

## Rapid Growth of Niigata Yakeyama Volcano - Based on the Age of the Latest Magmatic Eruption, Otani Pyroclastic Flow Deposit II

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We precisely dated the latest magmatic eruption of the Niigata Yakeyama Volcano. <sup>14</sup>C wiggle-matching was performed on a charred tree that has a countable 10-year annual ring with bark from the latest magmatic eruption deposit, Otani Pyroclastic Flow Deposit II. In result, the age of outermost tree ring formation is 1444-1474 cal AD. <sup>14</sup>C wiggle-matching and calendar year calibration were performed using Oxcal 4 (Ramsey, 2009) and IntCal20 (Reimer et al. (2020)). We conclude that the Otani Pyroclastic Flow Deposit II is dated to the late 15th century, rather than the 18th century as previously thought. The Niigata Yakeyama Volcano erupted violently and grew rapidly for about 300 years after the eruption of the Hayakawa pyroclastic flow deposits in the 13th century, producing about 3 km<sup>3</sup> of magma. The recent eruptive activity of the volcano has been relatively small in scale, no-magmatic eruptions for the last 500 years.

Keywords: volcanic evolution, eruption history, precise dating, 14C dating, wiggle-matching, tree rings