Questions (specially for chambers):

Imagine you have dark chambers deployed on a grassland for CO2 measurements, with the whole aboveground vegetation inside the chamber. What do you measure in the dark chamber?

- Gross primary productivity
- Net primary productivity
- Net ecosystem exchange
- **Total ecosystem respiration**
- Soil respiration

Imagine you have transparent chambers deployed on a grassland for CO2 measurements, with the whole aboveground vegetation inside the chamber. What do you measure in the transparent chamber?

- Gross primary productivity
- Net primary productivity
- **Net ecosystem exchange**
- Total ecosystem respiration
- Soil respiration

What is the main difference between static (non-steady state) and dynamic (steady state) chambers?

- Static chambers are small, dynamic are big.
- Static chambers are for the field, dynamic for the lab
- **Static chambers are gas-tight, dynamic have a continuous gas-flow through**
- Static chambers are dark, dynamic are transparent

Imagine you have an experiment with plots having different Nitrogen application rates. What would you use to estimate soil NOx fluxes?

- Static chambers
- **Dynamic chambers**
- Eddy covariance
- Integrated horizontal flux
- Remote sensing

Which of the following are pros of the field chambers as a method for estimating GHG fluxes?

- **Appropriate for plot designs**
- They cover a large surface (> 100 m2)
- Estimations are at the ecosystem scale
- **Versatile**

Which of the following are cons of the field chambers as a method for estimating GHG fluxes?

- **Small surface covered (usually < 1 m2)**
- They require power supply
- The terrain needs to be homogeneous
- Involve the use of high-tech, fast analyzers

Imagine the following situation: in a field fertilized with 150 kg N ha^{-1} a^{-1}, the emissions are 6 kg N_2O-N ha^{-1} a^{-1}. The emissions in the same field without fertilization are 1 kg N_2O-N ha^{-1} a^{-1}. What is the N_2O emission factor of the fertilizer applied?

- 1%
- **3.33 %**
- 4 %
- 30 %

What strategies can be applied to account for spatial variability of the GHG fluxes when measuring with chambers?

- Placing the chambers close to each other, to facilitate sampling
- **Placing the chambers in representative spots of the field, including stratification if needed**
- Placing the chambers in those spots where high emissions are expected
- Distributing the chambers uniformly (fixed distances) across the field

What strategies can be applied to account for temporal variability of the GHG fluxes when measuring with chambers?

- **Measuring more intensively during periods when events triggering pulses occur (e.g. precipitation, fertilization events), but covering also periods without pulses**
- Measuring always the same day of the week
- Measuring only a few days a year (e.g. every two months) but several times within a day.
- Measuring preferentially in summer
- Measuring only a few days a year (e.g. every two months) but with a large number of chambers