
 [JJ] Evening Poster | S (Solid Earth Sciences) | S-VC Volcanology

[S-VC43] Volcanic and igneous activities, and these long-term forecasting

convener: Teruki Oikawa (GSJ, National Institute of Advanced Industrial Science and Technology), Takeshi Hasegawa (Department of Earth Sciences, College of Science, Ibaraki University), Daisuke MIURA (一般財団法人 電力中央研究所 地球工学研究所 地圏科学領域, 共同), Nobuo Geshi (Geological Survey of Japan, The National Institute of Advanced Industrial Science and Technology)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

This session focuses on generation and accumulation processes of magmas, magma-crust interaction and degassing, and modes of eruption, long-term forecast of eruption, dispersal and emplacement of the volcanic products. The discussion spans petrological, geochemical, geophysical, and geological processes related with volcanic activity and products in the past, the present and the future.

[SVC43-P09] Major element chemistry of volcanic glass from tephras around Pacayal Volcano in the eastern El Salvador, Central America

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Keywords: tephrochronology, WDS, major element analysis

In the mountainous area of the department of Usulután, El Salvador, Central America, stratovolcanoes are concentrated; Berlin-Tecapa, Tabulete, Usulután, El Tigre, Chinameca-Pacayal, San Miguel-Chaparrastique. In the area, many pumice layers deposited for the last 100,000 years are known, called Blanca Rosa, Jucuapa-1, -2, and -3, Twin/Las Gemelas, Unit/Unidad-A, Jucuapa-4, Pacayal-1, -2, -3, and -4, in ascending order, as shown in fig. 1. This study aims at revealing the characteristics on major element chemistry of these tephras to differentiate them from other tephras and to trace them in other area. For the purpose, chemical composition of volcanic glass from these tephras was analyzed using a wave-length-dispersive electron microprobe analyzer (WDS) in the laboratory of Prof. Siba, Department of Earth and Environmental Science, Hirosaki University, resulted as follows;

1) By the difference in major element chemistry, the tephras in the area can be distinguished from other tephra originating Coatepeque Caldera in western El Salvador, or Ilopango Caldera in central El Salvador.
 2) Major element chemistries of the tephras in the area were concentrated to four clusters, as shown in fig. 2. Most of the tephras belong to Cluster I that shows relatively K_2O poor and FeO and CaO rich chemistry. The Twin/Las Gemelas tephra and the Unit/Unidad-A tephra compose Cluster II, slightly higher in K_2O and lower in FeO and CaO than the chemistry of the Cluster I. The chemistry of the Blanca Rosa tephra and the Jucuapa-4 tephra forms Cluster III, plotted in the area where K_2O is higher and FeO and CaO is lower than the Cluster II. Only the Pacayal-1 tephra belongs Cluster IV that shows clearly unique chemistry of lower FeO and higher SiO_2 than other tephras while the K_2O value is similar to that of the Cluster III.