

## **Oxygen and hydrogen isotopic characterization of precipitation in four South Korean cool temperature forests**

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Understanding the isotopic composition of precipitation in a forested catchment is critical for ecohydrological studies. Changes in the water isotopes of rainfall were assessed during its passage through the canopy in throughfall, and the effect of different forest stands on the isotope composition of throughfall. In a cool temperate forest in Korea, rainfall and throughfall samples collected under *Pinus densiflora* (red pine), *Castanea crenata* (chestnut), *Robinia pseudoacacia* (black locust) and mixed stands (mix of these three species) were analyzed for oxygen and hydrogen isotopes. Throughfall  $\delta^{18}\text{O}$  and  $\delta\text{D}$  were enriched compared to rainfall. A difference of  $\delta^{18}\text{O}$  and  $\delta\text{D}$  among throughfall may be related to the difference in interception–storage capacity of different species due to dissimilar canopy characteristics. Since isotopic composition of throughfall and rainfall are different due to canopy isotopic effects, use of rainfall isotopic signatures for ecohydrological studies in forested ecosystem can lead to biases.