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## Re-investigation of Holocene Eruptive History of Yotei Volcano, Southwest Hokkaido, Japan

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The latest eruption of Yotei volcano was occurred at the frank in approximately 10 ka. However, craters around the summit may be formed by Holocene activity because they have very good preserved land form. Therefore, we carried out geological and petrological investigations around the summit of Yotei volcano. Then, we can recognized eruptive deposits around the summit including Holocene activity and can fined a regularity of these activity in terms of changing crater with changing magma types and lava effusion more than 0.1 km<sup>3</sup>. Thus, we try to do long-term forecasting of eruption of Yotei volcano using these characteristics.

The stratigraphy of eruptive deposit around the summit of Yotei volcano is constructed on the basis of field occurrence and morphological investigation. Four eruptive crater groups are recognized, Summit, Hinangoya, Niseko and Kitayama ones in ascending order, from which six pyroclastic units (from S-6 to S-1 in ascending order) and five lava flow units, which flowed down to the foot of the volcano, erupted. Lava effusion occurred from the Hinangoya, Niseko and Kitayama craters. These activities were mainly Strombolian. <sup>14</sup>C age of unit S-2 fallout deposit from the Kitayama-Takamine crater, was obtained as 4010±30 cal. yBP. The latest (S-1) and S-4 eruptions from Kitayama craters occurred in ~2,500 yBP and >5,000 yBP respectively, on the basis of estimated accumulation rate of soil layers.

Whole-rock chemistry of juvenile materials is distinct among four crater groups, indicating distinct magma system has been active beneath different craters. Eruptive deposits of Kitayama group do not show the evidences of long interval. Thus, it could be concluded that the Kitayama group started its activity from mid of Holocene. Eruptive volumes of each eruptive group except for the Summit crater group range from 0.1 to 0.18 km<sup>3</sup>. After the last magmatic eruption in 2.5 ka, there is no evidence of eruptions from the Kitayama group which erupted already more than 0.1 km<sup>3</sup>, indicating that activity of the group has finished. However, considering newly revealed eruption history of the summit area, it should be noted that next eruptive group with distinct magma system might start its activity from another crater. In that case, lava flow will flow down to towns of the western to northwestern foot of Yotei volcano depending on the position of the crater.

Keywords: Yotei volcano, Holocene, eruptive history, long-term forecasting of eruption