

## The influence of Philippine Sea Plate on the composition of basaltic rocks from southern Kyushu, SW Japan arc

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Boron is a suitable element to investigate the influence of subduction of oceanic crust on the composition of source materials, because it is enriched in sea floor sediments and altered oceanic crust (AOC). The AOC and sediments would be brought into the deep mantle as a part of a descending slab. In general the descending slab releases hydrous fluids during dehydration at high pressures, and these slab-derived fluids may be added to the source mantle wedge. Their boron content is relatively high compared with those of MORB and OIB.

We determined boron contents of basaltic rocks which erupted during the period from middle Miocene to the present from southern Kyushu, and estimated the influence of Philippine Sea Plate on the compositions of rocks. And we observed the space-time variation of subduction component to the source materials in this part of Kyushu arc.

The result of the study, showed that the basaltic rocks from northern Kyushu contain less boron than the those from NE Japan arc. This is because that the Philippine Sea Plate is younger than Pacific Plate, so it has thin sea floor sediments and the degree of alteration of the oceanic crust is small. Therefore there are few boron contents of Philippine Sea Plate.

Spatial change of the boron content was investigated by comparing fore-arc basaltic rocks with back-arc ones. The former has higher B content than the latter. And this trend was observed for both Pleistocene and Recent. At southern Kyushu, a relatively high boron contents in basalts appeared at the volcanic front younger than 1 Ma for the first time.

At southern Kyushu, the volcanic activity unrelated to subduction of a plate had started since about middle Miocene. It follows that the subduction of the Philippine Sea Plate, at volcanic front, the volcanic activity which is of subduction of Philippine Sea Plate origin had started since younger than 1Ma.