

**Synthesizing climate and litter decomposition interactions on soil carbon fluxes**

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Soil carbon respiration, i.e. the flux of carbon dioxide from the soil to the atmosphere, is determined by climate variables and soil organic carbon quality. The quality of soil organic matter is significantly affected by litter inputs and litter decomposition rates. Moreover, litter decomposition may contribute directly to soil carbon fluxes and is affected in turn by climate.

Although litter decomposition rates are ultimately linked to soil carbon respiration fluxes, they have hitherto not been quantitatively compared (neither stand-alone nor in interaction with climate). We will bring change into this situation by combining databases on litter decomposition with databases on soil carbon fluxes. Litter decomposition databases are available at the VU Amsterdam: one on global patterns in litter decomposition as related to litter traits (Cornwell et al. 2008) and to climate variables (van Bodegom; unpublished) and one on litter decomposition rates across (sub-)arctic environments as affected by climate change and growth forms (Cornelissen et al. 2007). At the University of Antwerp a large database on soil carbon fluxes across different climates in Europe (Luyssaert et al. 2008) is available.

During this short visit, a synthesis of these climate related databases will be made (by linking fluxes through the vegetation composition of the sites included) to i) test the correspondence of these fluxes across sites, ii) to predict how climate change may affect soil carbon fluxes through changes in litter quality.

This visit will take place in two parts. During the first visit of one week by Wouter Dieleman to Amsterdam, the databases will be linked and preliminary analyses will be run. Analyses will be concluded at the individual places. During the second visit by Peter van Bodegom to Antwerp, a draft of a scientific paper will be prepared.1