

## Occurrence and distribution of pyroclastic fall deposits of Kuchinoerabujima volcano 2020 eruption

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At Kuchierabujima volcano, eruption began intermittently from January to February 2020. Relatively large eruptions are observed on January 11, 27 and February 3. The ash fall distribution survey was conducted on two eruptions with ash fall on eastern adjacent Islands excluding the January 27 eruption where the ash fall axis was in the south sea direction. We also used survey results provided by Japan Meteorological Agency Kuchinoerabujima Volcano Disaster Prevention Liaison Office and Kagoshima Prefecture Yakushima Office, and interviews with Yakushima Town Office and local residents.

The Ash fall deposits on Yakushima and Tanegashima Islands are all light gray to reddish light gray colored sandy to silty volcanic ash layers, the component are mainly composed of lithic fragments and hydrothermal altered fragments and small amount of fresh vitreous rock fragments. At the eruption of February 3, where the largest one during a series of eruptions, on the ash fall axis extending to the east, 430 g/m<sup>2</sup> of ash deposited in the northwestern part of Yakushima Island, 100 g/m<sup>2</sup> in the northeast part, and 30 g/m<sup>2</sup> in the southern part of Tanegashima Island. In the northern part of Yakushima Island, fine lapilli was also included, and the maximum particle diameter tended to be larger on the north side than the ash fall axis. The deviation between the axis of ash fall axis and the axis of maximum particle diameter distribution can be explained by the difference in wind direction and wind speed at altitude. The distribution of ash fall and maximum particle size was similar to that of the January 17, 2019 eruption, but the distribution was slightly northward and the width of the heavily deposited area was wider.

The amounts of air fall deposits were obtained by the method of Fierstein and Nathenson (1992) using average deposition density of 1000 kg/m<sup>3</sup>. Based on the distribution data of distant deposits, they are estimated to be ca.15,000 tons on the January 11 eruption and ca.96,000 tons for the February 3 eruption. These are smaller than the amount of air fall deposit of May 29, 2015 eruption estimated in the same method, ca.120,000 tons. Since 2015, the eruptions of Kuchierabujima shows a positive correlation between eruption column heights and estimated amounts of air fall deposits.

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