

Geochemistry of acidic hydrothermal activities enriched with HCl

*Shinji Ohsawa¹, Kazuhiro Amita²

1. Institute for Geothermal Sciences, Graduate School of Science, Kyoto University, 2. Research Center for Engineering Science, Graduate School of Engineering and Resource Science, Akita University

The general hydrothermal system is accompanied by acidic hot spring of sulfuric acid (H_2SO_4) in the periphery of the activity center of it, whereas sulfuric acid hot Springs bearing chloride ion (Cl) are universally present in the center of active volcanoes. That kind of acid hot springs are thought to be generated directly by strongly acidic hydrothermal activity, and thermal water rich in hydrochloric acid (HCl) showing $\text{Cl} > \text{SO}_4$ relationships is rarely discharged from Tamagawa hot spring in Akita Prefecture, Japan and Beitou hot spring in Tatun Volcanic area, Taiwan. Both hot springs are also well known that the rare hot spring deposits, Hokutolite (Pb and Ra bearing BaSO_4) precipitates from the hot spring waters and HCl seems to be deeply involved in the mineral formation (Ohsawa et al., 1988). In this presentation, we will introduce geochemical characteristics of acidic hot spring and hydrothermal activity rich in HCl through the results of the study on acid hot springs in Tatun conducted by one of the presenters (Ohsawa et al., 2013).

Keywords: geochemistry, acidic hydrothermal activity, HCl rich