaido Univ.; [2] GSI, AIST; [3] SVRC,DPRI,Kyoto Univ.; [4] Inst. Seismology and Volcanology, Hokkaido Univ.; [5] Usu Volcano Observatory, Hokkaido Univ.; [6] Inst. Seismolgy and Volcanology, Graduate School of Science, Hokkaido Univ.; [7] Inst. Seismol. Volcanol., Hokkaido Univ.; [8] Sapporo D. M. O. ,JMA; [9] Sapporo District Meteorological Observatory

We performed temporary dense observation at Usu volcano in summer 2006, aiming to reveal micro-earthquake activity under the summit crater during dormant period of the volcanic activity. During about 80 days of temporary observation, more than 330 volcanic earthquakes were observed. Of these earthquakes, well-recorded 142 events are selected for relocation analysis using the 3D-velocity structure model which is the result of the explosion seismic experiment at Usu volcano in 2001. Following the result of relocation, we estimated focal mechanisms of seven earthquakes whose magnitudes are more than 1.0. The temporal observation and analyses gave us three new insights about seismic activity; 1) Continuous activity of volcanic earthquake is seen at the shallow part under the southern crater floor, 2) Hypocentral regions are distributed along the SW end of the U-shaped fault which was built in the 1977-1982 eruption associated with the uplift of Usu-Shinzan crypt dome, 3) Strike direction of the seven major earthquakes are almost parallel to the U-shaped fault, and dominant mechanism is dip-slip type which suggests subsidence of summit domes relative to the southern crater floor.