

Seminar: Thursday December 2, 15:15
Biochemistry library (+1, Bldg II, Kemicentrum)

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NMR unravels global metabolic regulation

Abstract:

Restraining the size of chemical fluxes and unravelling the mechanisms that govern them is vital for understanding complex systems, ranging from cellular turnover to global biogeochemistry. A central challenge in global change research is how natural and agricultural ecosystems will respond to ongoing environmental changes. Changes in biogeochemical fluxes can have a major impact on the global carbon cycle, and on agricultural productivity and hence food safety.

NMR is an underexploited technique in biogeochemistry, in particular quite little use has been made of modern techniques developed in biomolecular NMR. We use NMR in a range of projects to detect metabolites and to study biogeochemical fluxes and their regulation.

Examples include the speciation of organic phosphorus compounds in soils, microbial metabolism in frozen soils, sources and transformation of persistent pollutants, and to detect slow acclimation of plants to increasing atmospheric CO₂.