

## Influence of the Noboribetsu hydrothermal systems on surrounding water regions

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A variety of hydrothermal systems exist in the Noboribetsu area, Hokkaido, which produces neutral to acidic hot springs. The high  $\delta D$  and  $\delta O^{18}$  values for the hot springs suggest that they originate from magmatic water (Matsubadani et al., 1977). Also, this area, including Lake Kuttara next to Noboribetsu, exhibits high geothermal gradient of 90 °C/km (Matsubadani et al. 2011). However, a short knowledge of the geological structure makes us difficult to discuss the whole hydrothermal systems. In this research, water and heat budgets of a boiling pond, downstream of the Ohyunuma Pond, were estimated by monitoring water temperature. As a result, the heat fluxes from the bottom of the pond were estimated at 2,482 W/m<sup>2</sup> and 3,360 W/m<sup>2</sup> for two periods. Meanwhile, water temperature of Lake Kuttara was measured vertically and continuously at the deepest point. Using the data of a TCTD profiler, the heat flux at the bottom was estimated at 1.01 W/m<sup>2</sup>, suggesting hot water input to the bottom. Henceforth, we will explore the relations between the bottom thermal variations and Noboribetsu geothermal activity.

Keywords: Noboribetsu hot spring, Lake Kuttara, Heat budget, Heat flux, Hydrothermal system