

Water environment around Kusatsu-Shirane volcano and consideration of the effect of eruption in January 2018

*Igari Yoshihiro¹, Koji Kodera², Kazuki Asami¹

1. Grad.Student,Hosei Univ., 2. Dep.of Geography Hosei Univ.

1. Introduction

The eruption (steam explosion) occurred in Mt.Motoshirane (One of Kusatsu-Shirane Volcano) on January 23, 2018. In this area, water quality survey of water environment began in May 2017 before the eruption. In addition to examining the influence on the water quality before and after the eruption, we studied the elution component of volcanic ash and the influence on the water environment. We also attempted to consider water quality forming factors in river water around Kusatsu-Shirane volcano.

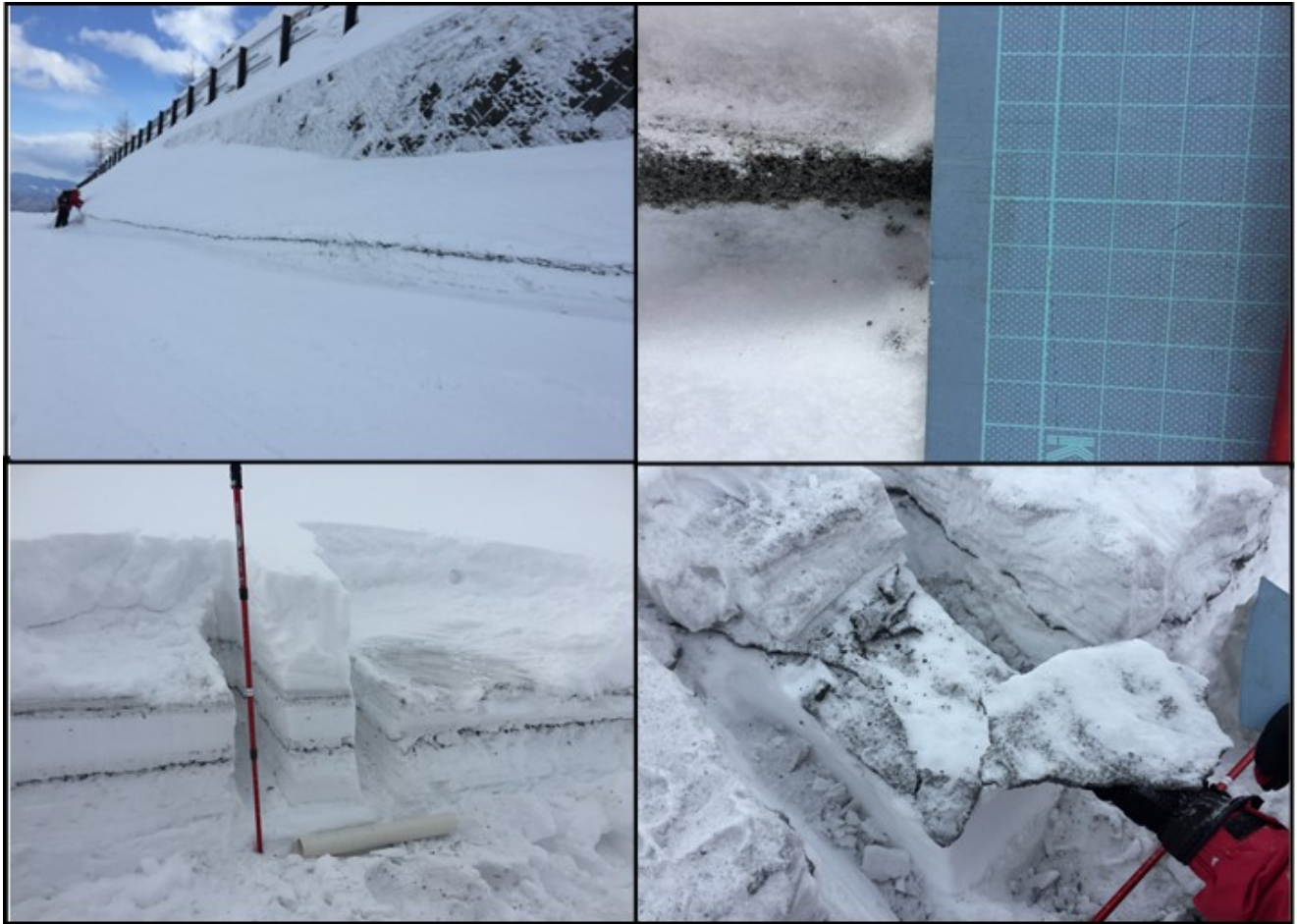
2. Research method

We conducted about 21 field surveys from May 2017 to March 2019. The survey site is about 45 sites, centering on rivers flowing in the east and south of the mountain. Temperature, water temperature, pH, R_pH, EC, and flow rate were measured locally, and the sampled sample was analyzed for the main dissolved components. In February 2018, we investigated the deposition situation and ash fall volume of volcanic ash and conducted sampling, and carried out dissolution experiment. In addition to rivers, field surveys and sampling of lakes and precipitation, snow cover, hot spring water were conducted.

3. Results and discussion

In Shirasuna River flowing to the east side of the mountain, groundwater and river water influenced by hot spring drainage and volcanic activity flow in from the tributary. There are points where the EC value fluctuates greatly, and it is influenced by the discharge and conduction of the dam which stores the neutralizing water of acidic rivers. In the Gando Swamp where the site of sulfur mine is located in the upstream part, the water quality is around pH:2.0, EC:6000 μ S/cm. It is conceivable that the deposited volcanic ash affects the quality of the surrounding river due to snow melting water and precipitation.

Keywords: Mt.Kusatsu-Shirane, Volcano, Water environment, Eruption, Hot spring



Picture.1 Ash fall in the east foot of Kusatsu-Shirane volcano
(February 6, 2018)

