

Soil N₂O chamber inter-comparison campaign 2014, Hyytiälä, Finland

As a part of the InGOS activities (Task 5.2, QA/QC chamber flux measurements), an intercomparison/calibration campaign of soil chamber systems for N₂O will be organized by University of Helsinki (UHEL). The campaign is open also to participants external to InGOS.

Background

Flux measurements by chamber technique are associated with systematic and random uncertainties. The major sources of flux uncertainty are related to systematic errors of the single chamber measurement, as well as errors associated with the large spatial variability of the soil source/sink and low spatial coverage of the measurements. Systematic errors of CO₂ chambers have been earlier quantified by Pumpanen et al. (2004), and systematic errors of static CH₄ chambers by Pihlatie et al. (2013) and Christiansen et al. (2011).

Objectives

In general, we aim at gaining more knowledge on the errors related to N₂O chambers, and also in providing methods to control them. Participants will bring their own chambers for sensitivity test of systematic errors related to chamber leaking, and pressure changes caused by gas storage in the soil underneath the chamber. The sensitivity of the chambers to errors will be estimated by combining data from different chambers into one dataset. Ideas how to deal with the errors will be further developed during the campaign and tested using the data set. We expect to publish peer reviewed publications based on the campaign and the participants are invited to participate as (co)authors.

Location and Logistics

The campaign will be organized at Hyytiälä Forestry Field Station, Finland, (<http://www.helsinki.fi/hyytiala/english/index.htm>). The preparations for the campaign in Hyytiälä will begin the 2nd of June 2014. The actual campaign will begin the 16th of June 2014 and will end in July, depending on the number of participants. We will provide needed laboratory instrumentation and devices (automatic N₂O gas analysers, calibration tank, fans, etc). Accommodation, meals, sauna, desk space and

WiFi connection are available at the station at estimated cost of about 60€ / day per participant. Be prepared to stay in Hyytiälä for 2 to 5 days.

Participation

Please register to the campaign by sending an email to Janne Korhonen (janne.fj.korhonen@helsinki.fi) **no later than Friday 7th of March 2014**. Please write in the mail what kind of chamber you would be bringing, give physical dimensions and working principle (static, dynamic, flow-through, non-flow-through, vented, non-vented), and a possible reference where the chamber has been described. The number of participants is limited and the participants will be mainly selected based on the chamber properties. In the email, include which dates from June 16th to end of July 2014 could be possible for your participation. Also, please indicate if you have special experience or ambition towards uncertainties related to chamber measurements.

Participants can apply for Transnational access (TNA) funds to cover travel, subsistence and shipment costs via the InGOS website (see http://www.ingos-infrastructure.eu/?page_id=221). Please contact the InGOS Station's PI Ivan Mammarella (ivan.mammarella@helsinki.fi) and Janne Korhonen (janne.fj.korhonen@helsinki.fi) for more details.

Local organizers team: Janne Korhonen, Mari Pihlatie, Jukka Pumpanen

References:

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