

Subsurface runoff process during the snowmelt season in a nival mountainous watershed

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d18O and chloride concentration of meltwater from the bottom of snowpack, subsurface water, spring water and streamwater were observed to clarify the subsurface runoff processes during snowmelt season. The groundwater reservoir with the constant d18O value and the constant Cl concentration, exists widely in the watershed. The hydrograph separation can be conducted using d18O at the early snowmelt season and Cl concentration at the active snowmelt season. The average contribution of the old water to streamwater was about 80% throughout the snowmelt season.