

Additional information needed to process Wüstebach tower EC data

Applies to data sets:

wuestebach-tower-ec_raw_2010_06.tar.bz2 to wuestebach-tower-ec_raw_2011_04.tar.bz2

Uncompressing the data:

Linux:

```
# tar -xjvf wuestebach-tower-ec_raw_XXXX_XX.tar.bz2
```

Windows:

Some compression tools that advertise being able to handle tar.bz2 files are 7zip (<http://www.7-zip.org/>), and WinZip (commercial). You might be required to change the filename extension from .tar.bz2 into .tbz or .tb2. (untested)

On the command line use bzip2 (<http://gnuwin32.sourceforge.net/packages/bzip2.htm>) to uncompress the file

```
# bzip2 -d wuestebach-tower-ec_raw_XXXX_XX.tar.bz2
```

then tar (<http://gnuwin32.sourceforge.net/packages/gtar.htm>) to extract the individual data

```
# gtar -xvf wuestebach-tower-ec_raw_XXXX_XX.tar
```

Mac OSX:

The default OSX archiving program should be able to handle the file format (untested)

Data file organization:

Each period is covered by two data files (yyyy is the data logger serial and xxx... is the start time of the file)

TOA5_yyyy.ts_data_XXXX_XX_XX_XXXX.dat, which contains the 20-Hz data and

TOA5_yyyy.rpv_data_XXXX_XX_XX_XXXX.dat, which contains 10-min averages

Each day is packed into one pairs of files, except for days, when the instruments were subject to maintenance. Data from such days are split at the time of the maintenance.

The *rpv_data* files additionally contain columns for battery voltage and 10-min averages of some of the 20-Hz data, which are intended remote function monitoring should not be used.

Note:

The **CSAT3 diagnostic word** contained in the data is not equal to the diagnostic word output by the CSAT3. The manufacturer-supplied Logger program divided the value by 4096.

i.e. the value has to be multiplied by 4096 before evaluating the quality bits as documented in the CSAT3 manual and the lowest bits do **not** count record numbers modulo 64

Site information:

Instrument height	38 m above ground
Surrounding forest height	30 m
Predominant tree species	spruce plantation (picea abies)
CSAT heading (negative x-axis):	182°
distance CSAT to LI7500	15 cm
heading of connecting line from LI7500 to CSAT	182°
Tower is shadowing	wind direction 343° to 25°
Geographic Position:	
Spatial Reference System:	EPSG:4326
easting:	6.330920219421387
northing:	50.50490188598633
TERENO identifier	WU_K_002

View of the instruments:

Picture by Clemens Drüe, Umweltmeteorologie, Uni Trier, 2011