



Quantification of Alpine grassland CO₂ budgets

M.J. Zeeman (1), W. Eugster (1), R. Hiller (2), N. Buchmann (1)

(1) Institute of Plant Sciences, ETH Zurich, Switzerland, (2) Institute of Geography, University of Bern, Switzerland

Very few studies have aimed at quantifying CO₂ exchange of high elevation ecosystem in Alpine areas. Topographic variation and steep slopes make a suitable site selection difficult for eddy covariance flux measurements. Nevertheless, the understanding of CO₂ fluxes at all elevations in Alpine areas is essential for determining potential impacts of climatic change on the carbon cycle.

At three research locations in Switzerland we have measured CO₂ fluxes by eddy covariance technique on managed grassland at 400, 1000 and 2000 m elevation, starting during the 2005 growing season.

For the first time we have made an attempt to quantify the CO₂ budgets along such an elevational gradient. We will discuss how differences in grass harvesting regimes, the presence or absence of grazing cattle and weather anomalies impact the seasonal budgets at the different elevations.