R003-02 **会場: C 会場（4F 会議室 1）** **時間: 10 月 24 日 9:15-9:30**

ACTIVE から推定される 2014-2015 年阿蘇山マグマ噴火時における連続的な比抵抗構造時間変化モデル

南 拓人 [1]; 宇津木 充 [2]; 歌田 久司 [3]; 鍵山 恒臣 [4]
[1] 名大・環境・地震火山研究センター; [2] 京大・理・火山研究センター; [3] 東大・地震研; [4] 京大・理

A series of 3-D resistivity change models of Aso volcano from 2014 to 2015, as inferred by five ACTIVE data sets

Takuto Minami[1]; Mitsuru Utsugi[2]; Hisashi Utada[3]; Tsuneomi Kagiyama[4]
[1] EVRC, Nagoya Univ.; [2] Aso Vol. Lab., Kyoto Univ.; [3] ERI, Univ. Tokyo; [4] Graduate School of Science, Kyoto Univ.

The latest magmatic eruptions started in Aso volcano in November 2014, after 20 years of the quiescent stage. A research group of Aso Volcanological Laboratory, Kyoto University, has conducted five campaigns of ACTIVE (Utada et al. 2017) observations from May 2014 to August 2015, including the magmatic eruption period (from November 2014 to May 2015). ACTIVE is a controlled-source electromagnetic volcano monitoring system consisting of transmitters with earthing electric dipoles and an array of induction-coil receivers that measure the vertical component of the induced magnetic field. Minami et al. (2018) revealed temporal variation in the three-dimensional (3-D) resistivity structure from August 2014 to August 2015, by focusing on the two data sets. However, there remained the other three data sets that have not used in the analysis, i.e. those obtained in May 2014, November 2014, and February 2015.

In this study, we performed three additional inversions to reveal detailed evolution of the hydrothermal system of Aso volcano over the magmatic eruption period from November 2014 to May 2015. Using the five ACTIVE data sets, we resolved the evolution of the change in the 3-D resistivity structure from May 2014 to August 2015 into four snap shots of 3-D resistivity change models for Period 1 (May 2014 to Aug. 2014), Period 2 (Aug. 2014 to Nov. 2014), Period 3 (Nov. 2014 to Feb. 2015), and Period 4 (Feb. 2015 to Aug. 2015). In Period 1, which corresponds to the rainy season, the resistivity decreased in the surface layer, probably due to heavy rainfall. Furthermore, a resistive change was modelled just beneath the bottom of the first crater of Nakadake, which is consistent with the lowered water level and drying of the crater lake in this period. In Period 2, the surface resistivity in turn increased. It is likely because the surface layer dried after the end of the rainy season. In Period 2, a resistive change 400 meter beneath the crater bottom was modeled in the same zone as Minami et al. (2018). This can be due to drying of the hydrothermal system driven by ascending magma just before the start of magmatic eruptions in November 2014. From Period 3 to 4, the trend of resistive change is reversed to conductive change at the depth of 400 m. We interpreted this change in the trend as recovering of ground water in the hydrothermal system after the peak of the magmatic activity in February 2015. In this presentation, we plan to report details of our inversion method and explain the features of the four 3-D resistivity change models.