R004-P08
ポスター 2 ：11/5　AM1/AM2 （9:00-12:30）

#穴井　千里 [1)], 大倉　敬宏 [2)], 吉川　慎 [2)], 望月　伸竜 [3)]
[(1] 高知大学海洋コア総合研究センター,[(2] 京都大学火山研究センター,[(3] 熊本大学

Temporal change with rock magnetic properties of volcanic ashes: A case study on the Aso Nakadake 2019 – 2020 eruption

#Chisato Anai[1)], Takahiro Ohkura[2)], Shin Yoshikawa[2)], Nobutatsu Mochizuki[3)]
[(1]Center for Advanced Marine Core Res. Kochi Univ.,[(2]Aso Volcanological Laboratory, Kyoto Univ.,[(3]Kumamoto University

We investigated temporal changes in the magnetic properties of volcanic ash ejected from the Aso Nakadake volcano during a sequence of ash eruptions from 2019 to 2020. Volcanic ash was continuously collected during the time series of the ash eruptions. We performed detailed measurements on these samples to investigate temporal changes in the rock magnetic properties of volcanic ash and their possible relationship to the eruption processes. Volcanic ash was collected from eight sites that were included in the observation points of the Aso Volcanological Laboratory, Kyoto University. This study focused on the volcanic ashes at four sampling sites, Kako-fuchi (KAF), Hondo observatory (HOND), Sakanashi (SAK), and National Aso Youth Friendship Center (AYFC), whose distances and directions from the first crater of the Nakadake volcano are approximately 250 m WSW, 1000 m SW, 7000 m NE, and 4400 m NNE, respectively. Titanium-rich titanomagnetite and titanium-poor titanomagnetite were the dominant magnetic minerals in the samples where titanium-rich titanomagnetite was more dominant. From the rock magnetic measurements, parameters such as the saturation remanent magnetization (M_{rs}), saturation magnetization (M_s), coercivity (B_c), and titanium content estimated from the Curie temperature (T_c) were extracted and checked for their temporal changes. The magnetic behavior of the magnetic minerals was confirmed by the increasing values of M_{rs}/M_s and B_c at several periods. The samples with higher values of M_{rs}/M_s and B_c included titanomagnetite with a low T_c (high titanium content). The clear increase in M_{rs}/M_s and B_c suggests that the ratio of the single-domain volume fraction increased, indicating that the titanomagnetite particles became finer in size. Interestingly, the periods of high M_{rs}/M_s and B_c were synchronized with observations of the volcanic glow. These results suggest that changes in the magnetic properties of volcanic ash reflect changes in physical and/or thermal conditions from the vent to the conduit.