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Dynamics of Evapotranspiration Partitioning with Concurrent Subcanopy Flux Measurements in a Montane Sierra Nevada Forest

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The component fluxes of Evapotranspiration (ET) cannot be directly measured at the ecosystem scale, and standardized approaches to partition the components fluxes of eddy-covariance (EC) measured ET are currently not available. Concurrent measurements of below and above canopy EC in forests provide a promising approach. However, our understanding of the performance of such measurements is still very limited as questions remain regarding the spatial variability, canopy (de-)coupling, and the temporal dynamics of subcanopy EC measurements. To address these challenges, we measured and partitioned ET with two subcanopy and concurrent above canopy EC towers in a montane forest at Sagehen Creek (California), having a pronounced Mediterranean climate. We analysed these paired measurements for 15 months and will present the spatial and temporal dynamics of this flux partitioning approach. Based on these results, we will discuss the relevant process controls, methodological limitations and implications for a wider application of such concurrent measurements.