

Measurements of the micrometeorological tower located in Selhausen

Prof. Dr. Karl Schneider
Dipl.-Geogr. Marius Schmidt

12. March 2010



Contact:

Prof. Dr. Karl Schneider
Institute of Geography
Hydrogeography and Climatology Research Group
University of Cologne
Albertus-Magnus-Platz / D-50923 Cologne
Phone: 0221-470-4331
e-mail: karl.schneider@uni-koeln.de

Dipl.-Geogr. Marius Schmidt
Institute of Geography
Hydrogeography and Climatology Research Group
University of Cologne
Albertus-Magnus-Platz / D-50923 Cologne
Phone: 0221-470-7805
e-mail: marius.schmidt@uni-koeln.de

Dataset information

Measurement frequency: 20 Hz

Averaging interval: 30 min

Period: 01.01.2009 - 31.12.2009

Location: Selhausen (50°52'14.24" N, 6°26'58.75" E, 103 m asl)

The timestamp is given in UTC and refers to the end of the measuring interval.

Data was checked for plausibility.

Missing values in time series are given as "-9999.9".

If heat and carbon flux measurements (latent heat flux, sensible heat flux, net ecosystem exchange, gross primary production, ecosystem respiration) were required, please contact.

Variables

Name	Unit	Variable	Instrument manufacturer
R	W m^{-2}	global radiation in 2.5 m	SP-LITE, Kipp & Zonen, Delft, Netherlands
Q	W m^{-2}	net radiation in 2.5 m	NR-LITE, Kipp & Zonen, Delft, Netherlands
G	W m^{-2}	soil heat flux in -0.08 m	HFP01, Hukseflux Thermal Sensors, Delft, Netherlands
precip	$\text{mm}^{-30\text{Min}}$	precipitation in 1 m	RM Young 52203, R.M. Young Company, Traverse City, USA
T_soil	$^{\circ}\text{C}$	soil temperature in -0.05 m	TCAV, Campbell Scientific, Inc., Logan, USA
T_air	$^{\circ}\text{C}$	air temperature in 2.2 m	CS215, Campbell Scientific, Inc., Logan, USA
RH	%	relative humidity in 2.2 m	CS215, Campbell Scientific, Inc., Logan, USA
u	m s^{-1}	wind velocity in 1.78 - 2 m*	CSAT3, Campbell Scientific, Inc., Logan, USA
wdir	$^{\circ}$	wind direction 1.78 - 2 m*	CSAT3, Campbell Scientific, Inc., Logan, USA
SWC_10cm	$\text{m}^3 \text{m}^{-3}$	soil water content in -0.3 m	CS616, Campbell Scientific, Inc., Logan, USA
SWC_30cm	$\text{m}^3 \text{m}^{-3}$	soil water content in -0.6 m	CS616, Campbell Scientific, Inc., Logan, USA
press	hPa	air pressure in 1.5 m	LI7500, LI-COR Inc., Lincoln, NE, USA
CO2	ppm	CO ₂ concentration in 1.78 - 2 m**	LI7500, LI-COR Inc., Lincoln, NE, USA
a	g m^3	absolute humidity in 1.78 - 2 m**	LI7500, LI-COR Inc., Lincoln, NE, USA

Table 1: Variables measured at the micrometeorological tower in Selhausen

* Measurements of the CSAT3 (u, wdir) were filtered by the internal diagnostic information of the instrument. Instrument height varied during measurement period between 1.78 and 2 m. For details please contact.

** Measurements of the LI7500 (a, CO₂) were first filtered by the internal diagnostic information of the instrument. Then absolute humidity derived from LI7500 was compared to those measured with the combined humidity and temperature sensor (CS215). LI7500 data (a, CO₂) was rejected if the difference exceeded a certain threshold. Based on empirical analysis of the whole dataset, the threshold was set to 9 g m^{-3} . Instrument height varied during measurement period between 1.78 and 2 m. For details please contact.