

## Establishing the stable oxygen isotope signature of precipitation in the Central Highlands of Vietnam for application to dendroclimatology

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Stable oxygen isotope ratios offer an approach to extracting climate information from tropical trees even when a given species lacks a strong climate signal in its ring widths alone. The oxygen isotope ratio of cellulose in the stem of a tree reflects the original isotopic signature of precipitation and in tropical regions this is largely controlled by the amount of rainfall. This proxy offers a potentially powerful approach to quantitatively estimating past monsoon variability from tropical trees. Here, we seek to establish weekly meteoric water collection for the purposes of identifying temporal patterns of precipitation oxygen isotope ratios, their association with climate, and the precise magnitude of the local 'amount effect' in the Central Highlands of Vietnam. With the logistical support of our local collaborators, we will deploy and maintain three hybrid cumulative precipitation collectors especially designed to yield samples with no evaporative enrichment for accurate stable isotope analysis. These data will allow for quantitative estimates of past rainfall variability and mechanistic modeling of cellulose composition from long-lived conifers in this region.