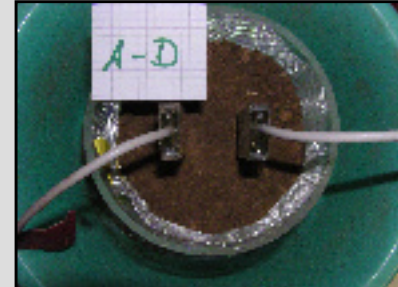
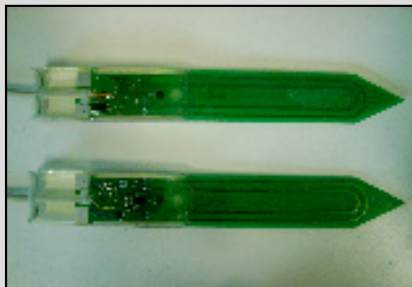
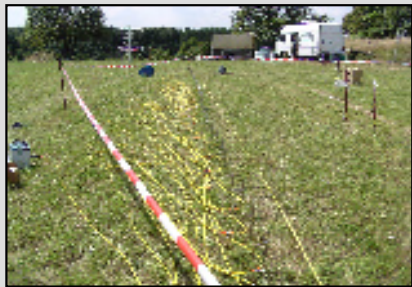


# Soil moisture network in COPS

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Soil Moisture Group (SMG)



# New PQP-project: Multi-scale Analysis of the Impact of Soil Moisture and Boundary Layer Processes on Convective Precipitation



- **COPS-experiment**  
Jun-Aug 2007
  - **MoistureNet (DFG-Project)**  
Jul 2006 - Jun 2009
- **soil moisture/energy  
balance network**

- identify **dependence of CI** on the **spatial and temporal soil moisture variability**,
- develop **quality control and upscaling** algorithms for soil moisture data from point measurements to the LM-grid
- investigate **impact** of improved soil moisture data **on convective precipitation modelling**



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# Work packages PQP-project

WP1. generation of a quality controlled **soil moisture network**

WP2. evaluation of high-resolution data sets from the COPS-experiment regarding the **transfer processes between soil and PBL**

WP3. GME/LM model studies to identify the physical processes responsible for observed model deficiencies and to determine the **influence of soil moisture variability on convective precipitation**



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# WP I: Soil moisture net in Southwest-Germany

- **coarse-grid station network**

COPS region (operational March 2007)

- **high-resolution station network**

supersite 1 (operational during COPS)

coupled to energy balance and turbulence stations

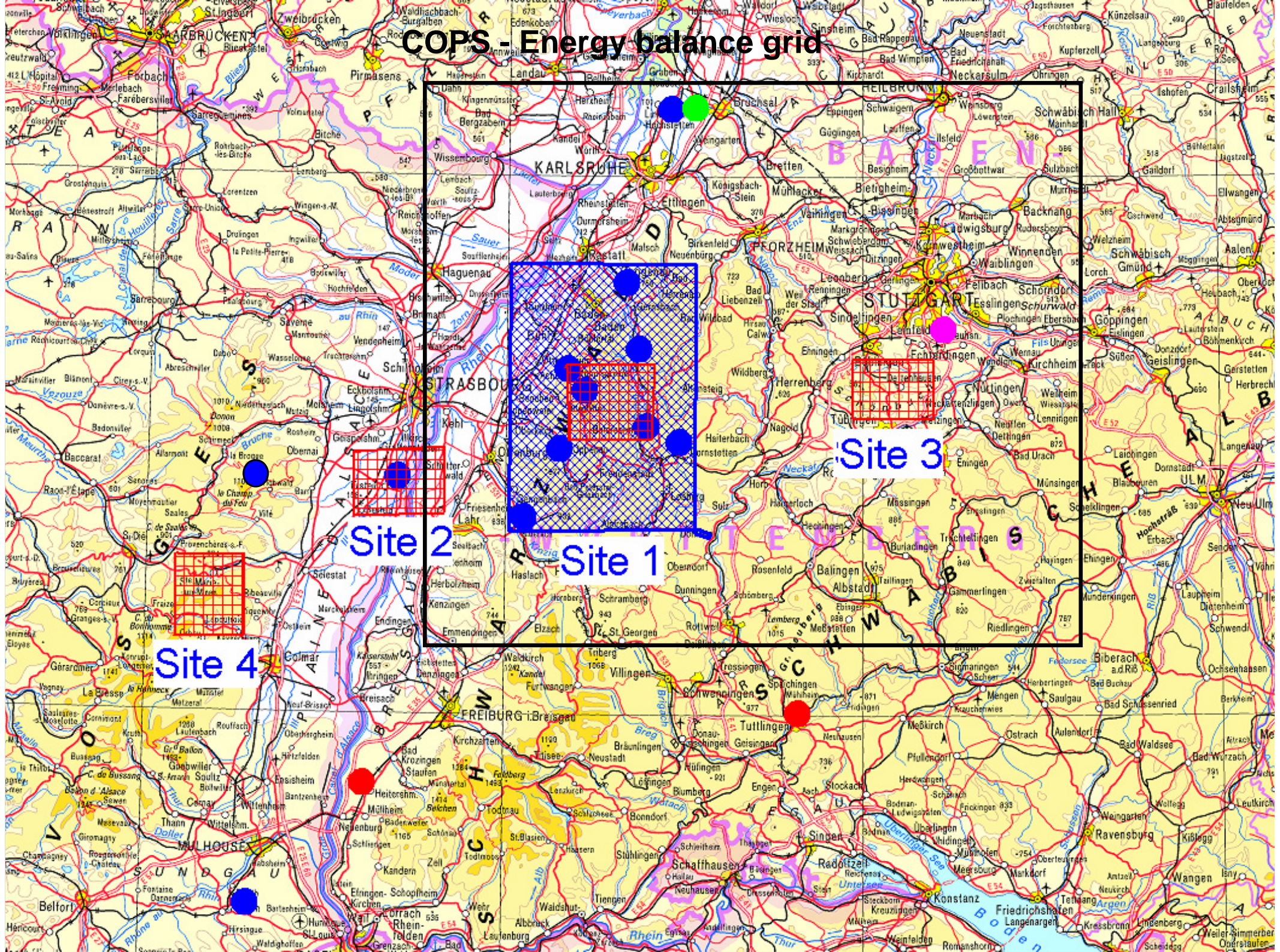
- **complementary data sets**

Precipitation, remote sensing, DTM, land-use, soil type



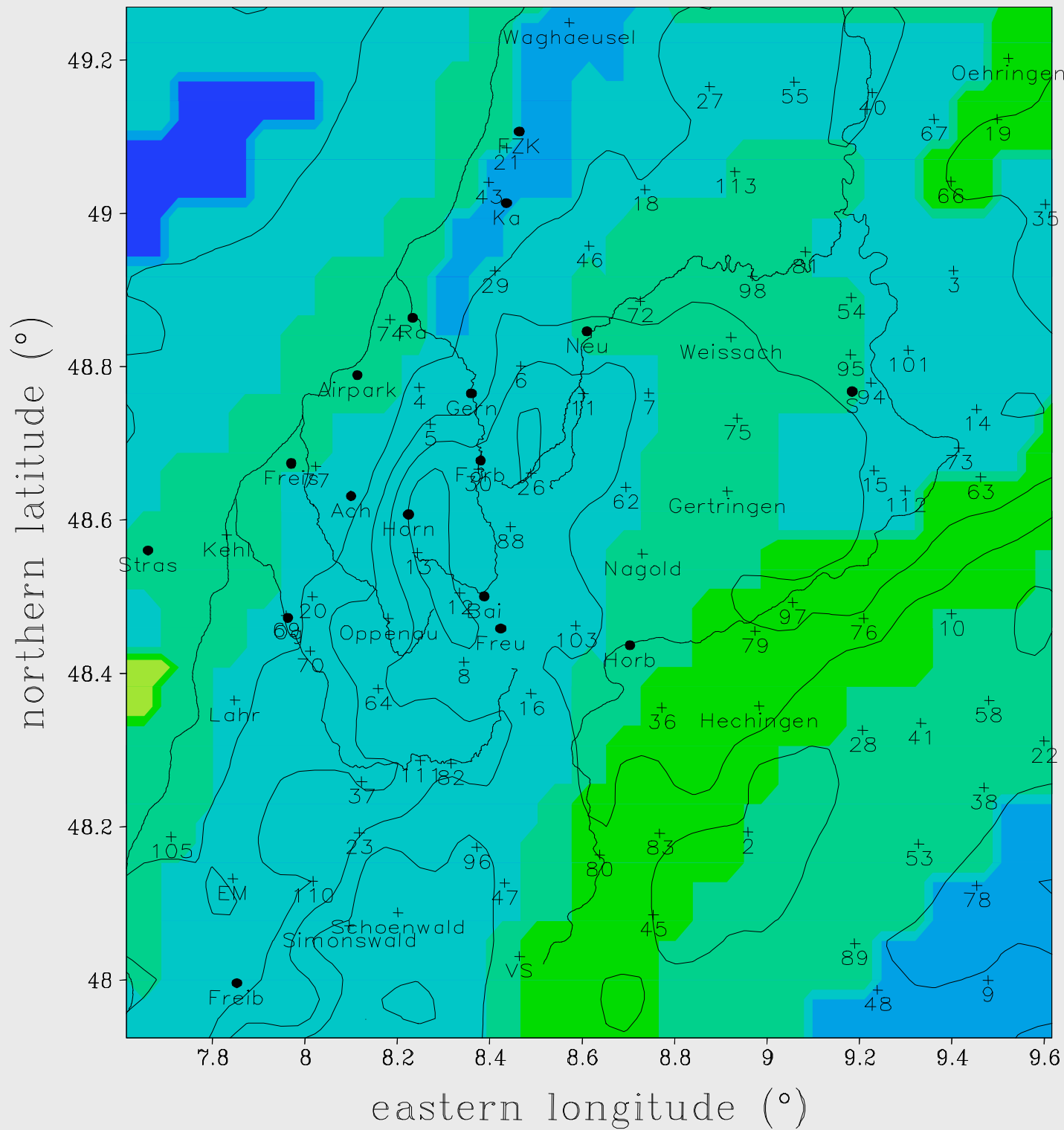


# COPS - Energy balance grid



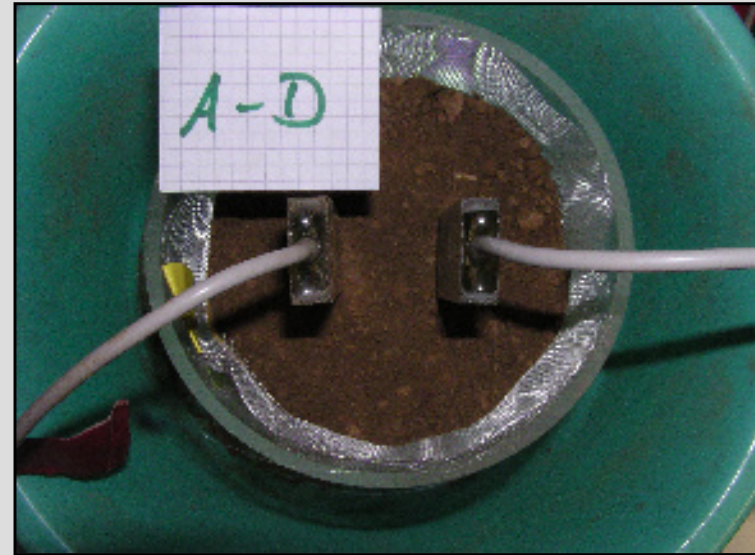


# Coarse-grid



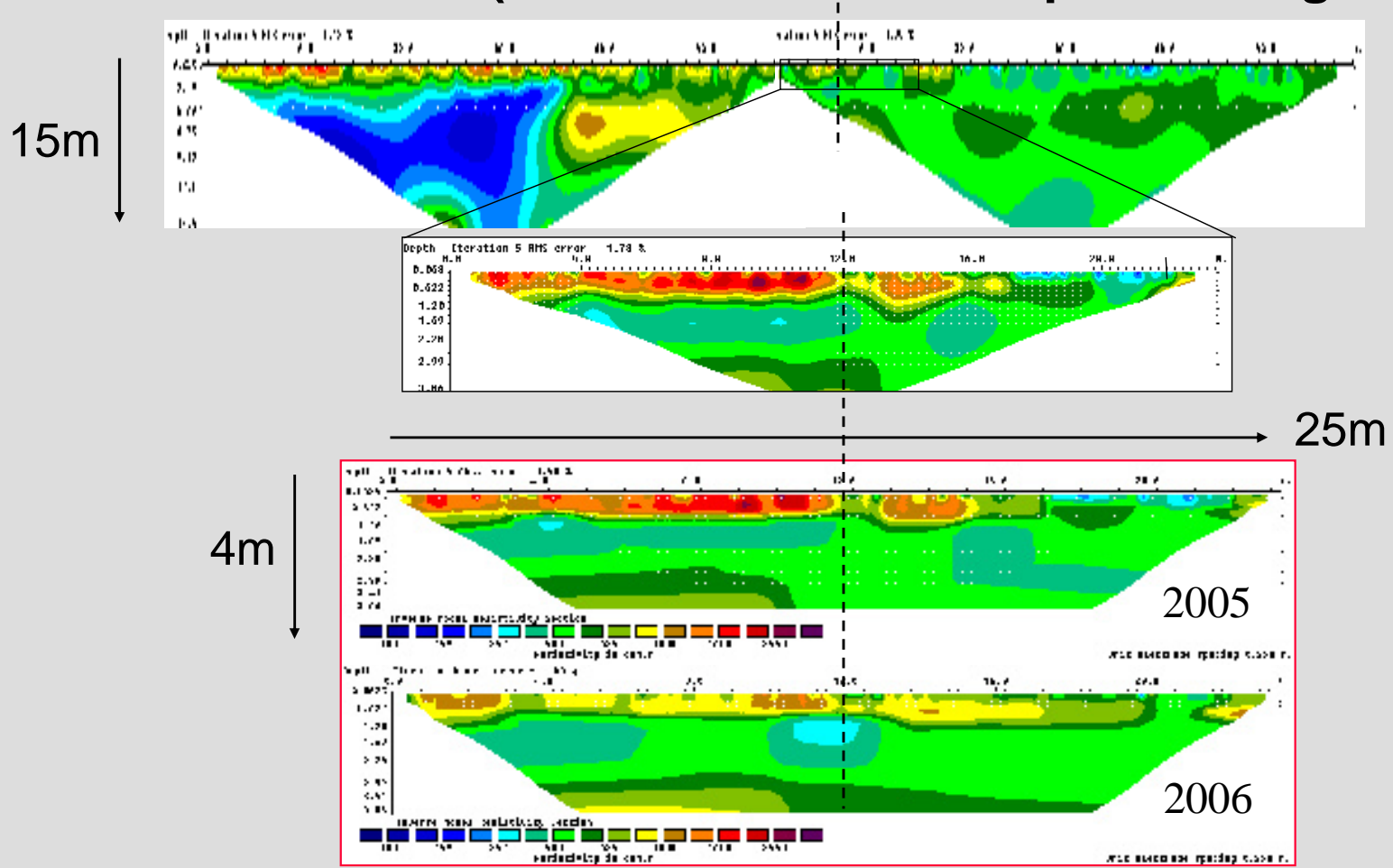
Forschungsinstitut für Waldökologie und Forstwirtschaft

## Soil moisture sensors: SISOMOP (Simplified Soil Moisture Probe)



- Ring oscillator: signal = loops per time
- Calibration needed to relate the signal to soil moisture
- 150 sensors planned: 50 stations
  - (a) 3 sensors at different depths
  - (b) 3-4 sensors at surface

# Optional: detailed 2D-variability of soil moisture with geophysical instruments (Goelectrics/Ground penetrating radar)



**Soil moisture variability in forested and non-forested areas  
(in coop. with Uni Göttingen/N-FVA)**



# Questions/Logistics:

## (1) Location of stations

- near existing precipitation stations (DWD, LUBW)
- which depths ?
- horizontal variability
- number, location and temporal resolution of detailed 2D-sections

## (2) are there other existing soil moisture stations ?

- COPS-related
- independent of COPS

## (3) Data management/Quicklooks

