

PETROLOGY AND EVOLUTION OF PLEISTOCENE-HOLOCENE LAVAS FROM UKSICHAN VOLCANIC FIELD (SREDINNY RIDGE, KAMCHATKA)

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New data on petrography, chemical and mineral composition of Pleistocene- Holocene basaltic lavas from shield volcanoes and scoria cones of Uksichan volcanic field (the Central Kamchatka volcanic belt, Kamchatka peninsula) show that they originate from a common magma source and parental magma, but with different degree and types of fractional crystallization. The computer simulation evidences that the lavas from late shield volcanoes were formed during isobaric crystallization ($H_2O \sim 2$ wet %, $fO_2 - +1.2$ NNO) under a pressure of 5 to 1 kbar with a step of 1 kbar. Such physical conditions correspond to relatively slow rising of magma chambers from depth of ~ 15 km to ~ 3 km.

Scoria cones were generated during polibarc fractional crystallization ($H_2O \sim 2.6$ wet. %, $fO_2 - +1.1$ NNO) with decompression speed of 0.25 kbar / % crystallization. This type of differentiation assumes the relatively fast melt transport without a long storage in the crust magma chambers.

Petrochemical indicators of two differentiation types are behavior of CaO and Al_2O_3 .

Keywords: Kamchatka, Sredinny Ridge, Uksichan Volcano, mineralogy, crystallization differentiation.