

## Water Quality and Stable Isotope of Groundwater in Mt. Myoko, Niigata Prefecture, Japan

# Ryuichi Hashimoto[1]; Masaki Yokozawa[2]; Takeshi Hayashi[3]; Kazuyoshi Asai[4]; Yoshinori Sato[5]; Masaya Yasuhara[6]; Masahiko Makino[7]; Yasuo Shimano[8]; Yuichi Suzuki[9]

[1] Faculty of Geo-environ. Sci., Rissho Univ.; [2] Environmental systems, Rissho Univ.; [3] FS, U-Tokyo; [4] Geo science lab; [5] Soc. Sci., Joetsu Univ. of Ed.; [6] Geol. Surv. J.; [7] GSJ,AIST; [8] Bunsei Art Univ.; [9] Geo-Environmental Sci., Rissho Univ.

In order to clarify the groundwater flow system of the Myoko volcano, the field survey was carried out in August, 2006. Electric Conductivity, pH and discharge of springs, hot springs and rivers are measured in situ. Water quality and stable isotope ratio of hydrogen and oxygen are analyzed in the laboratory. The water quality of the groundwater of the mountain area of the Myoko volcano was investigated, and the authors discussed the groundwater flow system of the mountain. The authors took the samples of river water at 90 point, spring water at 17 point, lake water at 6 point, hot spring water at 12 point, groundwater at 1 point, and 126 sampling points in total. At the sampling, water temperature, pH, and electrical conductivity were measured. The results of the investigation are as follows;

(1) The water qualities of springs, rivers, are mainly Ca-HCO<sub>3</sub> type. However, there are some stream waters of Ca-SO<sub>4</sub> type near the crater.

(2) The concentration of dissolved ion is high in the upper region of a river and low in the down stream region. Especially at the point close to the crater, the concentration is very high.

(3) In the upper region of the river, the water quality of river water is the Ca-SO<sub>4</sub> type, and the concentrations of dissolved ion are high, and water temperature and electrical conductivity are high and it is clear that the water is influenced by the mixing of hot spring water located near the point.

(4) The  $\delta$  value is almost 20. The attitude effect of river water is about -2.09 permill/100m in  $\delta$  D, and -0.23 permill/100m in  $\delta$  <sup>18</sup>O. The attitude effect of spring water is about -2.31 permill/100m in  $\delta$  D and -0.29 permill/100m in  $\delta$  <sup>18</sup>O.