

Stream Water Hydrogen and Oxygen Isotope Compositions in Fuji River Basin

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The river water is important source of groundwater in alluvial fan. Objective of this study is to identify the recharge systems and season in the river water, using hydrogen and oxygen isotopes in Fuji river basin.

River water samples were collected from 52 streams in Fuji river basin on May, August and December in 2008. Precipitation samples were collected from May, 2007 to May, 2008 at central of Fuji river basin. The hydrogen and oxygen isotope were analyzed by isotope mass spectrometer with water equilibration system (Sercon, Hydra20-20 and WES).

The wide range fractionation observed in precipitation samples (hydrogen isotopes: $-0 \sim -133$, oxygen isotope: $-0.6 \sim -18.0$), and the constant values in river water samples suggest river water is discharged from groundwater mixed with precipitation in the watershed.

The local meteoric water line on the relationship of oxygen and hydrogen isotope values suggested the high intercept(+15) in winter season, and low intercept(+11) in summer seasons. The intercept of annual meteoric line was +12. The river water samples were plotted on the annual meteoric water line, but several river water samples were plotted on the winter meteoric water line. Decrease in the hydrogen and oxygen isotope value with rise in elevation, suggest the altitude effect.