

Across arc variation of strontium isotopic and K₂O composition in the quaternary volcanic rocks from west java: evidence for crustal assimilation and the involvement of subducted components

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Many studies in the West Java suggested that Sr isotopic ratios and K₂O contents increase from the volcanic front to the back arc side volcanoes. In detail, however, when the normalized of K₂O wt% to SiO₂=55 wt% from the West Java Arc (WJA) are closely examined and compared with the Northeast Japan Arc (N 38°-41°, NEJA), the WJA shows rough across-arc variation and more diverse in K₂O especially in the volcanic front. For this reason, Sr isotope, major and trace elements data from 54 volcanic rocks of Quaternary volcanoes from WJA were collected and compared to 46 volcanic rocks of Quaternary volcanoes from NEJA. The increasing K₂O and decreasing of ⁸⁷Sr/⁸⁶Sr ratios with distance from trench have been found in NEJA but there are rough and no across arc variation of K₂O and Sr isotopic ratios in WJA. Our study shows that the across arc variation of magma chemistry on the WJA can be explained by crustal assimilation and the involvement of subducted components (e.g. altered oceanic crust and subducted sediment).