



## **Subcanopy Flux Measurements in Forest Ecosystems**

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Eddy-covariance measurements of carbon dioxide, water vapour and energy provide direct evidence for the biosphere-atmosphere exchange at the ecosystem scale. Such continuous measurements are typically performed in the atmospheric surface layer above the canopy and integrate fluxes over the entire ecosystem within the footprint. Forest ecosystems, however, have complex vertical structures composed of several layers with different functional properties that are represented to a limited extent by above canopy measurements. Concurrent eddy-covariance measurements below canopy (subcanopy) can provide valuable insights on (1) understory processes, (2) their contributions to total ecosystem fluxes, and (3) the partitioning of component fluxes. Accordingly, there is a large potential for including standardized subcanopy forest measurements into large-scale monitoring networks such as FLUXNET, ICOS or NEON. However, our understanding of the performance and limitations for such measurements is still very limited. To gain a better understanding of subcanopy measurements, we conducted (I) a survey across FLUXNET on their availability, and (II) a literature review on published subcanopy measurements. We will present the results from our survey, summarize the current process understanding (from a literature review), and discuss research priorities for concurrent below and above canopy eddy-covariance measurements.