

Changes in water chemistry of hot springs at the eastern foot of Kusatsu-Shirane volcano before and after the eruption of Mt. Moto-Shirane in 2018

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The Kusatsu-Shirane volcano is one of the most famous active volcanoes in Japan. The volcano consists of the three pyroclastic cones named Shirane, Ainomine and Moto-Shirane. On January 23, 2018, Mt. Moto-Shirane had erupted suddenly without obvious precursor phenomenon. There are no geothermal activities around the summit of Mt. Moto-Shirane although the fumarolic area and the hot springs are located at the eastern side of the mountain body. We reconstructed the time series data on the water chemistry of the two major hot springs located at the eastern foot of Mt. Moto-Shirane, which are known as Bandaiko and Kusatsu-Yubatake, to understand the changes in the geothermal conditions connected to the eruption. In those hot springs, an increase of a concentration of some dissolved components was observed since 2013 which may correspond to the increase of volcanic activity of Kusatsu-Shirane volcano suggested by several observation phenomena. However, we could not find any change in water chemistry thought to have been induced by the eruption of Mt. Moto-Shirane in January 2018.

Keywords: Kusatsu-Shirane volcano, Mt. Moto-Shirane, Kusatsu hot springs