

## Hydrochemical Study on Natural Water in Miyakejima Island, Tokyo -

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Catchment area of groundwater were determined by using oxygen and hydrogen stable isotopes, and water quality of natural waters in small volcanic island (Miyakejima island).

Direct rainfall were collected from eighteen stations for two years, as an original input data. The influence of evaporation was calculated by the difference of isotope compositions between direct rainfall and that of springs, because the catchment area of springs were nearby (determined by water quality). Using the results above, the catchment area of groundwater were obtained.

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Catchment area of groundwater were determined by using oxygen and hydrogen stable isotopes, and water quality of natural waters in small volcanic island (Miyakejima island). To determine the catchment area, researcher need to assess the input (the spatial distribution of isotopes in rainfall), the output (isotopes of groundwater), and the influence of evaporation during recharging.

Direct rainfall were collected from eighteen stations for two years, as an original input data. The influence of evaporation was calculated by the difference of isotope compositions between direct rainfall and that of springs, because the catchment area of springs were nearby (determined by water quality). Using the results above, the catchment area of groundwater (well water) were obtained.

Results from this study suggest that (1)delta values of groundwaters showed a spatial change corresponded to those of precipitation. Groundwater in northern part of island had isotopically heavier than those in southern part;(2)generally, mean residence time of springs are relative short compared to water from wells. In addition, catchment area of spring is nearby. These results suggest that springs are base on very regional groundwater system (near surface);(3)The catchment area of well water in northern part is relative lower area. In contrast, those in southern part are extended to more than 400m.

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