

Geochemical evidences of the genetic relationships between basalts of Klyuchevskoy and andesites of Bezmyanny volcanoes

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Lavas from Klyuchevskoy and Bezmyanny volcanoes, located in Eastern Kamchatka, range in composition from high magnesian basalt to high alumina basalt at KV and andesite to dacite at Bz. A preliminary geochemical data demonstrate that the lavas are genetically related. We present a new analytical data including major and trace elements on selected 15 samples from KV and 62 samples for BZ. The results support the idea that both KV and BZ represent a single fractional crystallization trend which may be derived from the same parental basalt. Major element variations demonstrate a classical calc-alkaline trend with silica enrichment and iron depletion. On Harker diagrams, two distinctive volcano lavas display continuous trends in Na₂O and K₂O, whereas these illustrate marked inflections in Al₂O₃ and TiO₂ corresponding to onsets of Plagioclase, hornblende, and magnetite. Behaviors of incompatible trace elements are also consistent with the concept of fractional crystallization. We suppose that the parental melt underwent similar fractional crystallization processes although these were erupted from different conduits.

