

# Altitude effects of hydrogen and oxygen isotopic ratios of precipitation in the northern part of Awaji Island, Japan

# Tsutomu Sato[1]; Taro Nakamura[1]

[1] GSJ, AIST

<http://staff.aist.go.jp/mr.sato/>

Precipitation had been collected by four collectors placed in the northern part of Awaji Island, Japan for two years. The altitudes of the collectors were 440, 240, 35, 5 m above sea level. Hydrogen and oxygen stable isotopic ratios were analyzed for the collected precipitations and spring and well waters in this area. As the results, altitude effects of precipitation were estimated to be -1.1 - -1.7 permil dD/100m and -0.25 - -0.30 permil d18O/100m. It was also cleared that the intercepts of the annual-mean-precipitation lines, showing relationships between altitude and dD or d18O of precipitation, fluctuated in the ranges of 12 permil dD and 1.8 permil d18O without fluctuation of its slopes. Under such the condition, the conventional method using recharge-water line is not appropriate for the estimation of the mean recharge altitude of spring water.

Reference: Sato T. and T. Nakamura, J. Japanese Assoc. Hydrol. Sci., vol.35, no.1, 2005 (in Japanese, Now printing).