

Main Focus:

Micrometeorological derived surface fluxes of heat, water vapour and greenhouse gases

Major Activities:

- harmonising data evaluation strategies
- compiling a strategic document on QA/QC guidelines for eddy covariance measurements (talk Mauder et al.)
- optimising field site measurement systems set-up

Achived in:

- 3 joint meetings

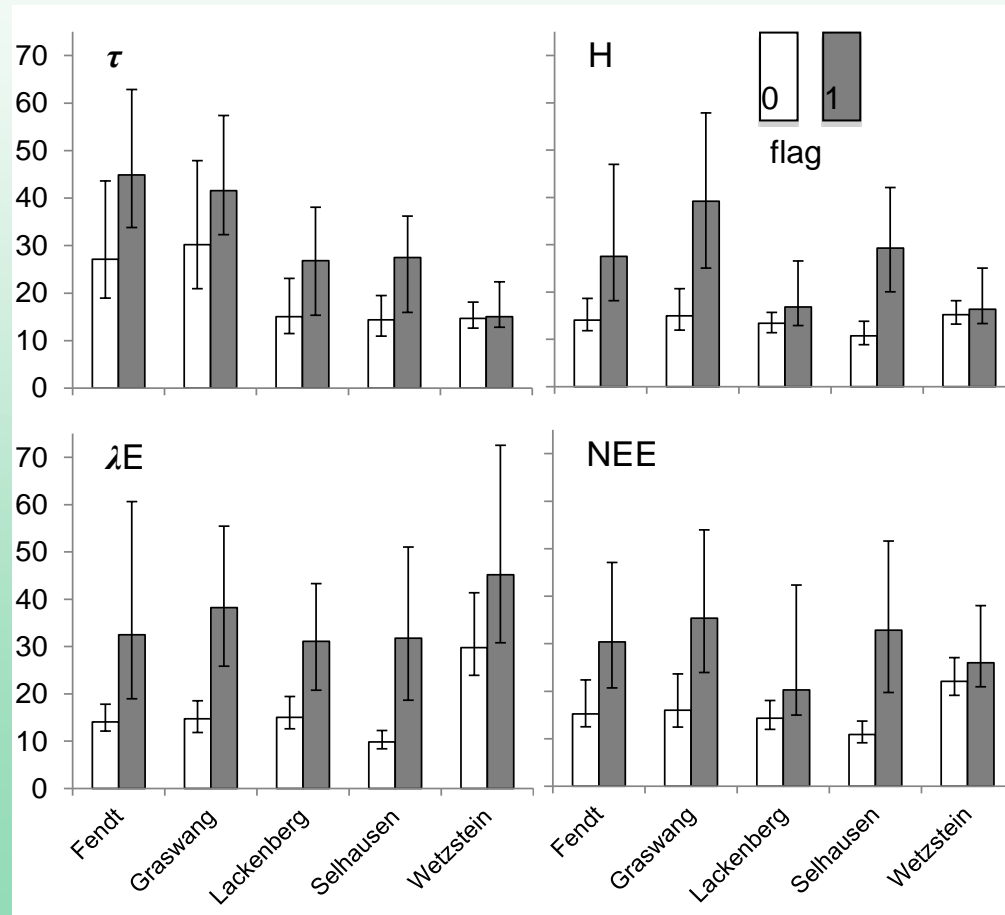
Core Members (Status 2011)

Hans Peter Schmid (KIT), Matthias Cuntz (UFZ), Clemens Drühe (Uni Trier), Alexander Graf (FZJ), Matthias Mauder (KIT), Corinna Rebmann (UFZ), Rainer Steinbrecher (KIT)

Collaboration across Centers in TERENO

A quality assessment scheme for eddy-covariance measurements in a long-term observatory network

Matthias Mauder, Matthias Cuntz, Clemens Drüe, Alexander Graf, Corinna Rebmann, Marius Schmidt, Rainer Steinbrecher



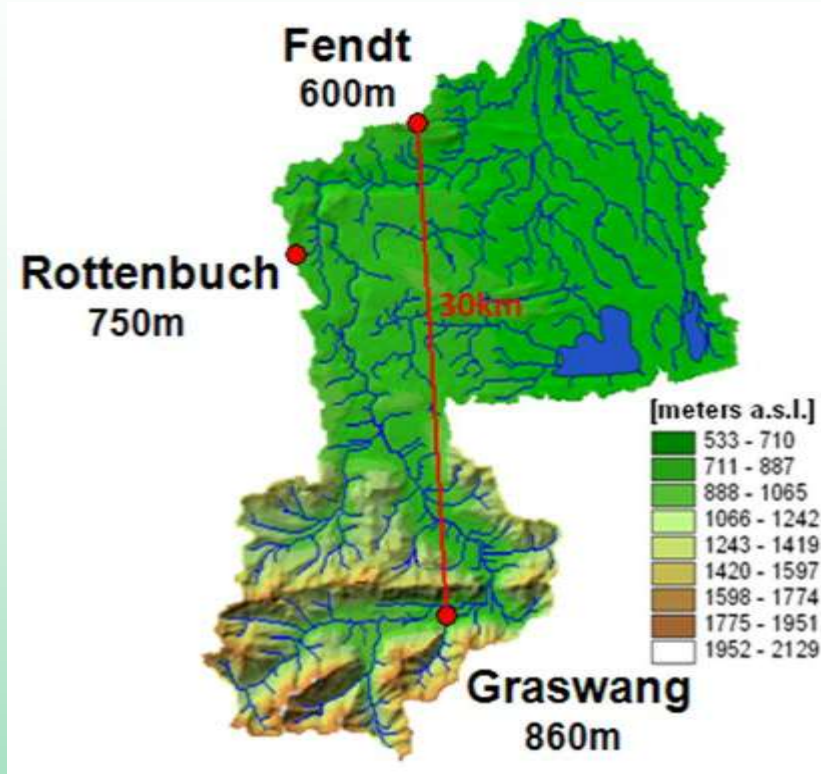
Contributions from:
KIT, UFZ, Uni Trier, FZJ

***** in internal review *****

Relative random flux error (%) for the fluxes of momentum, sensible and latent heat and NEE as a function of its quality flag (0: high quality, 1 intermediate quality)

The Grassland Observatories

The Location (Ammer Catchment)



The Team



Elisabeth Weiß, Rainer Steinbrecher, HaPe Schmid, Matthias Mauder, Katja Heidbach (f.I.)

- the three sites are fully operational since August 2011
- near real time data are available on:
<http://tereno.imk-ifu.kit.edu/>

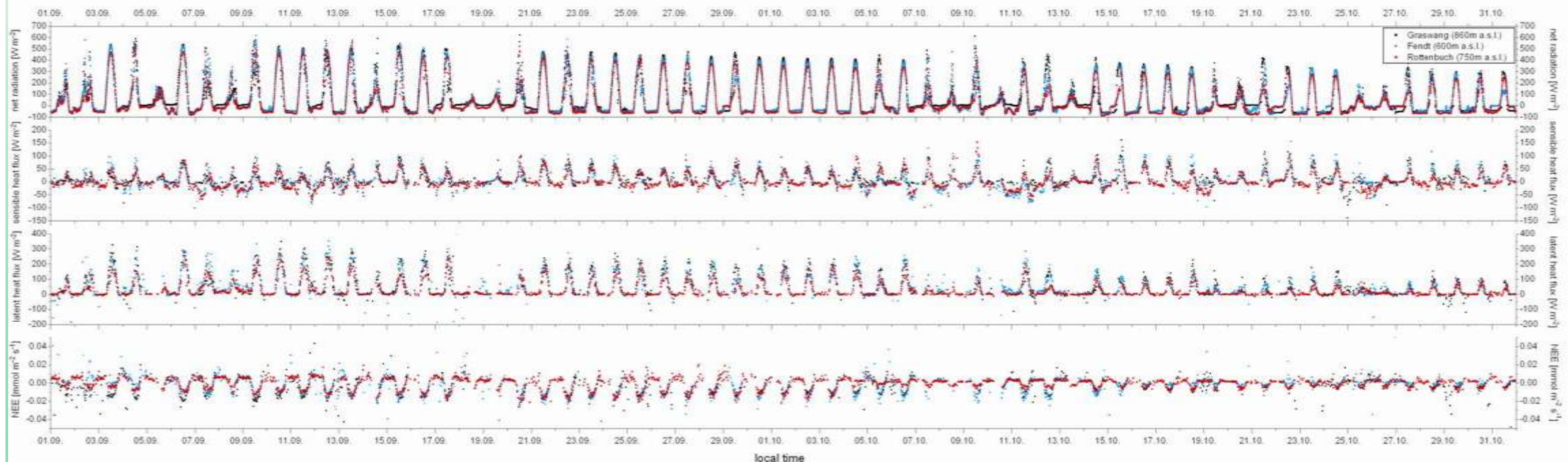
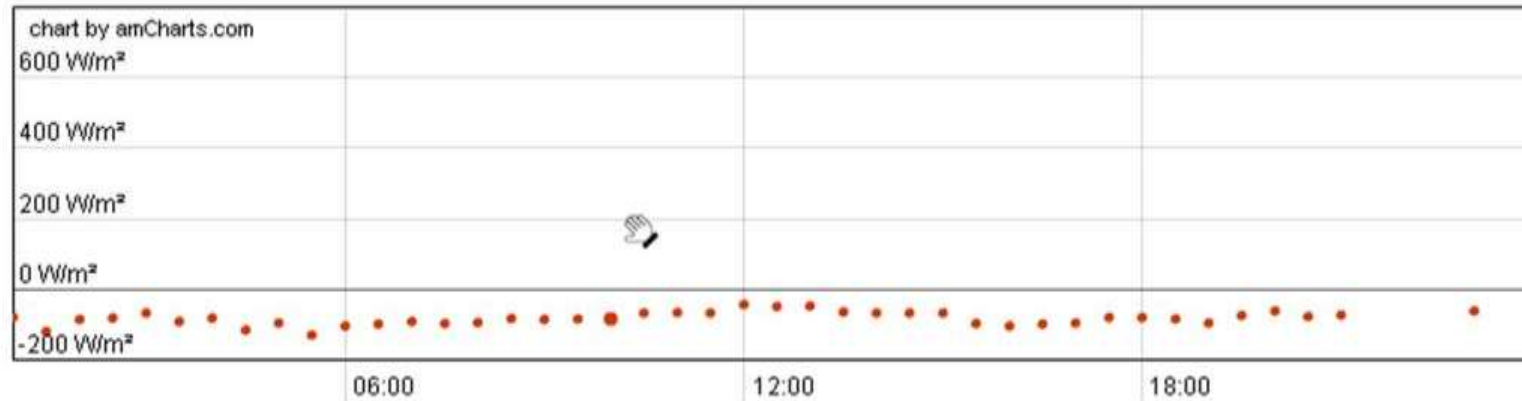
The Grassland Observatories

First Data:

Turbulence Data - Fendt (preliminary TK2 output)

Custom period: -

Zoom:





KIT Ecosystems Observatories

Grassland

- Fendt Level 1 (EC + chambers + CO₂ soil profile)
- Graswang Level 2 (EC)

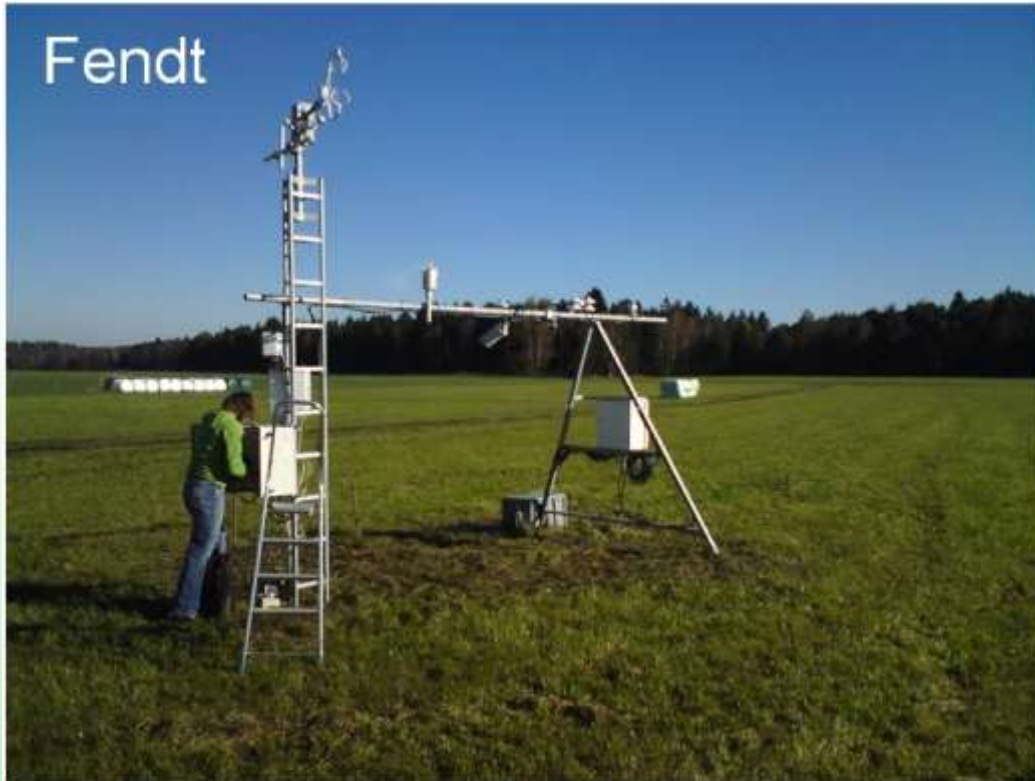
Peat Bog

- Schechenfilz Level 2 (EC)

Forest

- Höglwald Level 2 (chambers)

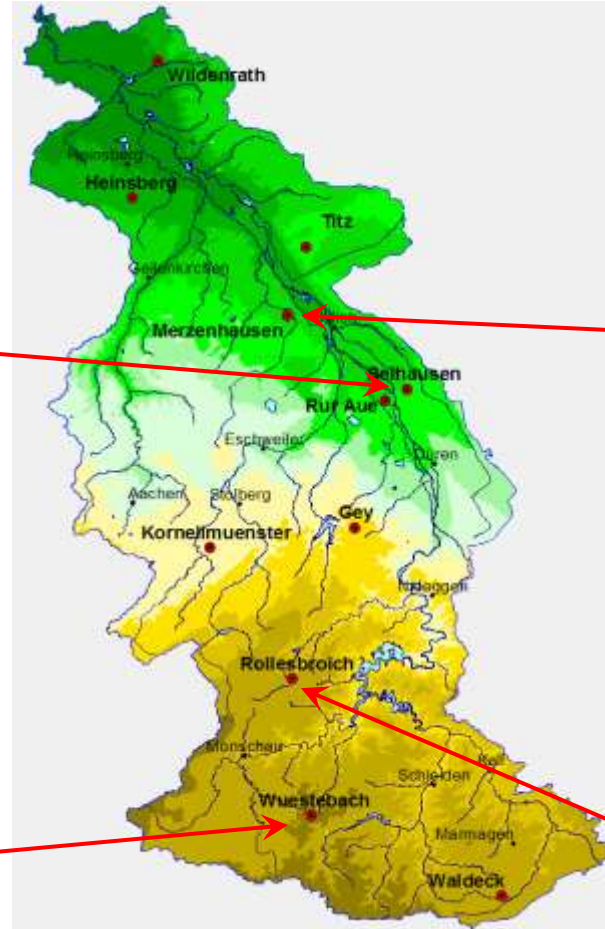




Rur Obs: State of ICOS sites



Selhausen (agric)



Merzenhausen (agric)



Wüstebach (forest)



Rollesbroich (grassld)

Eddy Covariance operational since: ancillary measurements partly incomplete

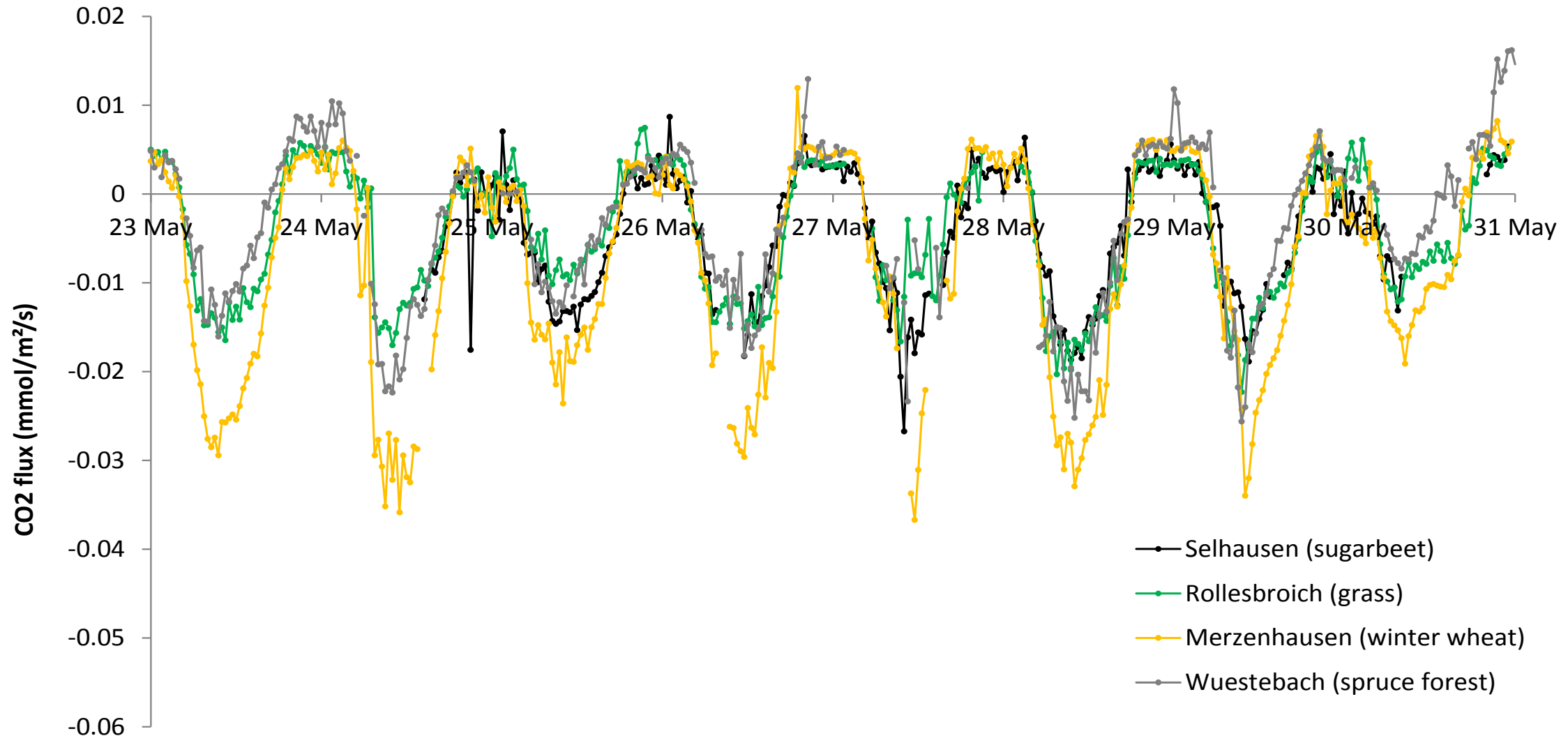
2012-05-24 Selhausen FZ Jülich / TERENO-SOILCAN, not in winter (yet)

2012-05-10 Merzenhausen University Köln, no official TERENO site (yet)

2012-05-13 Rollesbroich FZ Jülich / TERENO-SOILCAN

2010-06-24 Wüstebach University Trier / TERENO-ICOS

Rur Obs: State of ICOS sites



CO₂ fluxes near the operation start date of the last new station

Rur Obs: CT Atmos Team

FZ Jülich



Marius Schmidt
Scientist



Dr. Alexander
Graf
Scientist



Daniel Dolfus
Technician



Martina Klein
Technician



Prof. Dr. Nicolas
Brüggemann
Associate Scientist



Prof. Dr. Harrie-Jan
Hendricks Franssen
Associate Scientist

University Trier



Dr. Heye Bogena
Associate Scientist



Dr. Thomas Pütz
Associate Scientist



Dr. Clemens
Drüe
Scientist

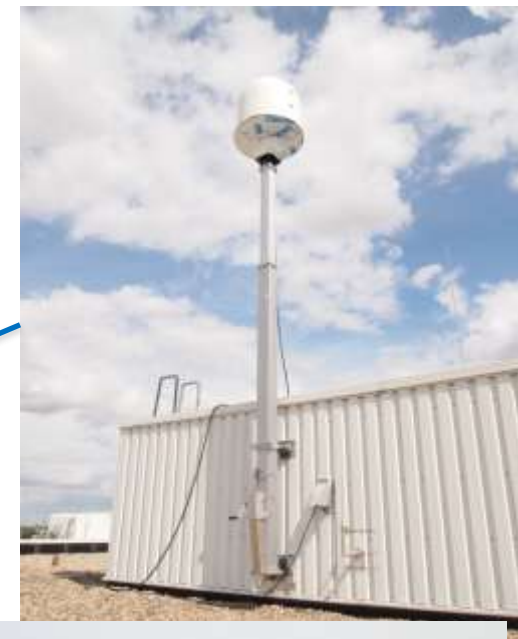


Prof. Dr. Günther
Heinemann
Associate Scientist



Uwe Baltes
Technician

UFZ-CHS experimental sites



Rain Scanner, climatological stations

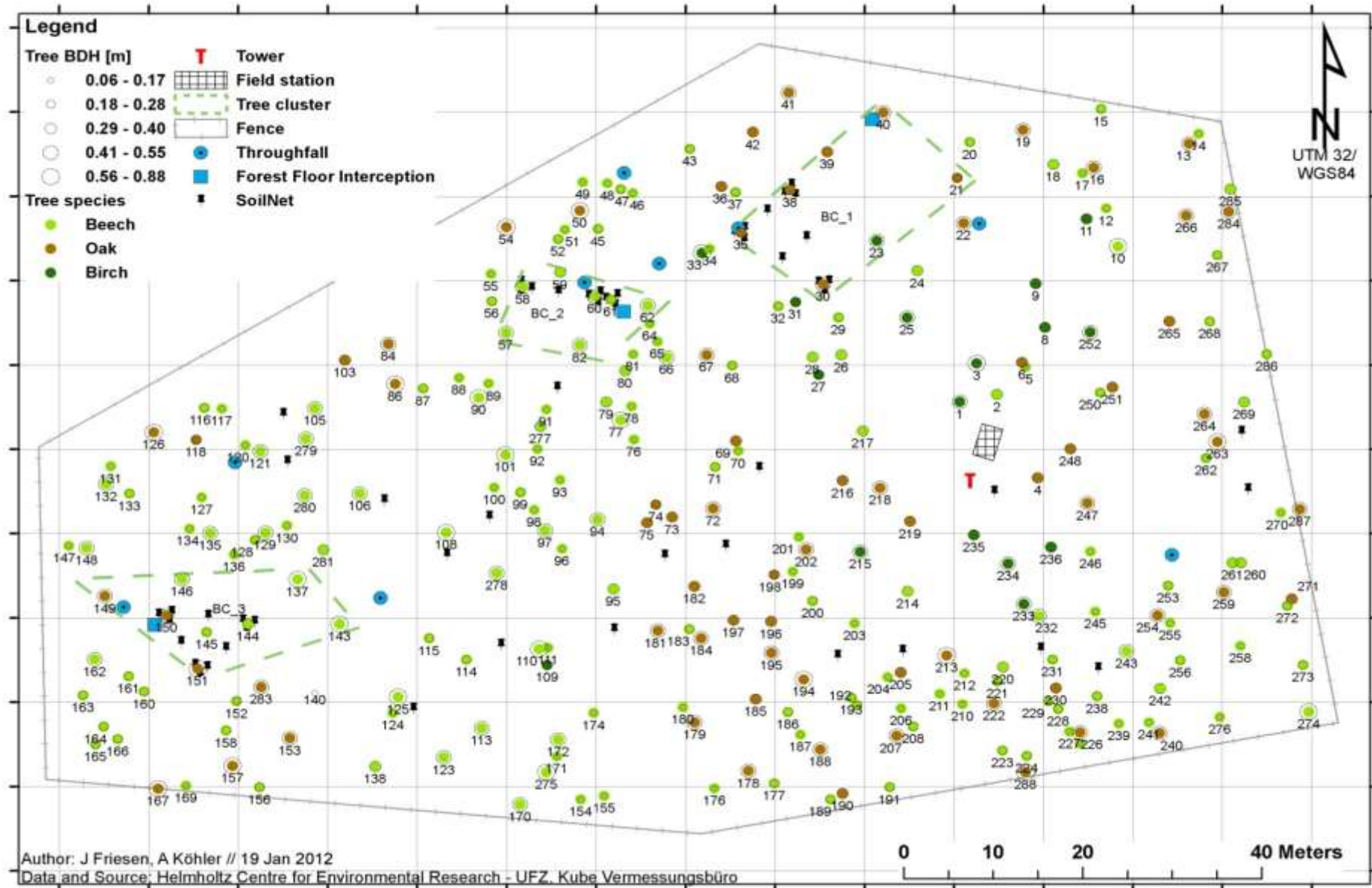
Parameters measured:

- precipitation (amount and drop size distribution)
→ **calibration of rainscanner**
- incoming/reflected short and long wave radiation
- soil moisture (5 depths)
- soil temperature (5 depths)
- soil heat flux
- wind speed and direction
- air temperature and moisture
- snow depth



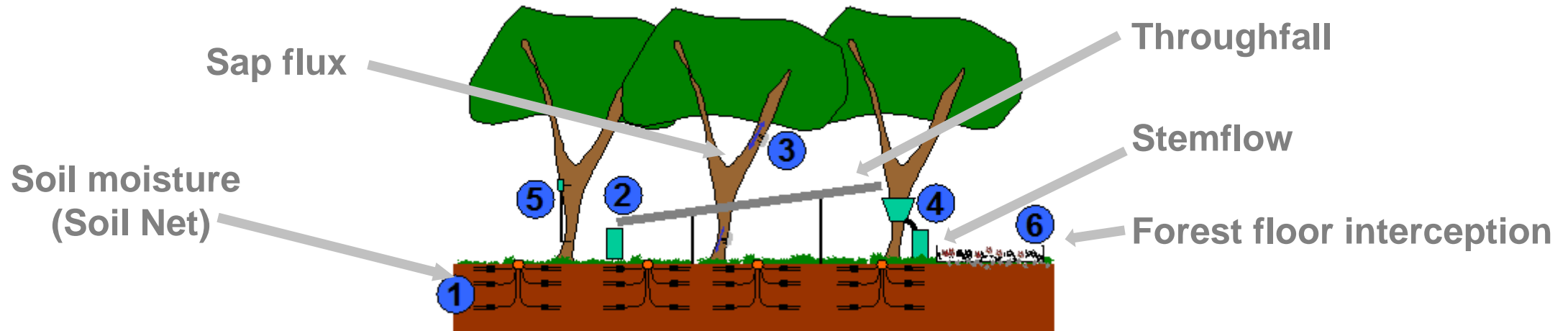
Ecohydrology

Forest Hohes Holz



Ecohydrology

Forest Hohes Holz



Measured target variables

Spatial mean and variogram of

- below canopy water fluxes (stemflow and throughfall)
- soil moisture

For smaller canopy clusters:

- Water budget of the canopy and litter layer
- Estimation of transpiration via sap flow