**Petrochemical characteristics of volcanic rocks of historic era at Mt. Baekdu, Korea**.

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The genesis and magma evolution were investigated with respect to volcanic rocks erupted for historical era from summit caldera at Mt. Baekdusan(=Changbaishan) volcano, using a comprehensive data set of major and trace elements, Sr, Nd, and Pb isotopic compositions. Based on the geological survey for summit caldera area, historic eruption materials are mainly composed of pumice, and trachyte and alkali rhyolite of the Baekdusan stratovolcano is overlain by this historic pumice. Total alkali content change for an increase of the SiO2 indicates a differentiation tendency of alkali basalt magmas, and corresponds to the high-K-series. REEs pattern normalized to the chrondrite are more enriched in HREEs than LREEs with weak positive Eu anomaly in trachybasalt, but mild to strong negative Eu anomaly from trachyte to rhyolite. It can be divided two group, group-A ( 1 ka Millennium pumice, 1668 and 1905 pumice) and group-B (40 ka trachyte, 17 ka obsidian comendite, 25 ka pumice, 1702 pumice) according to the relative enrichment of HREEs. The geochemical characteristics and modelling result indicated that fractional crystallization of plagioclase, pyroxene, hornblende, and biotite occurred from trachybasalt to trachyte in composition, but fractional crystallization of K-feldspar is more important factor from trachyte to rhyolite. Within magma chamber, the upper part has been to be more mafic and the lower part to be more felsic by the fractional crystallization. The felsic magma eruption with more vapour component took place prior to the mafic magma eruption. Volcanic activity in Mt. Baekdusan summit during historical era was resulted from intraplate magmatism and trace elements do not indicate significant contributions from a subduction slab. Sr, Nd, Pb isotope ratios with same to basalt of the lava plateau indicate that lavas in summit were originated by melting of the same source material without little or no assimilation-contamination of crust material, being similar to source rocks of basaltic rocks in NE China.

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