

## Paleomagnetic study on the pyroclastic deposits of the Shikotsu caldera-forming eruption: Estimating the temporal gaps between the eruption phases

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We reported a preliminary paleomagnetic results of the pyroclastic deposits of the 40 ka Shikotsu caldera-forming eruption. Geological observation on the pyroclastic deposits indicated that these volcanic deposits were classified into five eruption phases. In order to estimate a possible temporal gap between these eruption phases, we conducted paleomagnetic measurements of the pyroclastic flow deposits and surge deposits. Non-welded pyroclastic flow deposits and surge deposits were collected using an improved sampling procedure; a cube guide was firstly fixed to the outcrop, and subsequently a cube was put into the outcrop trough the cube guide, and then the orientation of the cube was precisely measured on the front plane of the cube guide. The phases 2 and 3 of non-welded pyroclastic flow deposit have indistinguishable paleomagnetic directions, suggesting that these two phases occurred within the order of tens years. The paleomagnetic direction of the phase 4 of non-welded pyroclastic flow deposit is distinguishable from that of phase 3, suggesting a temporal gap between phases 3 and 4 is about 100 years. These paleomagnetic data will contribute to estimating the temporal sequence of the process of the Shikotsu caldera-forming eruption.

Keywords: paleomagnetic direction, paleomagnetic secular variation, non-welded pyroclastic flow deposit, caldera-forming eruption