



## **Dynamics of carbon fluxes above a hemiboreal mixed forest**

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Forest ecosystems are a major part of the biosphere and control land surface-atmosphere interactions. They influence atmospheric composition and climate significantly being sources and sinks of trace gases and energy.

Mixed stands of both coniferous and deciduous tree species are characterized by greater seasonal variability of forest microclimate, canopy shape and density, length of growing season and plant activity and higher biota diversity and compared to pure boreal forests. These factors coupled with physical environment (atmospheric and meteorological conditions, soil properties) influence CO<sub>2</sub> exchange between forest and the atmosphere.

To explore complex interactions within ecosystem-atmosphere continuum of hemiboreal forest SMEAR Estonia station was established in Järvselja, Estonia. A 24 m height scaffolding tower located in a forest stand dominated by Norway spruce (*Picea abies* (L.) Karst.) with co-domination of Silver birch (*Betula pendula* Roth.) and Black alder (*Alnus glutinosa* L.) was used to study eddy-covariance fluxes of CO<sub>2</sub>.

We present the results from the first continuous EC measurements over a hemiboreal mixed forest performed in 2011-2012. The focus of the study is on diurnal and annual dynamics of carbon fluxes and the influence of main environmental drivers.