

## High-precision multipoint radiocarbon dating and reconstruction of the eruption history of the Mt. Fuji during the last 8,000 years using sediment cores obtained from the Fuji Five Lakes

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Mt. Fuji is an active volcano, located at the plate boundary of the Philippine Sea plate, the Eurasia plate and the North American plate, with the continuous activity characterized by basaltic magma from about 100,000 years ago. Drilling on land has been conducted repeatedly to reconstruct the eruption history through the stratigraphy of the volcanic product. However, there are only a few studies on lake sediments of the Fuji Five Lakes, especially Lakes Motosu and Sai and the sedimentary environment is less understood. Here we present the sedimentary stratigraphy using X-ray fluorescence core-scanner analysis in Lake Motosu and Sai, combined with the high-resolved radiocarbon dates of bulk sediments (109 samples) and plant fossils (20 samples) using accelerator mass spectrometry to reconstruct the eruption history of Mt. Fuji.

The radiocarbon dates of bulk sediments and plant fossils indicates the continuous sedimentary environment during the last 8000 year. A high-resolved age model was constructed in Lake Motosu and the validity of the age model was evaluated by Kawagodaira Pumice ( $3149 \pm 12$  cal yBP ;Tani et al., 2013). The number of scoria layers in cores was more than previous works on land, suggesting that the analysis of lake sediments could detect small eruptions. Moreover, the analysis of organic matter properties (total organic carbon, total nitrogen, total sulfur content and C / N ratio) indicates the change in supply of organic matters from the lake catchment. We concluded that the analysis of the lake sediments near the volcano is useful for clarifying the history of volcanic eruption, as well as paleoclimate change.

### Reference:

Tani, S., Kitagawa, S., Hong, W., Park, J.H., Sung, K.S., Park, G., 2013. Age Determination of the Kawagodaira Volcanic Eruption in Japan by <sup>14</sup>C Wiggle-Matching. *Radiocarbon*, 55(2-3), 748-752.

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