BayCEER Kolloquium

Lectures in Ecology and Environmental Research

WS 2016/17

UNIVERSITÄT BAYREUTH

Donnerstag/Thursday
10.11.2016
12:00 in H6, GEO

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Investigating N_2O emissions from plants using high resolution measurements of N_2O mixing ratio and isotope signatures

The greenhouse gas nitrous oxide (N_2O) increased from 270 to 324 ppb (i.e. 20 %) since preindustrial times. Owing to the spatial and temporal variability of N_2O emissions, global emission estimates are affliced with a high uncertainty. The biggest natural source of N_2O are soils, then followed by the oceans. Despite it is known for several years that also plants and cryptogamic covers emit N_2O, vegetation has not yet been considered as a source of N_2O in the global budget.

With simultaneous measurements of N_2O and CO_2 fluxes on sterile and non-sterile plants we show that plants are a considerable source of N_2O. As shown for lichens and mosses, N_2O emissions were related to respiration rates over a broad range of environmental conditions. A robust coupeling of N_2O emission rates to respiration allows the global estimation of plant-derived N_2O emissions based on respiration data.

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The lectures are an inter-disciplinary platform for students, junior and senior scientists. Abstracts and further information: www.bayceer.uni-bayreuth.de/kolloquium/