

Preliminary paleomagnetic results from the manganese wad deposit at the Niimi hot springs, Hokkaido.

*Kazuo Kawasaki¹, Hideto Suzuki²

1. Graduate School of Science and Engineering for Research, University of Toyama, 2. Faculty of Science, University of Toyama

Paleomagnetic results are reported for the manganese wad deposit at the Niimi hot springs, Hokkaido, Japan. The hot spring is located at the foot of Mt. Shyakunage in the active Niseko volcanic area. The area is covered by Quaternary pyroclastics erupted from Mt. Syakunage. The manganese wad deposit was formed from the hot spring water by biomineralization processes. The hot spring's water emerges from a local spa that closed in March 2016 and forms two small waterfalls. Paleomagnetic analysis was done on 144 manganese wad specimens that were collected from a wall surface next to one waterfall. The wad was about ~65 cm in thickness and oriented specimens were collected with 7 cc non-magnetic plastic cube at 14 levels between ~5.5 cm and ~62 cm in thickness. Alternating field step demagnetization appears to isolate either one or two stable characteristic remanent magnetization (ChRM) components. The lower coercivity component shows clustered ChRM directions at each sampling level and likely retains paleosecular variation. Conversely, the higher coercivity component shows scattered directions. When the observed ChRM directions are compared with the paleosecular variation records for Japan, the duration of the manganese wad deposition appears to have lasted at least 600 years. In other words, the regional hydrothermal system has been active for at least 600 years.

Keywords: Paleomagnetism, Manganese wad, Hydrothermal fluid