

Mean residence time estimation of baseflow in a small forested catchment with a thick weathered layer

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It has been pointed out that groundwater infiltrates in the weathered bedrock and it has large influence on water quality formation of springwater or stream water in recent years. Generally, groundwater slowly flows into stream channel, and it forms mainly the baseflow component of hydrograph. The mean residence time of water affects conditions for chemical reactions, such as contact time of a rock and water, and it becomes an important index in order to clarify the weathering process inside a watershed. The mean residence time of stream water is indispensable information in order to predict the response of a watershed scale to mixing of a contaminant, change of land use, etc. In this research, in order to estimate mean residence times of groundwater and baseflow, the seasonal variations of the stable isotope ratios in rainwater, groundwater, springwater, and baseflow water were investigated.