

## The occurrence and grain-size characteristics of distal facies of Aso-4 ignimbrite in Yamaguchi Prefecture

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Aso-4T ignimbrite is a low-aspect ratio ignimbrite which distributed widespread from Aso caldera via Seto Inland Sea to Yamaguchi Prefecture. Though the mechanisms of transportation and deposition of that are important issue of volcanology, the fundamental data such as the depositional distribution and grain-size characteristics were not studied enough. Then we surveyed geologically and analyzed the grain-size of Aso-4T ignimbrite in Yamaguchi Prefecture in addition to Aso-4A ignimbrite and Aso-4 ash-fall in the other localities for its comparison.

Aso-4T ignimbrite distributes widespread in central to western region of Yamaguchi Prefecture with relatively thin (2-3 m) thickness in contrast with Aso-4A ignimbrite which fills valley to a thickness of more than 40 m in Oita Prefecture. Aso-4 ash-fall deposits as 15 cm-thick and partially modified by water current and resedimented at Miyoshi city in Tokushima Prefecture.

Aso-4T ignimbrite is significantly altered and rich in clay. Oppositely, Aso-4A ignimbrite is coarse, poorly sorted and includes small amount of clay. Aso-4 ash is fine, relatively sorted and rich in clay. The maximum size of pumice in Aso-4T at 130-160 km from the source caldera is 1.0 to 1.2 cm, that in Aso-4A at 50-70 km is 20-30 cm and that in Aso-4 ash-fall at 314 km is 5 mm. The maximum length of hornblende in Aso-4T at 50 km and 130-160 km is 3.8 mm and 2.8-3.1 mm. That in Aso-4A at 50 km is 3.4 mm and in Aso-4 ash-fall at 314 km and 680 km is 2.5 mm and 0.9 mm.

The aspect ratio of hornblende in Aso-4T is 1.6-8.0, that in Aso-4A at 50-70 km is 1.5-8.0 and that in Aso-4 ash-fall at 314-682 km is 1.0-6.0.

Hornblende is resistant to alteration so that it suites to the study of grain-size characteristics of significantly altered ignimbrite such as Aso-4T. We recognized the tendency of the grain-size characteristics as follows:

- 1) the grain-size of hornblende in Aso-4A ignimbrite is slightly larger than that in Aso-4T ignimbrite
- 2) longitudinal variations of maximum size of hornblende in Aso-4A and 4T ignimbrites are relatively homogeneous than that in Aso-4 ash-fall
- 3) aspect ratios of hornblende in both ignimbrites are high than that in Aso-4 ash-fall.

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