Status : April 2020

Description of data file format ----- easy to handle for the ISMN

Data file examples (within the two dotted lines):

#1Date-stamp (yyyy-mm-dd)
#2;Time-stamp (hh:mm:ss: UTC)
#3;**Variable**[sensor; unit;depth_from;depth_to;sensor_position(horizontal/vertical)]
#4;**Variable_oqf**[descritption]
#5;**Variable**[sensor; unit; depth_from;depth_to;sensor_position(horizontal/vertical)]
#6;**Variable_oqf**[descritption]
#7;**Variable**[sensor; unit; depth_from; depth_to; sensor_position(horizontal/vertical)]
#8;**Variable_oqf**[descritption]
$;;;;;;;
2011-01-01;01:00:00;8.70;U;8.80;U;8.90;U
2011-01-01;02:00:00;8.70;U;8.80;U;8.80;U
2011-01-01;03:00:00;8.60;U;8.70;U;8.80;U
…

Data file example description:

- Data file with 8 columns
- The first 8 rows represent the header of the file and describes each column in that order
- **Green** represents the **minimum information needed**
- **Violet** represents **extended information** (sufficient to be stated **in the metadata file**)
- **Gray** represents a **special case** (not in every network present)
- $ … separates the header from the data
- ; … separates each entry (represents a column)
- … no separator (;) needed at the end (otherwise: would indicate another column)

Meaning of each value:

sensor	Brand/name of the sensor
variable	sm = soil moisture ts = soil temperature ta = air temperature p = precipitation sd = snow-depth sweq = snow water equivalent
Variable_oqf	_oqf = own quality flag **(special case)** - if you have your own quality flags and want to share them with the ISMN you can add "_oqf" to the variable (e.g.: for soil moisture --> "sm_oqf") - a description of your flags is sufficient in the metadata file

unit	% volume	soil moisture
	mm	precipitation, snow-depth, snow water equivalent
	degree C	soil temperature air temperature surface temperature
depth_from	The top of the depth range represented by the sensor.	
depth_to	The bottom of the depth range represented by the sensor.	
sensor_position	Two options possible: - Vertical (depth_from - depth_to :eg.: 0.00 [m] – 0.10 [m]) - Horizontal (depth_from = depth_to: e.g.: 0.05 [m])	

Other important information

NaN values	- Periods where no measurement occurred (e.g. sensor malfunction, etc.) - No inclusion in the database - Info on your Nan values used, need to be stated in the metadata file Examples for NaN values from existing networks: 99 99.90 9999 -9999 Nan
.	Dot for floating-point numbers only e.g.: 0.62 (see data format example)
, or ;	Commas for separation of single entries (column separation) in the file (see data format example)
Spaces	No spaces in between

Data format examples from existing networks:

Example 1:

#1,date-stamp,(yyyy-mm-dd),,,,
#2,Time-stamp,(hh:mm:ss; UTC),,,,
#3,5TM Decagon,sm,m3m-3 vol,0,0.05,vertical
#4,5TM Decagon,ts,degree C,0,0.05,vertical
#5,HygroClip HC2 Logotronic,ta,degree C,,2,horizontal
#6,TRWS 200E Logotronic,p,mm,,,vertical
$,,,,,,
2020-02-01,00:00:00,0.196,2.8,6.4,0
2020-02-01,01:00:00,0.196,2.9,6.5,0
2020-02-01,02:00:00,0.196,2.9,6.8,0
2020-02-01,03:00:00,0.197,3,6.9,0
…

Example 2:

#Time utc shift,AirHumidity_Relative_2m, AirHumidity_Relative_2mQualityFlag
2019-08-29T06:06:00.000+02:00,noData,noData
2019-08-29T06:10:00.000+02:00, 92.6,4_2002
..

For more information please don`t hesitate to contact us: ismn@geo.tuwien.ac.at

We are always happy to help!

Thank you for participating and sharing your data with us!

Your ISMN team