Project Database of ICP Forests
PROJECT DESCRIPTION

PROJECT INFORMATION

Project title: Percentage of stemflow from throughfall and ist relevance for the calculation of total deposition

Project ID: 29

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The aim of this project is to gain knowledge on the relations between stemflow and throughfall and its relevance for calculation of total deposition with canopy budget models. The objectives of the study are

- to demonstrate the relevance of stem flow measurements
- to calculate total deposition with canopy budget models.

The atmospheric deposition of sulphur (S) and nitrogen (N) compounds affects forest ecosystems through several processes. Quantification of atmospheric deposition is important to investigate these processes, but also difficult because of its spatial variability within the plot and because of canopy exchange processes.
Applying filtering approach to bulk deposition throughfall and stemflow measurements have become the standard method for quantification of atmospheric deposition in ICP Forests (ICP Forests, 2010). However, an evaluation of the percentage of stemflow from total throughfall and its relevance for the calculation of total deposition with the filtering approach or slightly differing canopy budget models as described by Ulrich (1983), Bredemeier (1988), Draaijers et al. (1996) or Staelens et al. (2008) has not been done with recent data yet.

The objectives of the study are to do for the major elements (S, N, Ca, Mg, K) based on the ICP-Forests atmospheric deposition data

- a calculation of the percentage of stem flow from the total throughfall
- to calculate total deposition with the mentioned canopy budget models with and without consideration of stemflow.

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