4th EAFES International Congress
Sangju Campus, KNU, Korea, 13-17 September, 2010

N_2O emission and consumption in three different forest sites in the Haean Basin (South Korea)

preliminary data, 2010

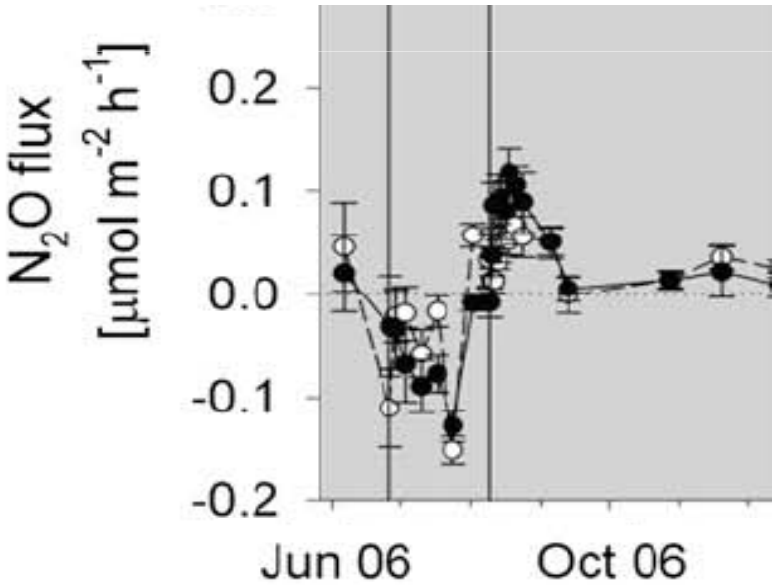
Sina Berger [1], Hojeong Kang [2] & Gerhard Gebauer [1]

1) University of Bayreuth, Laboratory of Isotope Biogeochemistry, Germany
2) Yonsei University, School of Civil and Environmental Engineering, Korea

"Drought turns a Central European Norway spruce forest soil from an N_2O source to a transient N_2O sink"

Stefanie Daniela Goldberg, Gerhard Gebauer,
Global Change Biology, April 2009

Throughfall exclusion

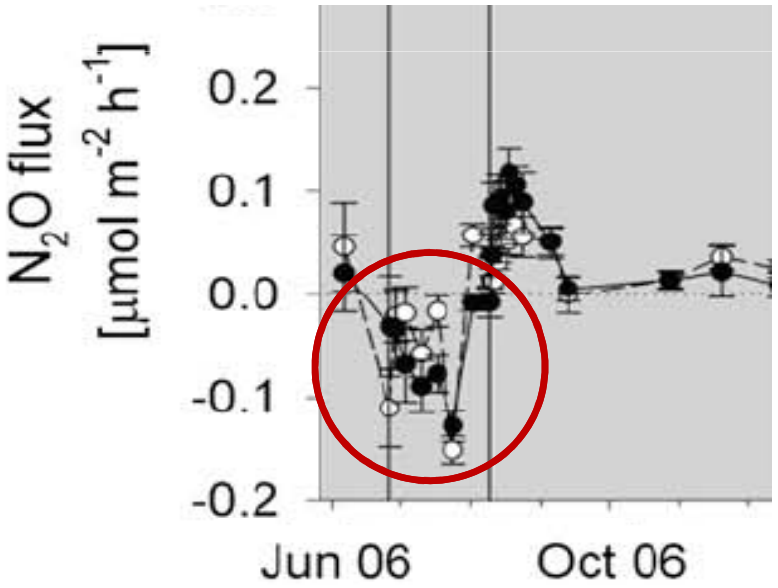


Stefanie Daniela Goldberg, Gerhard Gebauer, Soil & Biogeochemistry, 15th of July 2009

"Drought turns a Central European Norway spruce forest soil from an N_2O source to a transient N_2O sink"

Stefanie Daniela Goldberg, Gerhard Gebauer,
Global Change Biology, April 2009

Throughfall exclusion



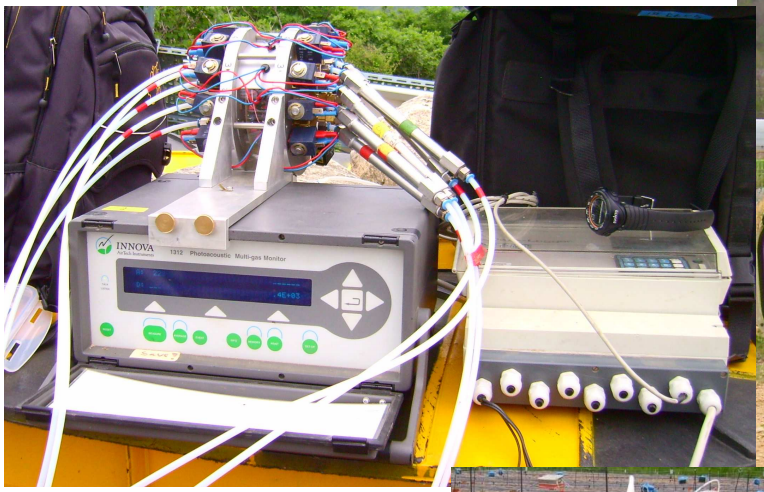
Stefanie Daniela Goldberg, Gerhard Gebauer,
Soil & Biogeochemistry, 15th of July 2009

Methods and Materials

- Closed chambers in conjunction with a photoacoustic trace gas analyzer
- N_2O concentration and N- and O isotope signature along soil profiles

Methods and Materials

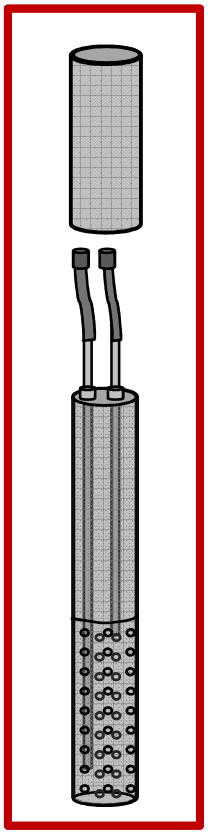
- Closed chambers in conjunction with a photoacoustic trace gas analyzer
- N_2O concentration and N- and O isotope signature along soil profiles

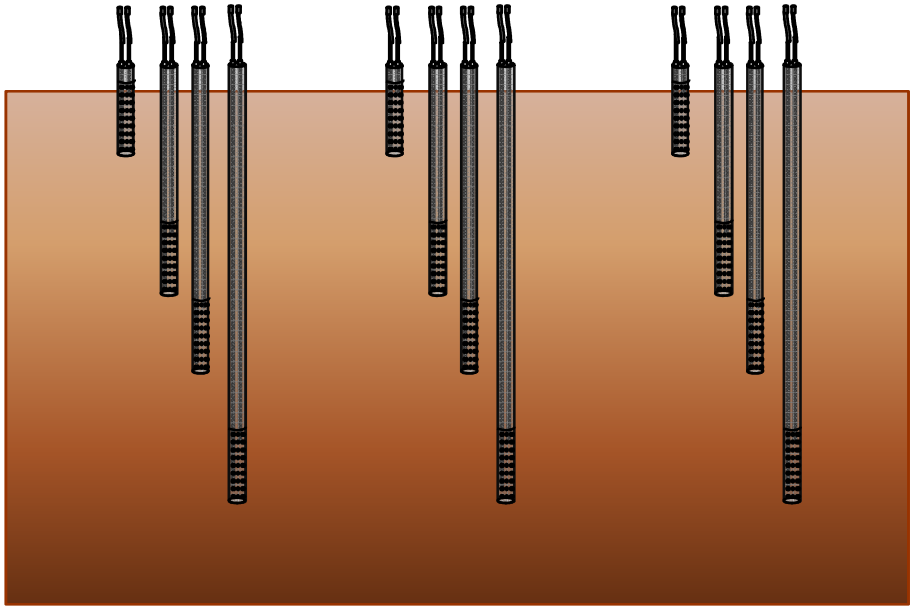


TERRECO

Methods and Materials

- Closed chambers in conjunction with a photoacoustic trace gas analyzer
- N_2O concentration and N- and O isotope signature along soil profiles

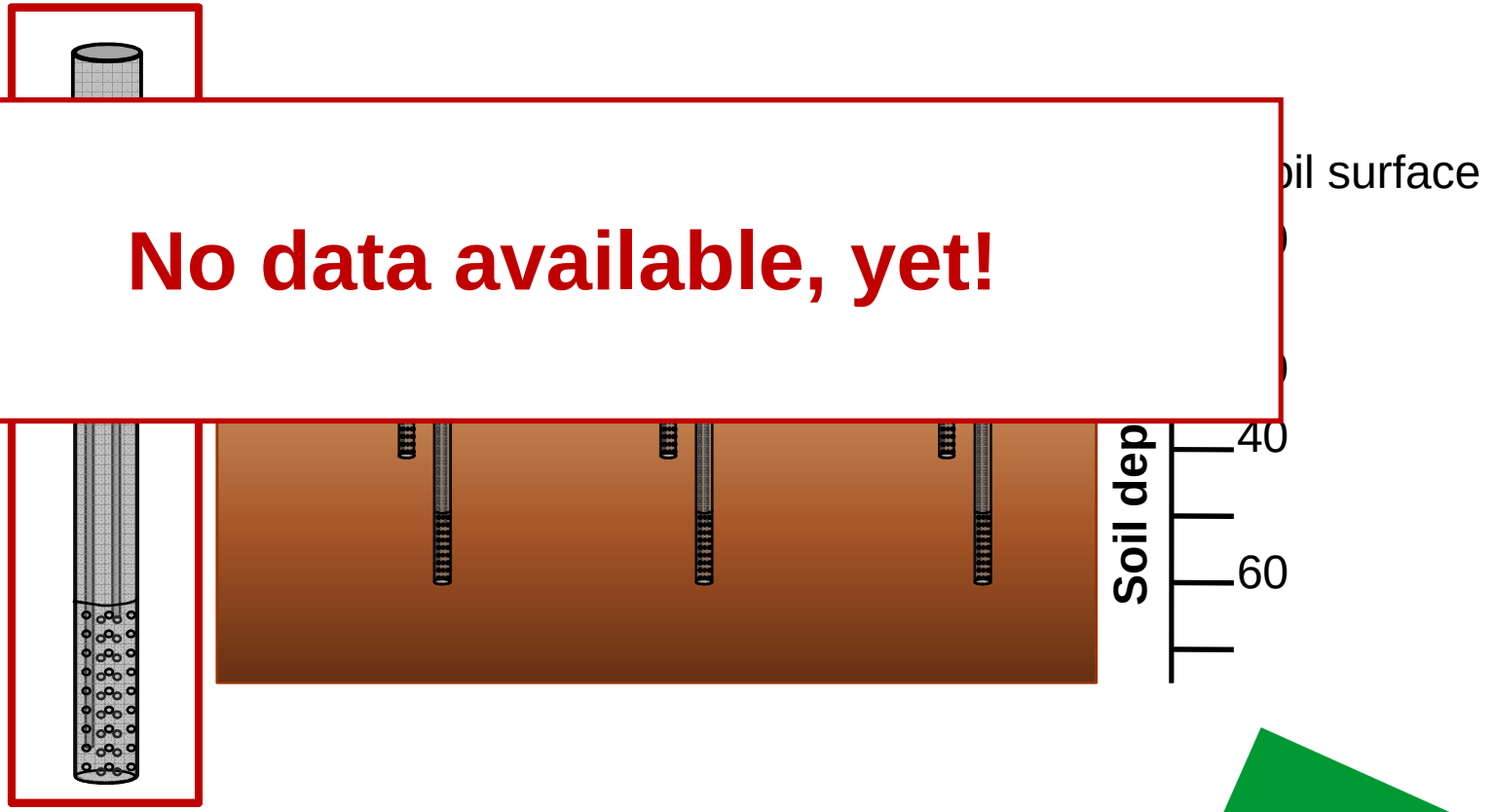




TERRECO

Methods and Materials

- Closed chambers in conjunction with a photoacoustic trace gas analyzer
- N_2O concentration and N- and O isotope signature along soil profiles

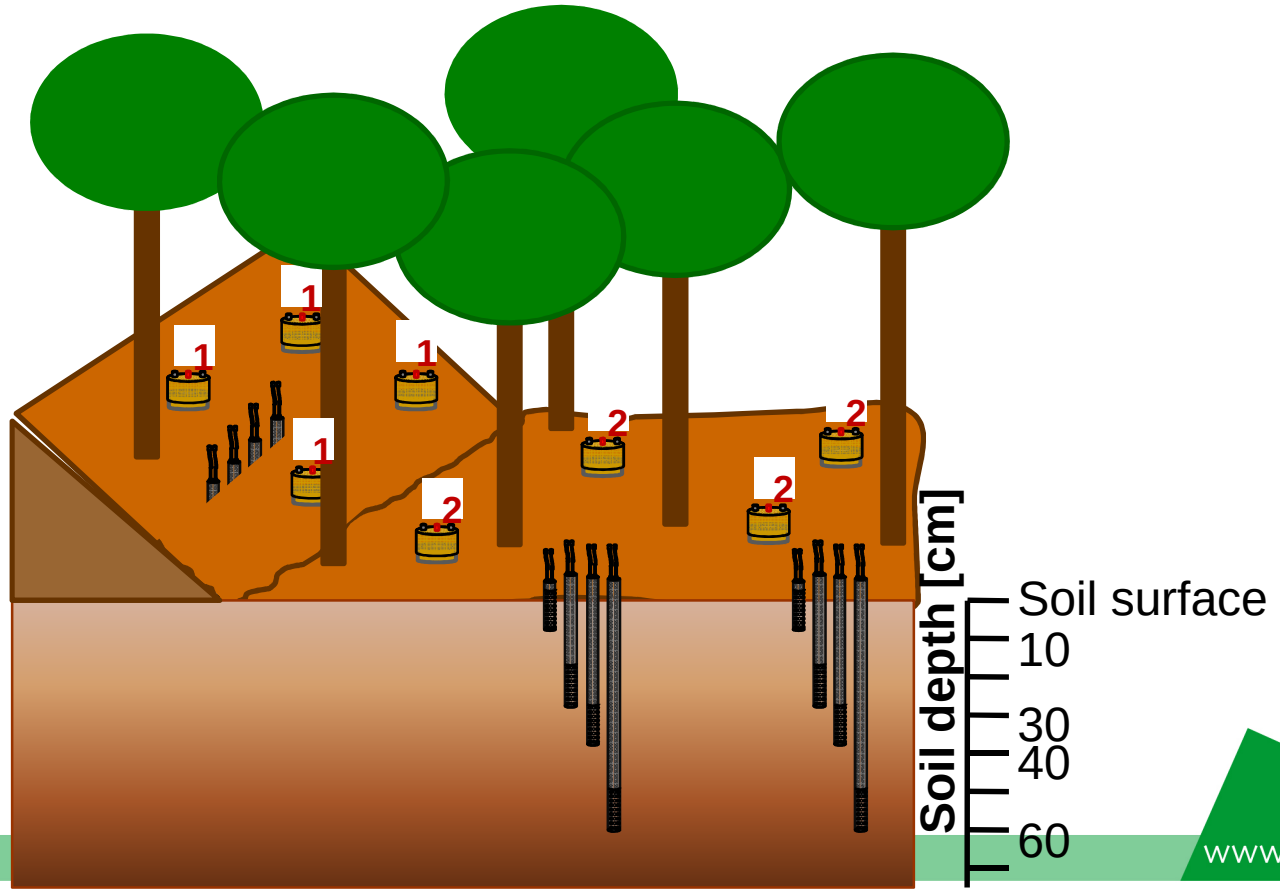


No data available, yet!

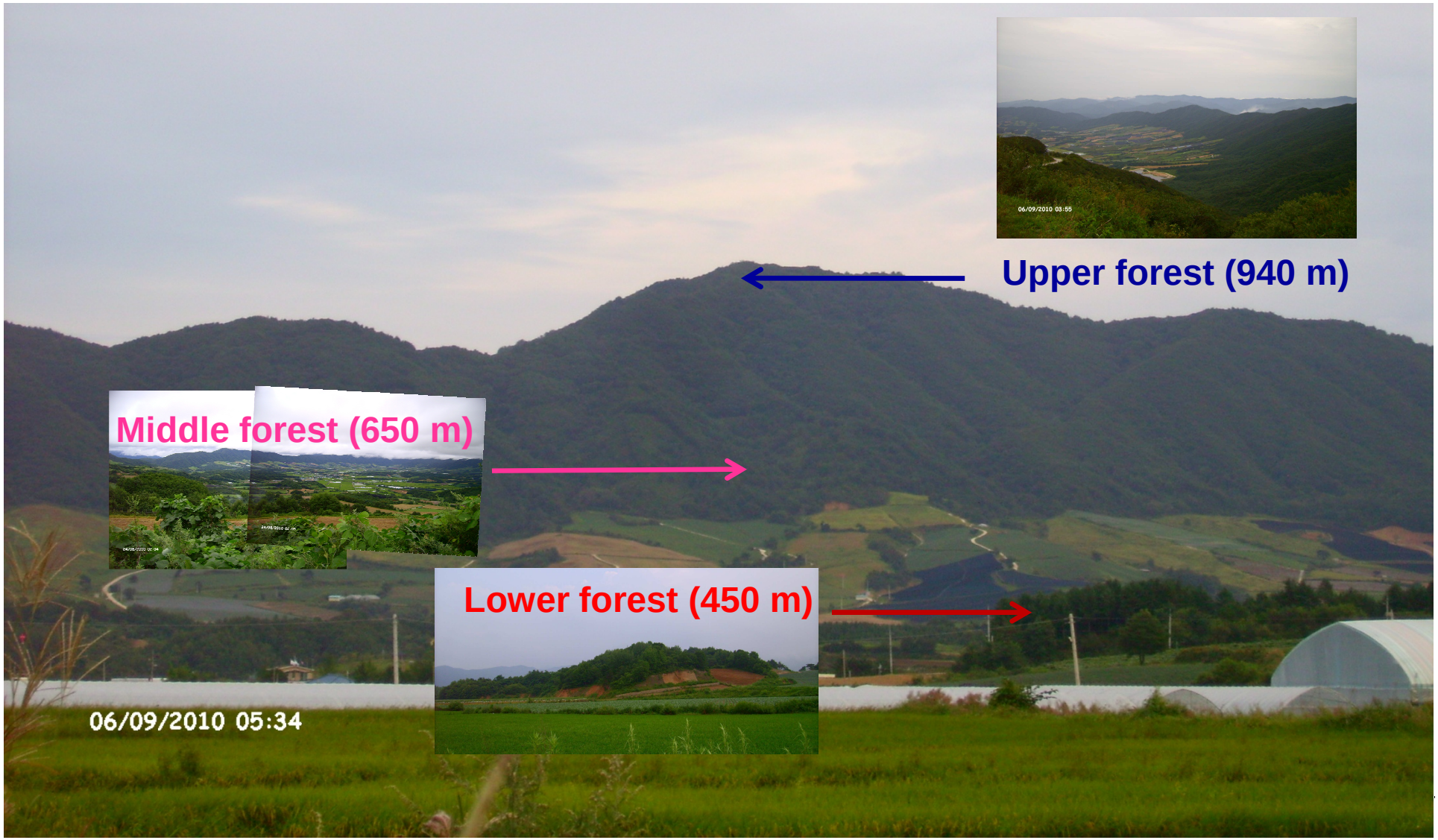
TERRECO

Methods and Materials - summary

- Closed chambers in conjunction with a photoacoustic trace gas analyzer
- N_2O concentration and N- and O isotope signature along soil profiles



Three Study Sites

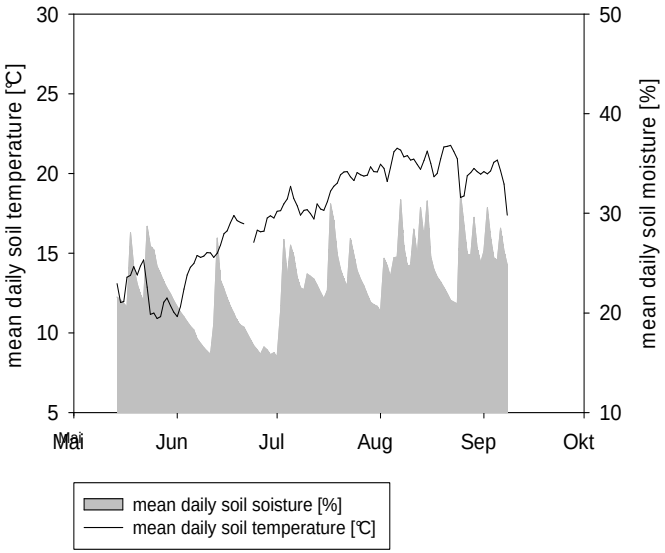


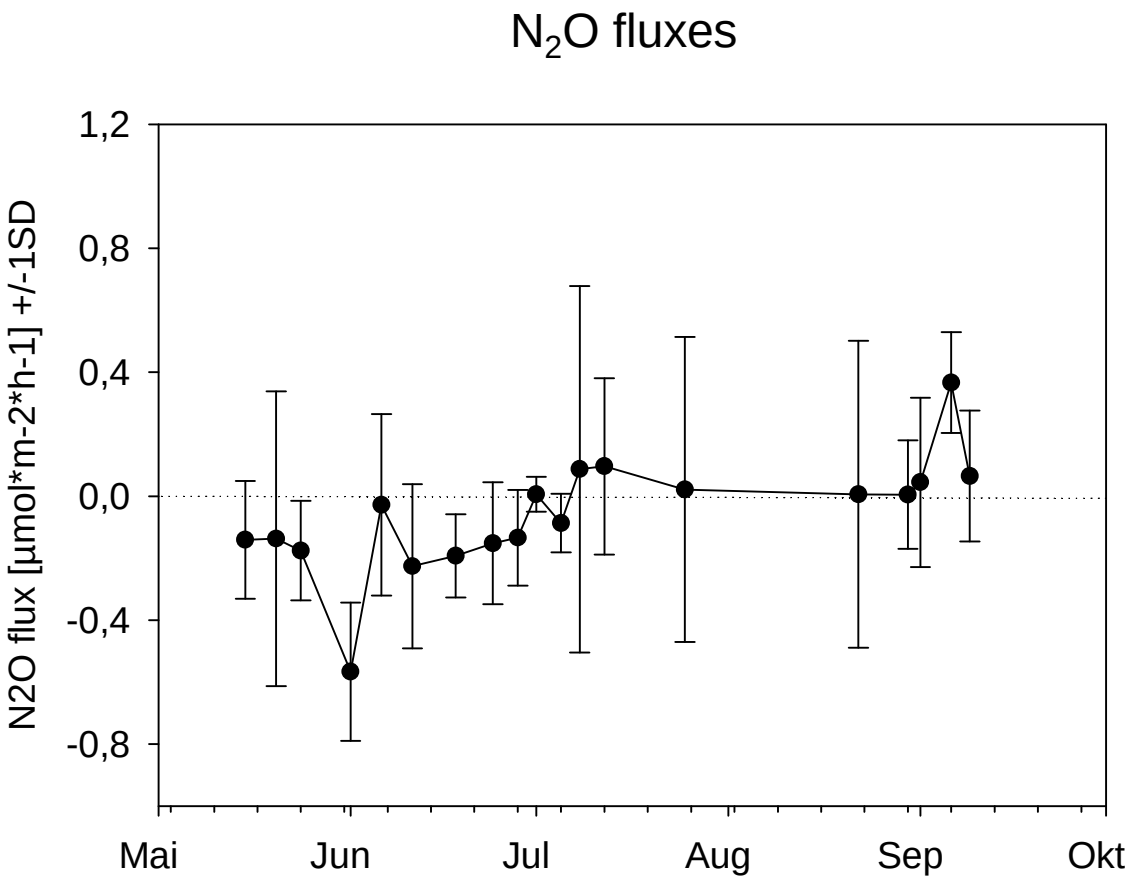
Results

Middle Forest (650 m)

Results

Middle Forest (650 m)

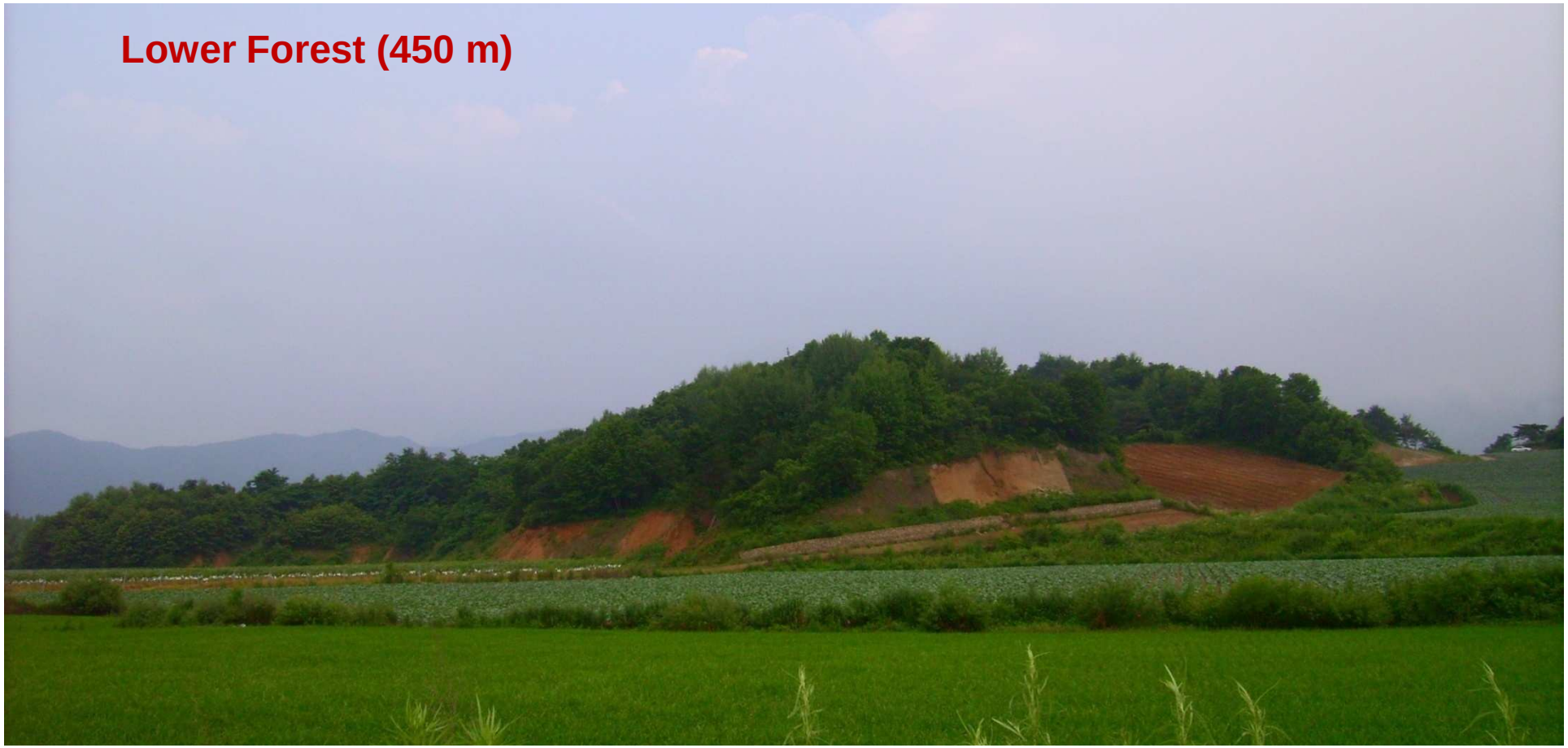




N_2O fluxes

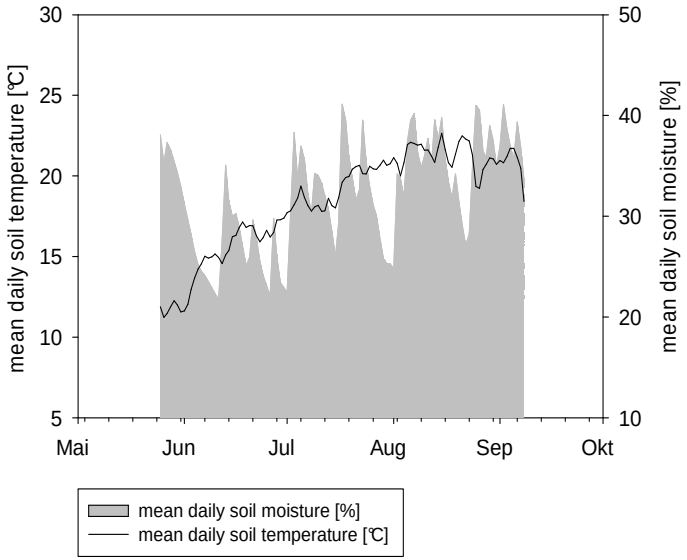
Results

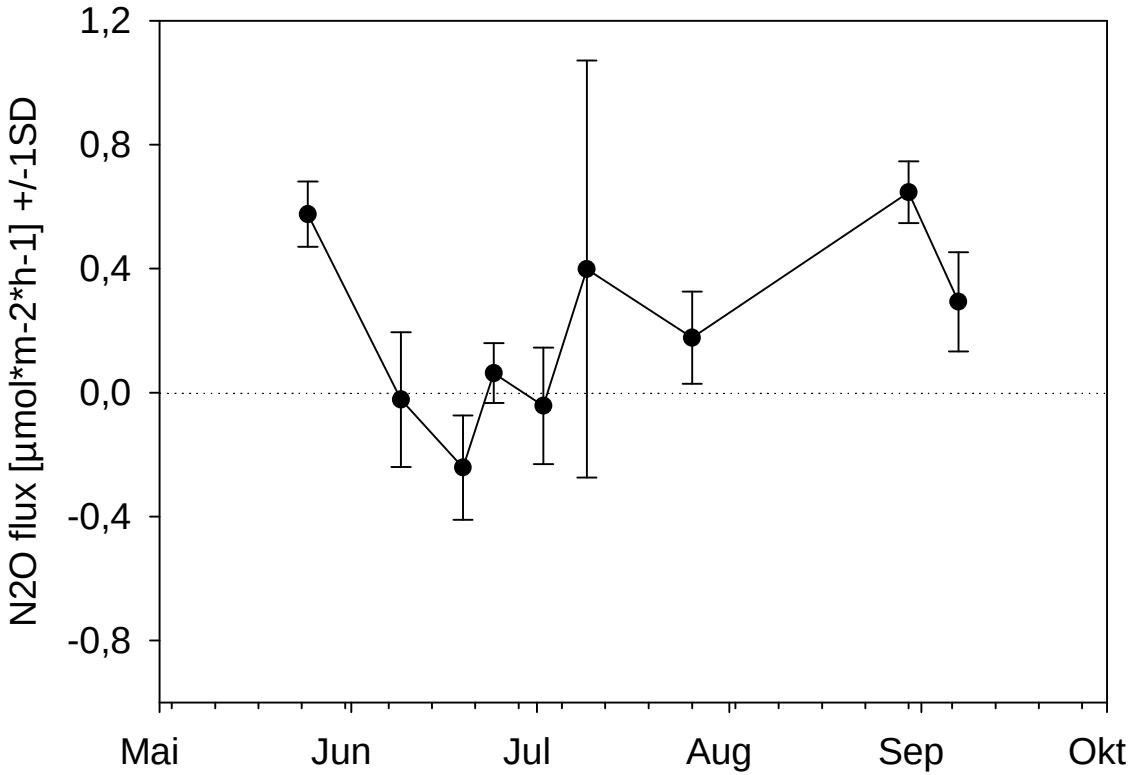
Lower Forest (450 m)



Results

Lower Forest (450 m)

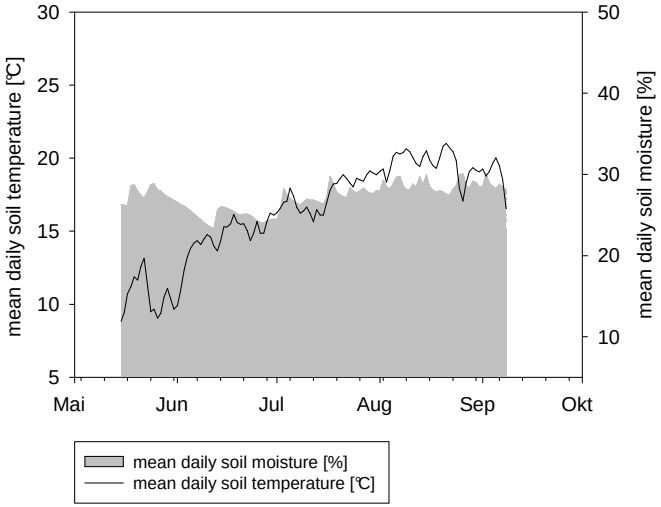


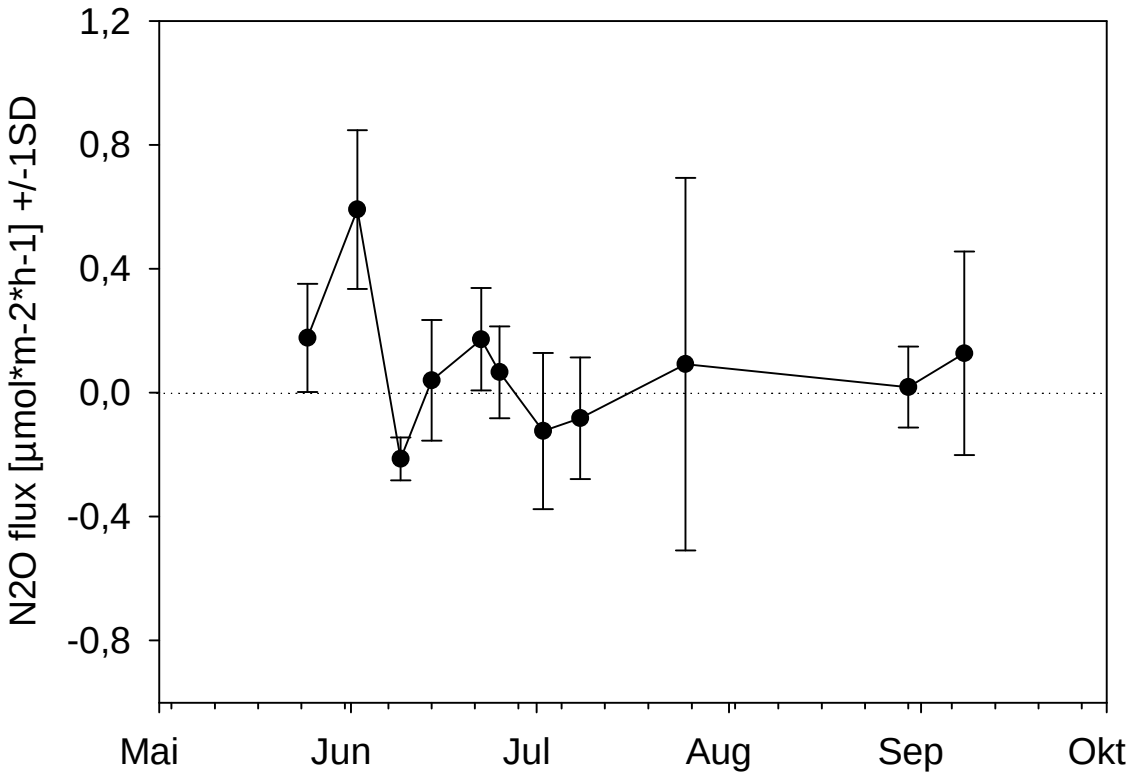


Results

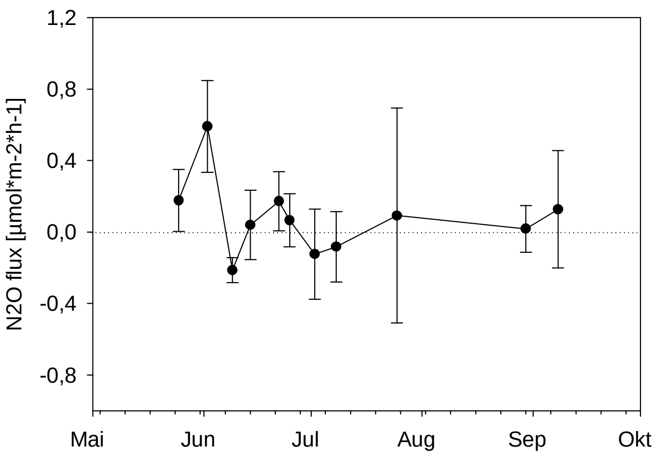
Results

Upper Forest (940 m)

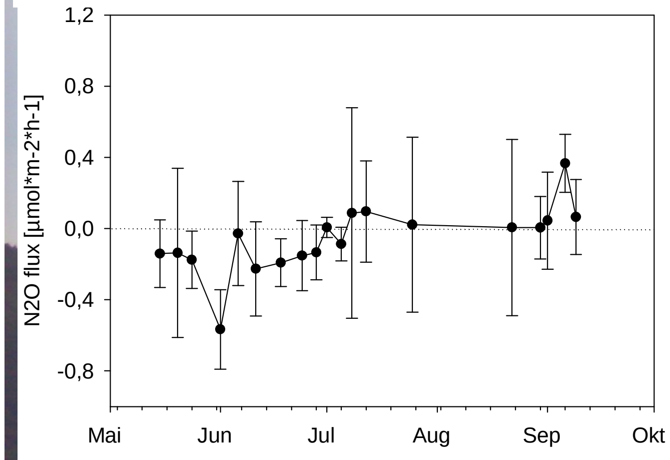




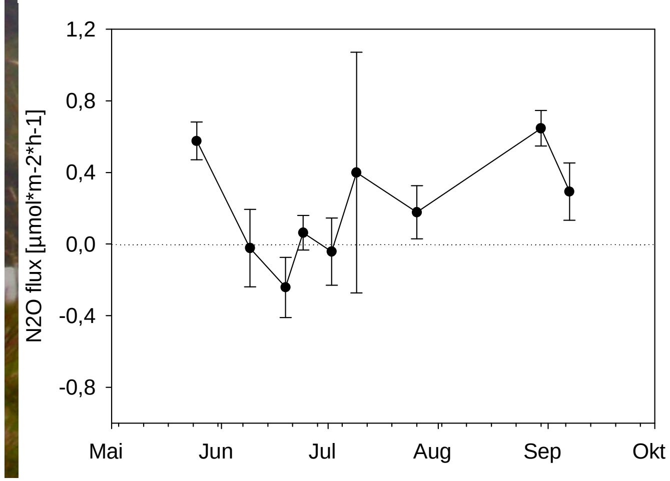
Summary



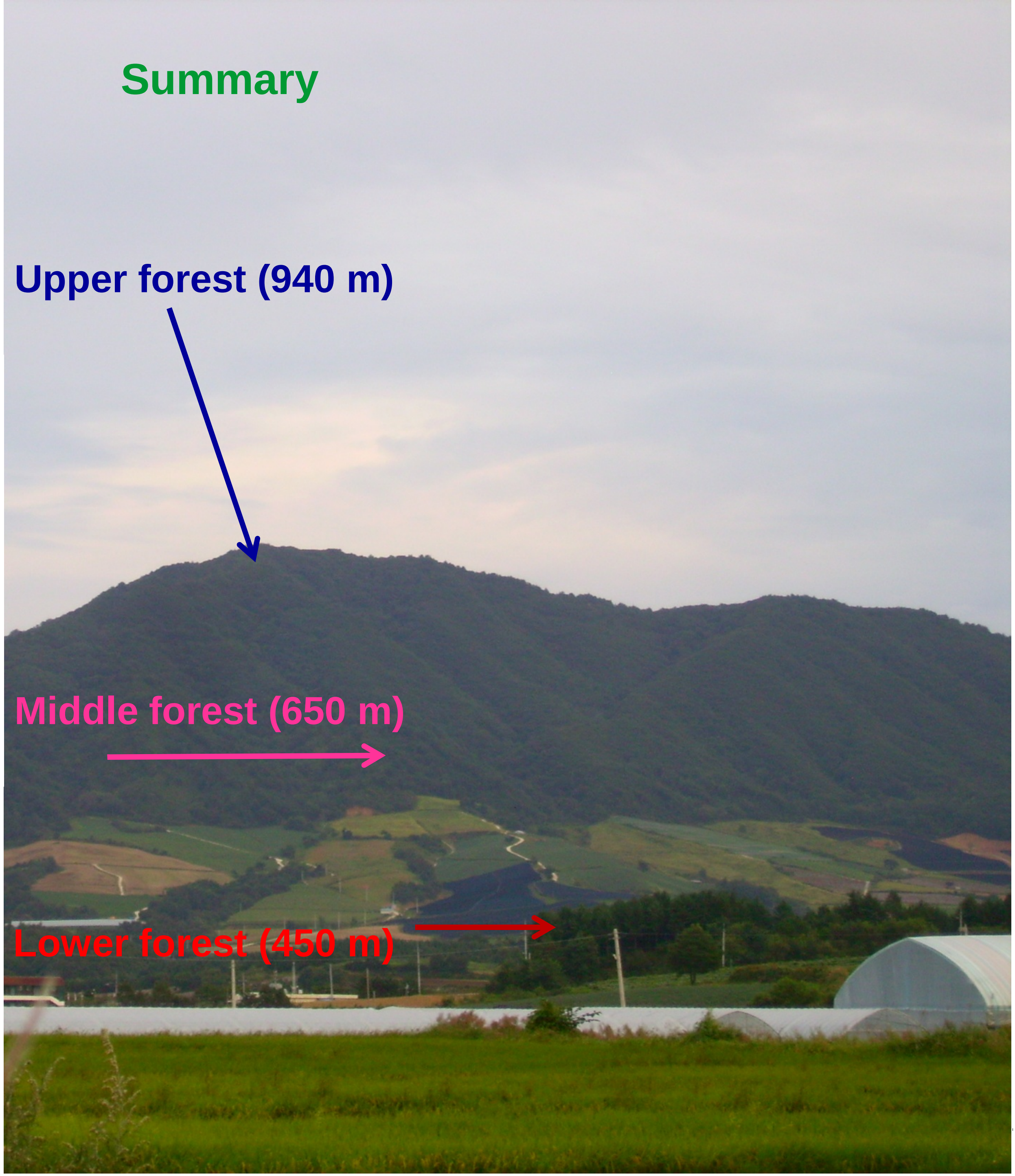
N2O flux [µmol*m-2*h-1]
1,2
0,8
0,4
0,0
-0,4
-0,8
Mai
Jun
Jul
Aug
Sep
Okt



N2O flux [µmol*m-2*h-1]
1,2
0,8
0,4
0,0
-0,4
-0,8
Mai
Jun
Jul
Aug
Sep
Okt



N2O flux [µmol*m-2*h-1]
1,2
0,8
0,4
0,0
-0,4
-0,8
Mai
Jun
Jul
Aug
Sep
Okt



Upper forest (940 m)
Middle forest (650 m)
Lower forest (450 m)

Thanks a lot to:

- Eunyoung Jung!!

Thank you for your attention!!