

SEM031-P07

Room: Convention Hall

Time: May 26 17:15-18:45

Hydrothermal activity beneath Tarumae volcano inferred from self-potential

Hideaki Hase^{1*}, Makoto Uyeshima¹

¹ERI, the Tokyo University

Tarumae volcano is one of the active volcanoes in Japan, located at the southeastern part of Shikotsu caldera, in southwestern Hokkaido, Japan. After the 1667 massive eruption, the volcano has occurred over seventy times of eruptions until now. In 1978, a small phreatic eruption was occurred at the A-crater located southeastern part of the summit lava dome. The volcanic activities continued until 1981 accompanying with ash fall. Fumarolic activities at the E-crater located southwestern part of the summit lava dome were getting high and the volume is increased from 1998. Temperature of the A-crater rapidly increased from approximately 200 to 600 degree C in 1999 and has been kept the high temperature. Temperature of the B-crater also increased from approximately 200 to 400 degree C in 2002, and has been kept the temperature.

Self-potential (SP) anomalies associated with hydrothermal activities has been observed at the many active volcanoes, which are considered as a very important indicator to evaluate their volcanic activities. SP mapping surveys on Tarumae volcano has been repeatedly conducted by Sapporo District Meteorological Observatory from 1992. Their SP map shows a clear topographic effect on the mountain trail at the northeastern part of the volcano and a positive SP anomaly on the summit crater basin. They estimated hydrothermal system beneath the volcano located at 500 m ASL by using point source calculations applying to the positive SP anomaly data on the summit crater basin.

As described above, it has been discussed about the hydrothermal system beneath the Tarumae volcano, however, the survey area is limited into the summit crater basin that may be not enough to evaluate the hydrothermal system. In this study, we conducted SP mapping surveys on the extensive area including the Tarumae volcano in order to clarify the hydrothermal system, and will discuss the interpretation of the SP data in this presentation.

Keywords: self-potential, hydrothermal system, Tarumae volcano