Research Unit Forest Dynamics - colloquium

Date: 26.09.2019

Time: 10:00

Room: Flury

Duration: 25 minutes

Author: John Marshall, Swedish University of Agricultural Sciences, Uppsala

Title: Estimating canopy photosynthesis from sapflux and d13C: the key role of mesophyll conductance

Abstract:

GPP estimates the rate at which vegetation removes CO2 from the atmosphere, an important variable in greenhouse-gas budgets. Until recently, GPP estimates were derived primarily from models parameterized using eddy covariance data, with few alternative means of testing the predictions. We have used phloem d13C combined with sapflux data to generate seasonal estimates of per-tree GPP, then scaled these up to stands and annual budgets. We have spent considerable effort to find a simple means of estimating mesophyll conductance, which serves as a critical adjustment in our method. I will describe how we estimated mesophyll conductance and why it matters, and then compare the scaled estimates of GPP against estimates from eddy covariance data.