

Chemical compositions and stable isotope ratios of volcanic gases on the northern slope of the summit of Kusatsu Shirane volcano

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Eighteen of volcanic gases were sampled at the fumarolic area on the North Slope of Kusatsu-Shirane volcano.

The correlation between the stable isotope ratios of H₂O and the CO₂/H₂O or H₂S/H₂O ratio suggests that a part of H₂O in volcanic gases was lost as condensate.

A significant variation was found in the H₂S/CO₂ ratio, which could not be attributed to the condensation of H₂O. The fumarolic area can be divided into three districts based on the H₂S/CO₂ ratio. The H₂S/CO₂ ratio in the eastern and western districts are 0.38 to 0.54, 0.30 to 0.38, respectively. The ratios of central district are 0.65 to 0.87, which are much higher than the two districts.

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