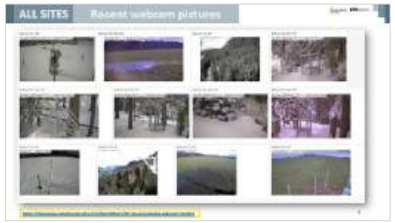
QA/QC Meeting
9 Jan 2025

Participants: LH, FTS, MR, PR, LS, YW, LK, KMK, FZ, LOS, FT, IF (12)


ALL SITES
Outlook: Finalizing 2024 data


ALL SITES
Recent webcam pictures


CH-AWS


CH-CHA


CH-DAV


CH-DAS


CH-FOR


CH-FRU


CH-HON


CH-LAE


CH-LAS


CH-OE2


CH-TAN

ALL SITES Outlook: Finalizing 2024 data

- **Dec 2024**: general preparations: backup/update database and Grafana (LH)
- **2025**:
  - First we need to get rid of the automatic bico/fluxrun data:
    - Delete all bico converted ASCII files
    - Delete all Level-0 fluxes
  - Then convert/calculate for complete year
    - Convert all EC binary files using bico, all data
    - Calculate Level-0 fluxes across all data
    - Meteoscreening
    - Calculate Level-1 fluxes across all data
  - Put management data in management file (XLSX)
  - Share fluxes with FLUXNET (also N2O, CH4)
  - Share meteo data with FLUXNET
  - Share metadata with FLUXNET (BADM files)

ALL SITES Data schedule

The scripts bico and fluxrun are running automatically on the **GROUP-RDS**.

- bico converts sonicread binary files to ASCII
- fluxrun calculates fluxes
- execution times are defined in the Windows Task Scheduler
- **all times are CEST (UTC+2)**

Name	Status	Triggers	Next Run Time
[bico] CH-AWS Convert EC raw data binaries		At 06:00 every day	28.05.2024 06:00:00
[bico] CH-CHA Convert EC raw data binaries		At 06:10 every day	28.05.2024 06:10:00
[bico] CH-DAS Convert EC raw data binaries		At 06:20 every day	28.05.2024 06:20:00
[bico] CH-DAV Convert EC raw data binaries		At 06:30 every day	28.05.2024 06:30:00
[bico] CH-FOR Convert EC raw data binaries		At 06:40 every day	28.05.2024 06:40:00
[bico] CH-FRU Convert EC raw data binaries		At 06:50 every day	28.05.2024 06:50:00
[bico] CH-HON Convert EC raw data binaries		At 07:00 every day	28.05.2024 07:00:00
[bico] CH-LAE Convert EC raw data binaries		At 07:10 every day	28.05.2024 07:10:00
[bico] CH-LAS Convert EC raw data binaries	Ready	At 07:20 every day	28.05.2024 07:20:00
[bico] CH-OE2 Convert EC raw data binaries	Ready	At 07:30 every day	28.05.2024 07:30:00
[bico] CH-TAN Convert EC raw data binaries	Ready	At 07:40 every day	28.05.2024 07:40:00
[fluxrun] CH-AWS Calculate fluxes	Ready	At 08:00 every day	28.05.2024 08:00:00
[fluxrun] CH-CHA Calculate fluxes	Ready	At 08:10 every day	28.05.2024 08:10:00
[fluxrun] CH-DAS Calculate fluxes	Ready	At 08:20 every day	28.05.2024 08:20:00
[fluxrun] CH-DAV Calculate fluxes	Ready	At 08:30 every day	28.05.2024 08:30:00
[fluxrun] CH-FOR Calculate fluxes	Ready	At 08:40 every day	28.05.2024 08:40:00
[fluxrun] CH-FRU Calculate fluxes	Ready	At 08:50 every day	28.05.2024 08:50:00
[fluxrun] CH-HON Calculate fluxes	Ready	At 09:00 every day	28.05.2024 09:00:00
[fluxrun] CH-LAE Calculate fluxes	Ready	At 09:10 every day	28.05.2024 09:10:00
[fluxrun] CH-LAS Calculate fluxes	Ready	At 09:20 every day	28.05.2024 09:20:00
[fluxrun] CH-OE2 Calculate fluxes	Ready	At 09:30 every day	28.05.2024 09:30:00
[fluxrun] CH-TAN Calculate fluxes	Ready	At 09:40 every day	28.05.2024 09:40:00
[ppicos] CH-DAV Convert to ICOS formats	Ready	At 03:35 every day	28.05.2024 03:35:00

The script dataflow is running automatically on **GL-CALCS**.

- dataflow uploads data to the database
- Meteo data upload starts between 7:00 (AWS) and 7:46 (TAN)
- Flux data upload starts between 11:00 (first site, AWS) and 11:20 (last site, TAN)
- execution times are defined in the *crontab* file
- after upload, data are immediately available in Grafana
- **all times are CET (UTC+1): this means that during summer data uploads start one hour later**

Example AWS during summer/winter local time:

- bico starts 6:00 / 6:00
- dataflow 10_meteo upload starts 8:00 / 7:00
- dataflow 11_meteo_valley upload starts 8:02 / 7:02
- dataflow 12_meteo_rainfall upload starts 8:04 / 7:04
- dataflow 13_meteo_pressure upload starts 8:06 / 7:06
- dataflow 15_meteo_snowheight upload starts 8:08 / 7:08
- fluxrun starts 8:00 / 8:00
- dataflow flux upload starts 12:00 / 11:00

General Info

- **Attendance**: If you are (Tech-)SRP, please attend QA/QC meetings or tell LH if you can't, needed for planning of the meetings.
- **Short statement**: SRP & Tech-SRP: please prepare short statement about your site and post it on the slide together with the plot(s). You can also extend the already available text snippet(s) from previous meetings. (max. 2 sentences)
- **Purpose**: The purpose of QA/QC meetings is to check on current, incoming data. SRPs choose specific issues we should look at together and discuss in the group. Fluxes are checked if the respective SRP wishes to do so.
- **Variables**: There is a list of known variable abbreviations that you can use in case you wonder what an abbreviation means: Variable Abbreviations
- **Check of EC raw data files**:
  - Recommended check for SRPs and T-SRPS: take a look at EC raw data files and check if they look OK
  - Current EC raw data files are automatically converted to ASCII each day (done by the Python script bico)
  - Files and their plots can be found here, e.g. for CH-LAS: *gl-processing\CH-LAS_Lae-Subcanopy\20_ec_fluxes\2022\raw_data_ascii*
- **Weekly flux calculations on the RDS**:
  - Please calculate fluxes and check them once per week, or more often if you wish to do so.
  - If you cannot calculate the fluxes, try to find a substitute, e.g. LH.
  - Please move your Level-0 results from the RDS to the respective Level-0 folder.
- **RDS folder**: The folder P:\Flux\RDS_calculations is a temporary folder. Please move Level-0 flux calculations (preliminary fluxes) to the Level-0 folder on gl-processing. For example, for CH-CHA move files to Z:\CH-CHA_Chamau\20_ec_fluxes\2022\Level-0 (gl-processing is mounted as drive Z in this example).
- The RDS now has access to the database. This means that we now have a shared working environment where we can run Jupyter notebooks.
- **FluxCoffee**: separate meetings to discuss data related issues, e.g. flux processing and technical issues, started and will continue to take place. There are extensive notes available in the Data/FluxCoffee group on Microsoft Teams.
- **List of QA/QC Meeting dates**: QA/QC Meetings 2024

ALL SITES Recent webcam pictures

Webcam | CH-AWS

Webcam | CH-CHA | GF4

Webcam | CH-DAV

Webcam | CH-DAV | FF1

Webcam | CH-DAV | FF2

Webcam | CH-DAV | FF3

Webcam | CH-DAV | FF4

Webcam | CH-DAV | FF5

Webcam | CH-FRU

Webcam | CH-LAE

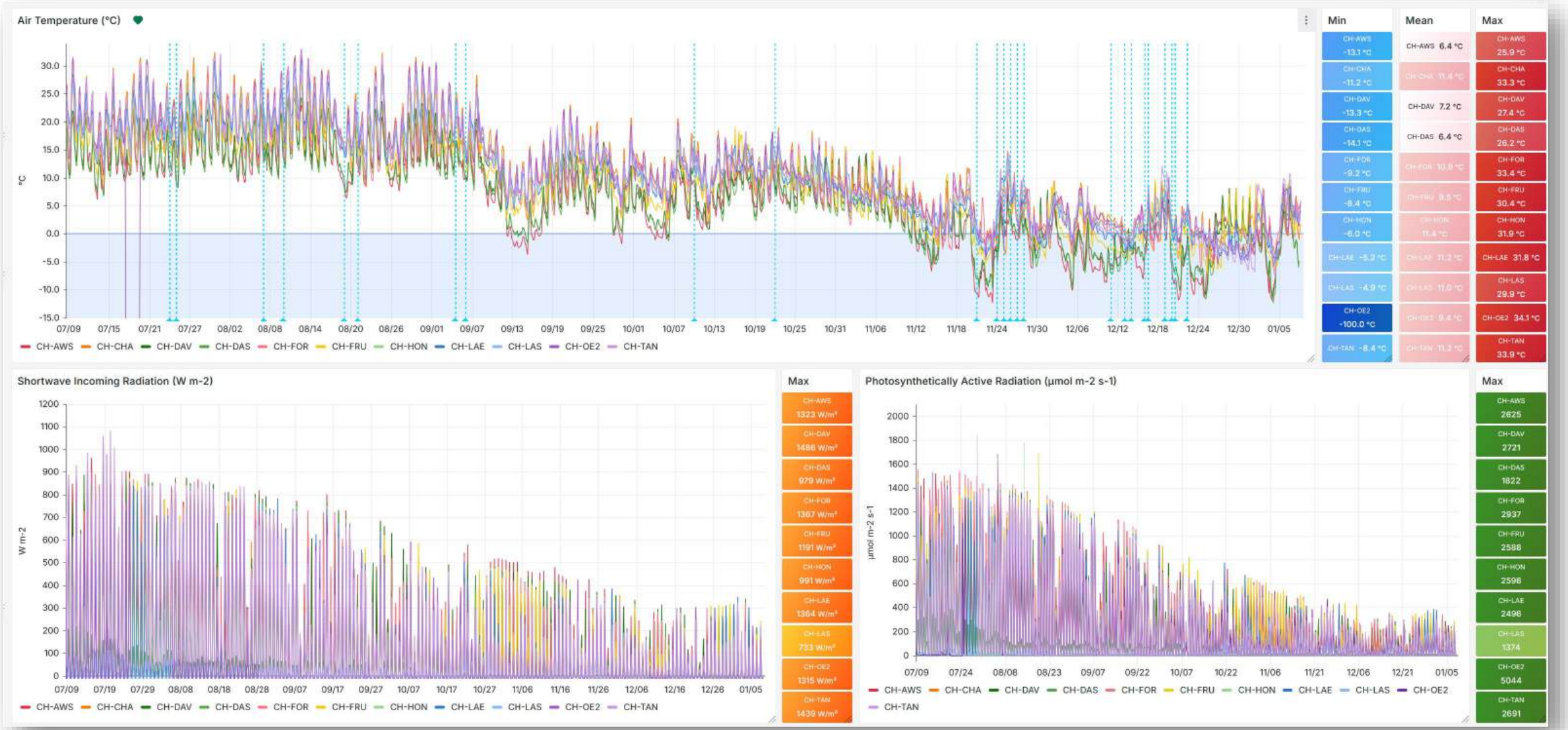
Webcam | CH-OE2

Webcam | CH-TAN

https://dataviews.swissfluxnet.ethz.ch/d/AmnD0qx7z/30-site-overview3a-webcams?orgId=1

ALL SITES Meteo data, all sites

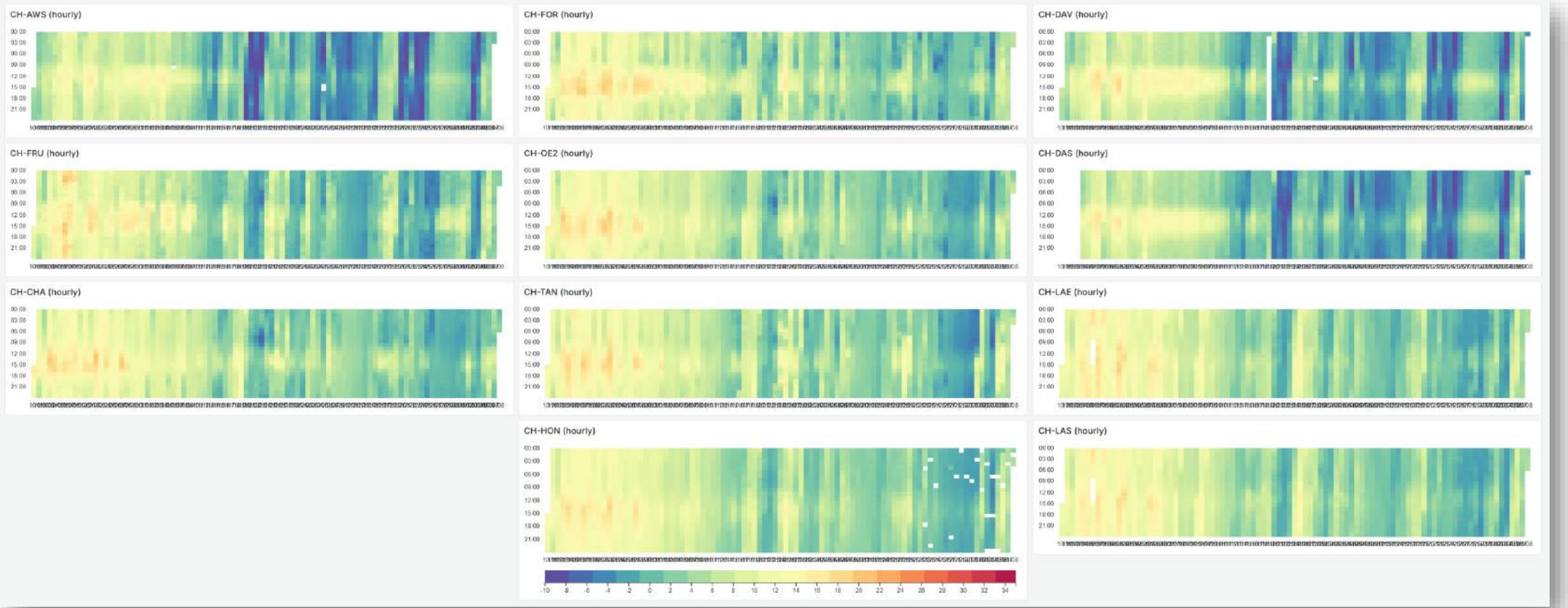
Last 6 months



https://dataviews.swissfluxnet.ethz.ch

ALL SITES TA

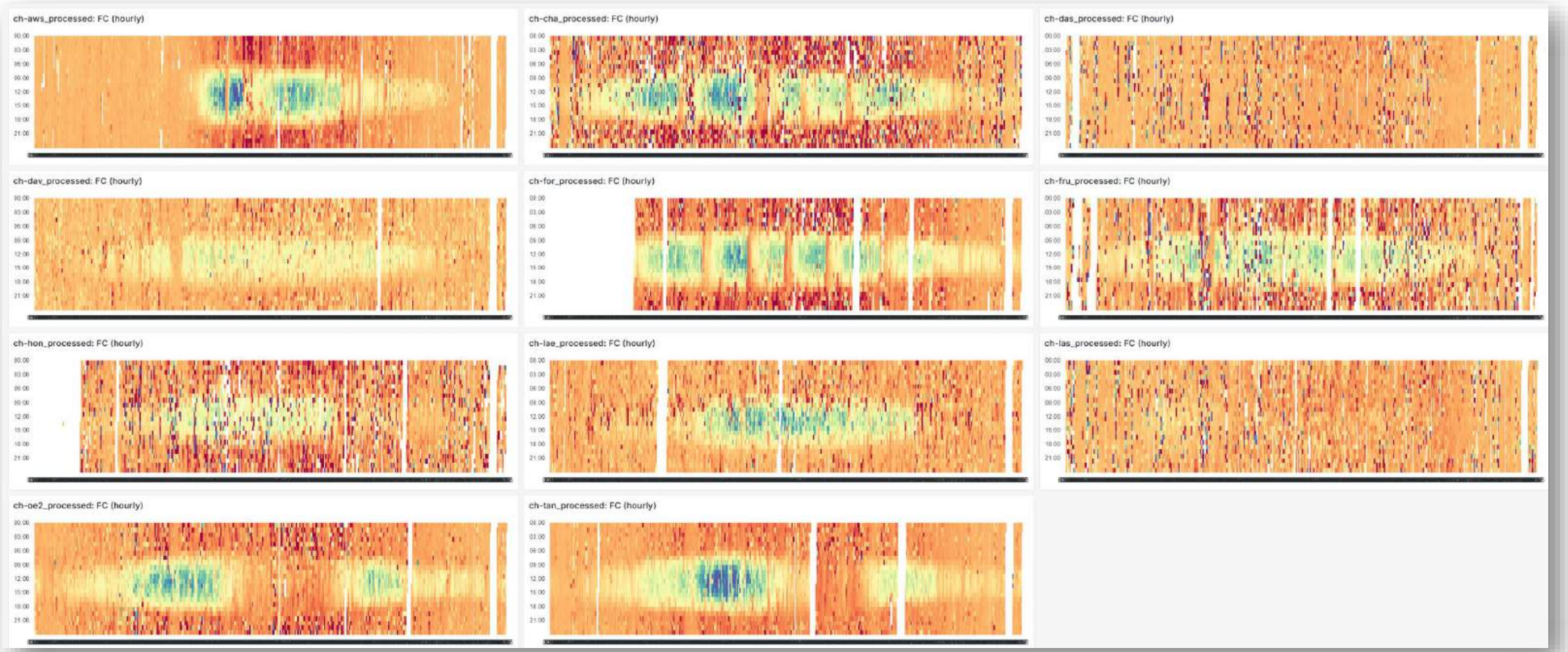
Last 90 days



https://dataviews.swissfluxnet.ethz.ch

ALL SITES CO2 flux

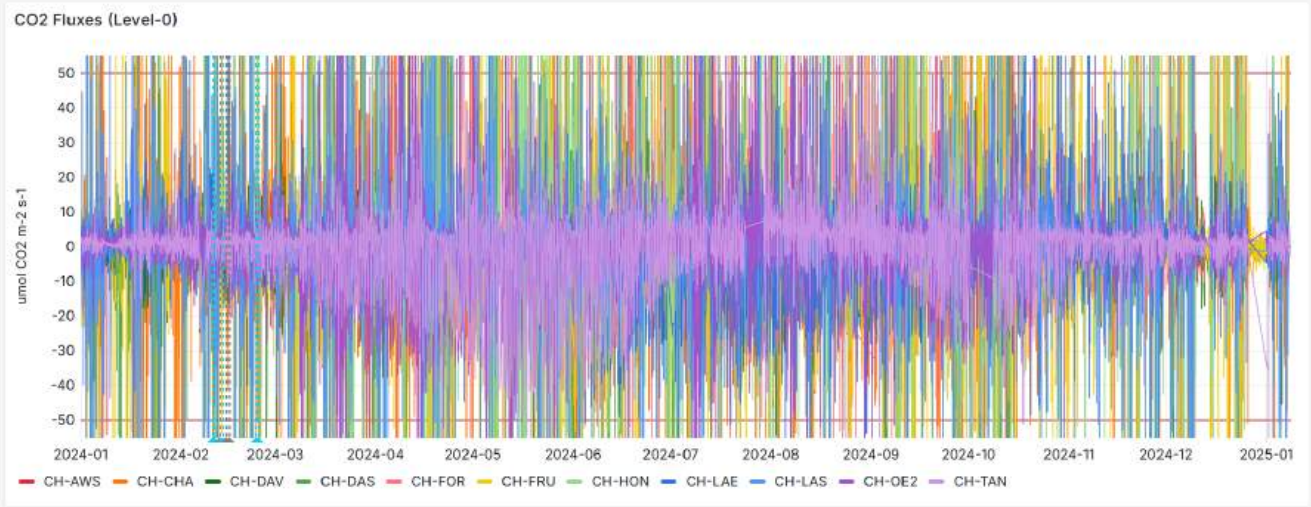
2024 complete, 2025

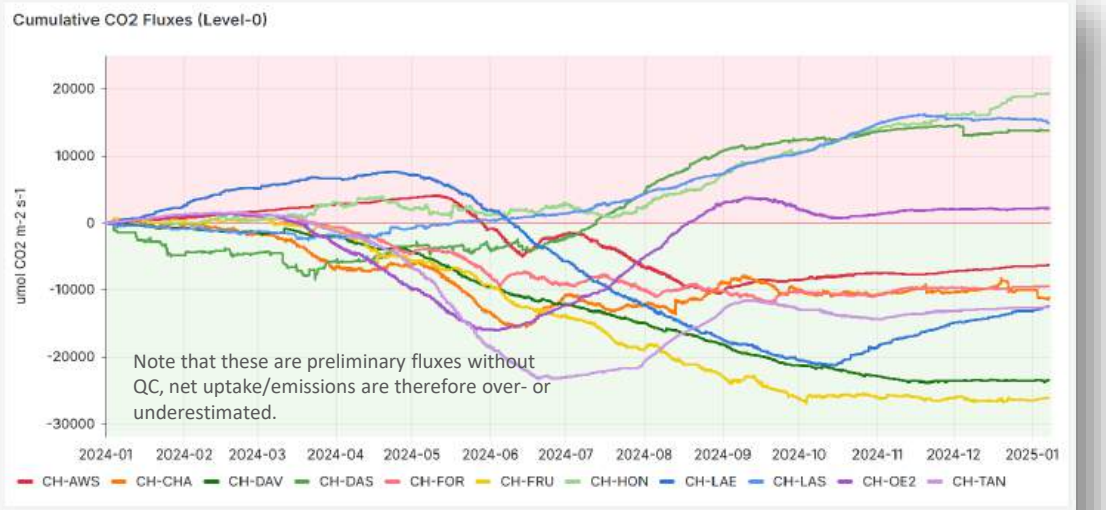


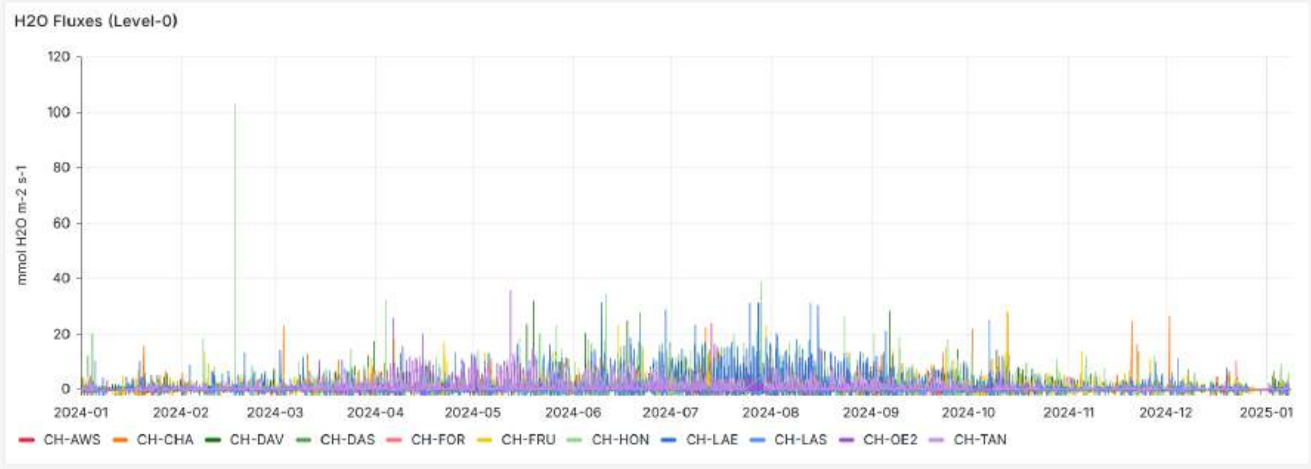
https://dataviews.swissfluxnet.ethz.ch

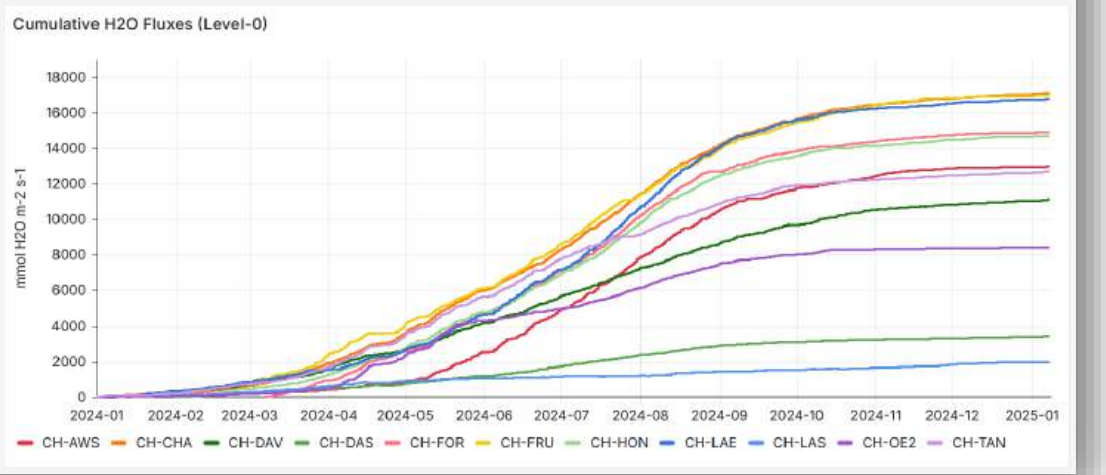
ALL SITES CO2 and H2O fluxes

2024 complete, 2025





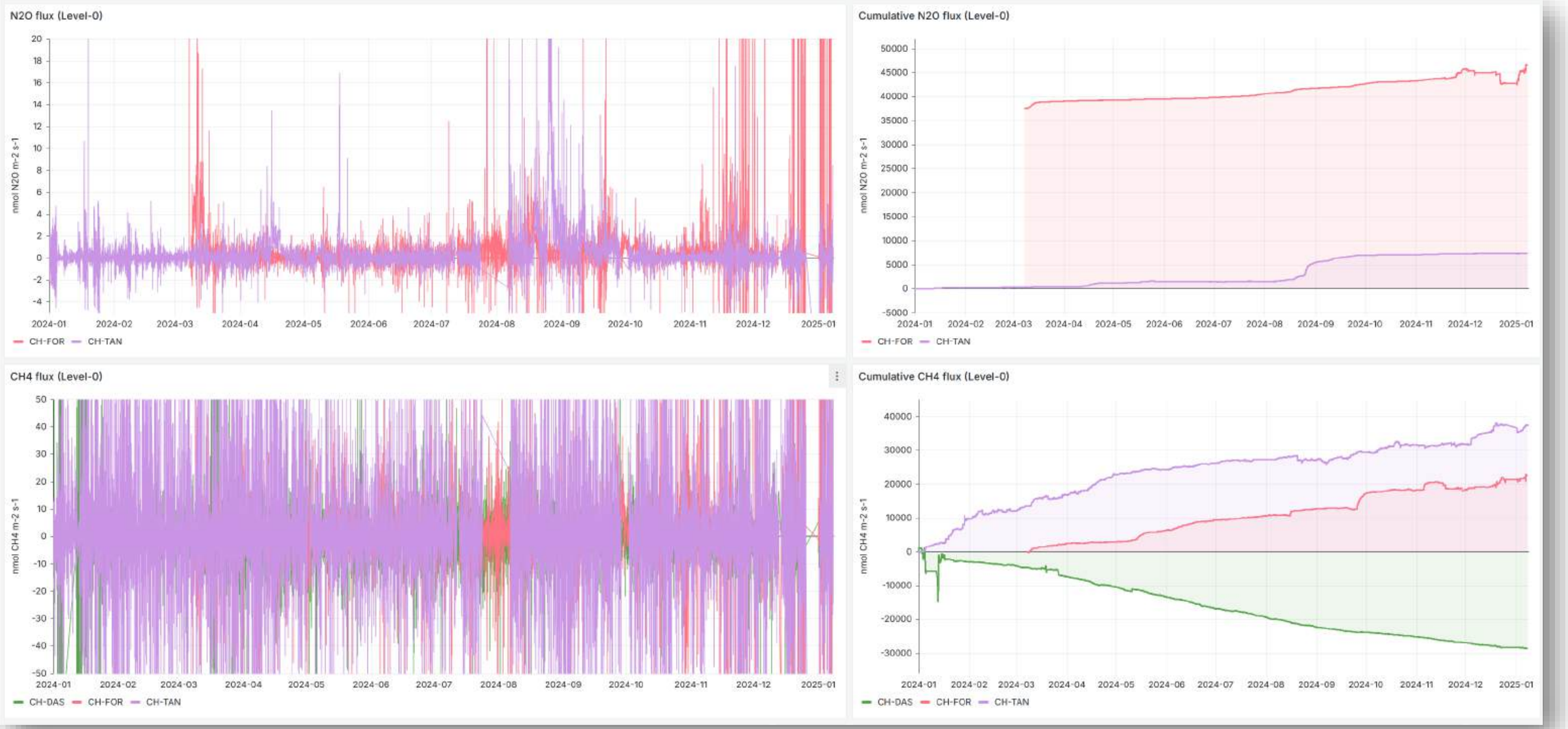




https://dataviews.swissfluxnet.ethz.ch

ALL SITES N2O and CH4 fluxes

2024 complete, 2025

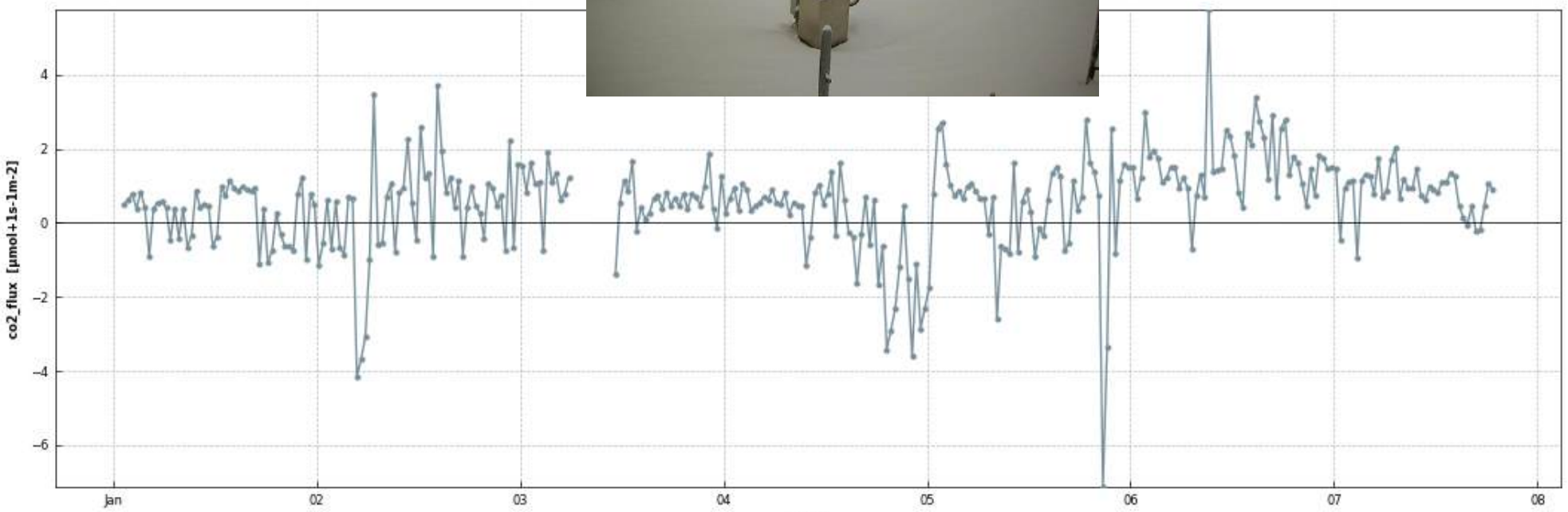


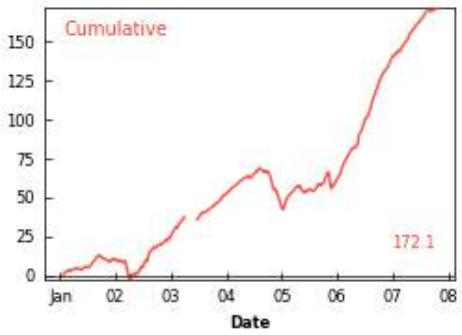
https://dataviews.swissfluxnet.ethz.ch

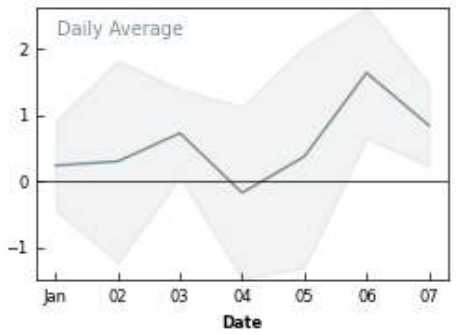
CH-AWS

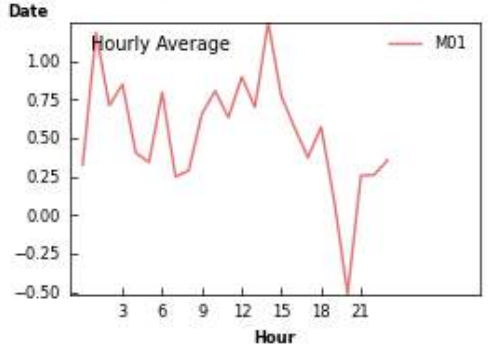
Photo: Matthi Barthel

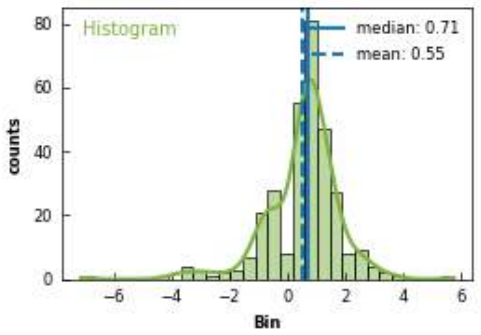
CH-AWS CO2 flux

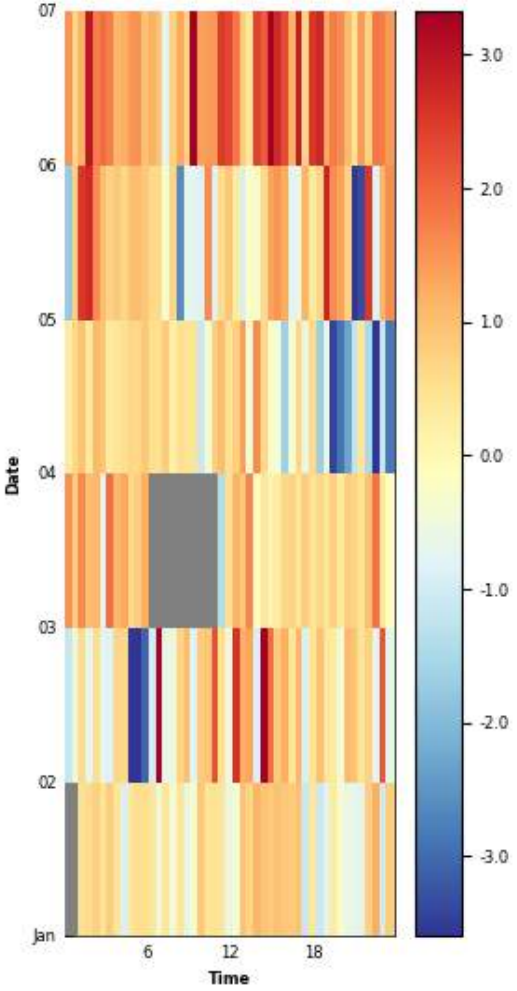






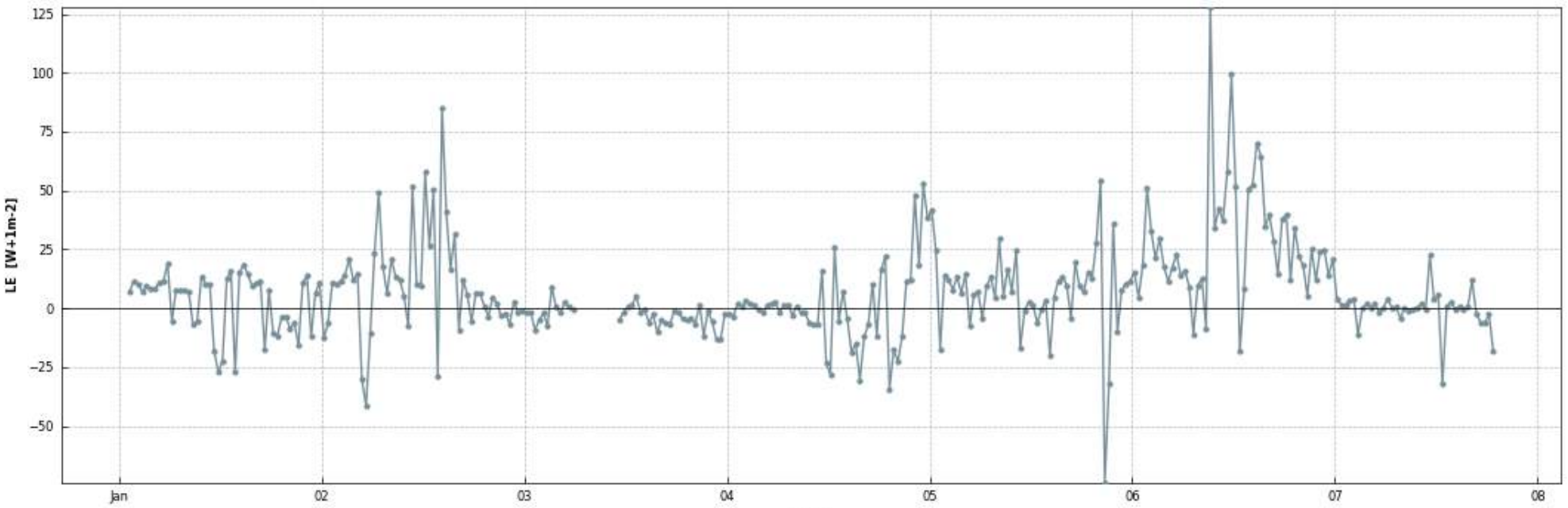






site info

CH-AWS LE


LE [W+1m-2]
125
100
75
50
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−50
Jan
02
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05
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07
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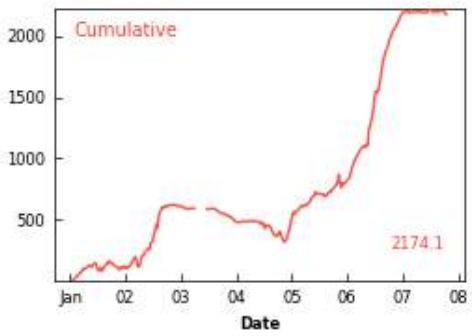
Date


Cumulative
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1500
1000
500
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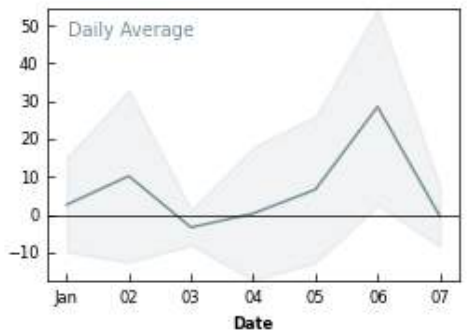
Date


Daily Average
50
40
30
20
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Jan
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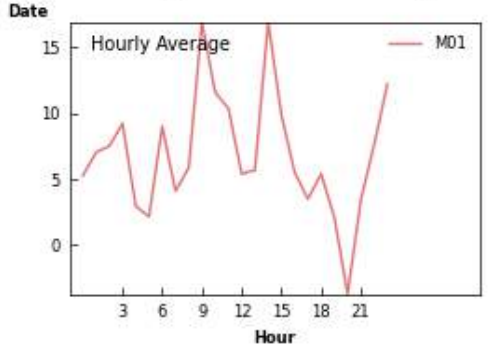
Date


Hourly Average
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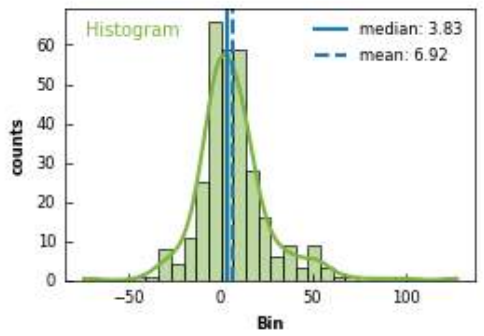
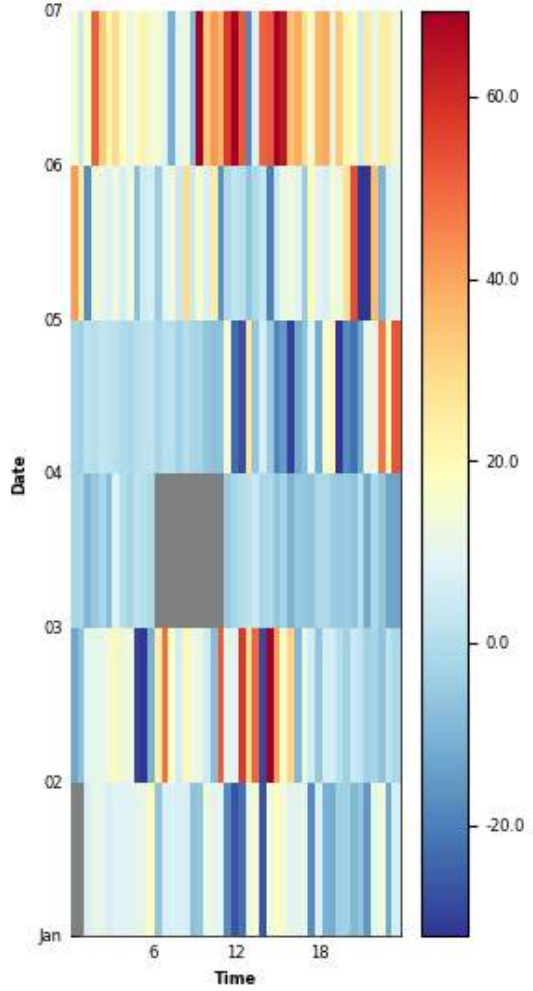
5
0
3
6
9
12
15
18
21
Hour


Histogram
median: 3.83
mean: 6.92
counts
60
50
40
30
20
10
0
−50
0
50
100
Bin


Date
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06
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Jan
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18
Time
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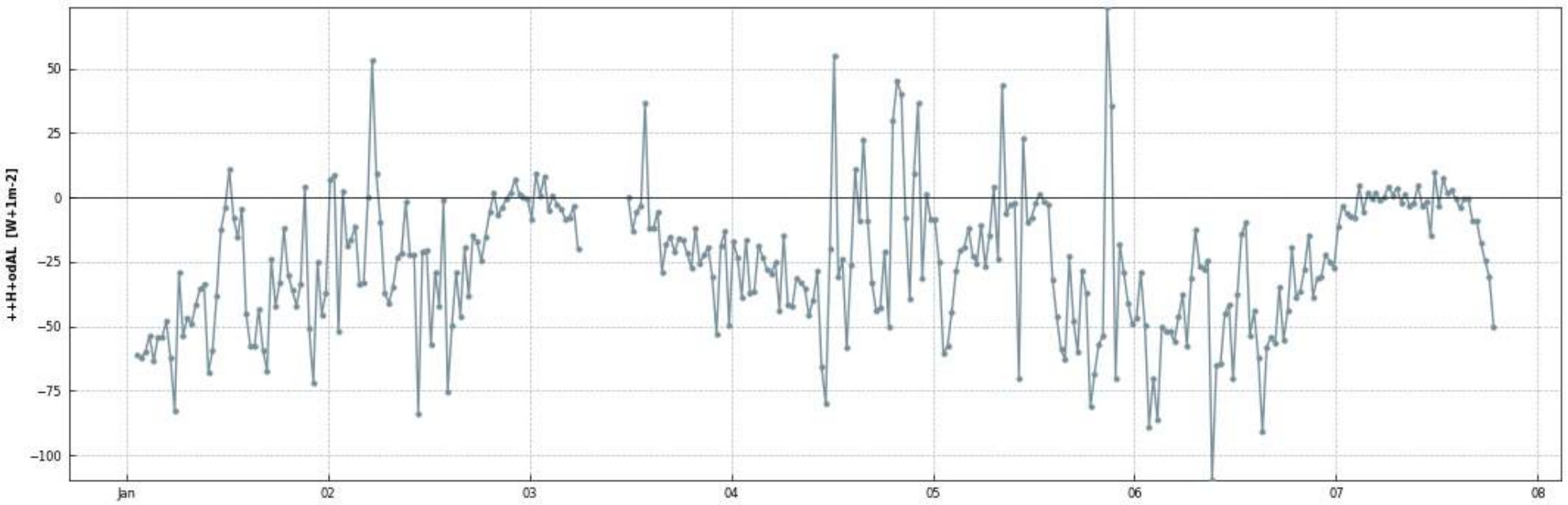
40.0
20.0
0.0
-20.0

CH-AWS H


++H+odAL [W+1m-2]
Jan
02
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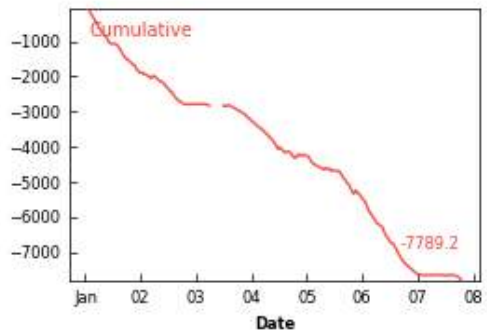
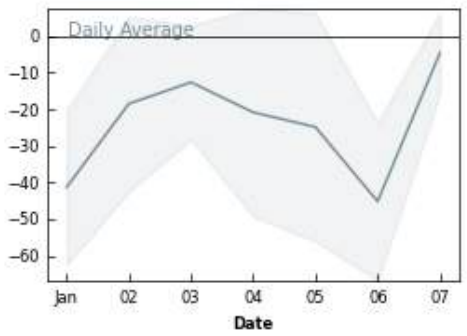
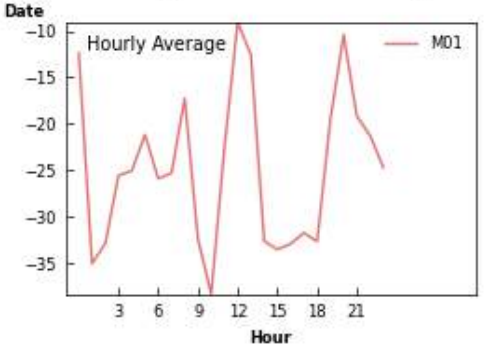
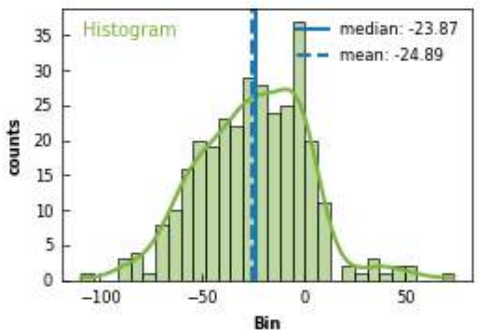
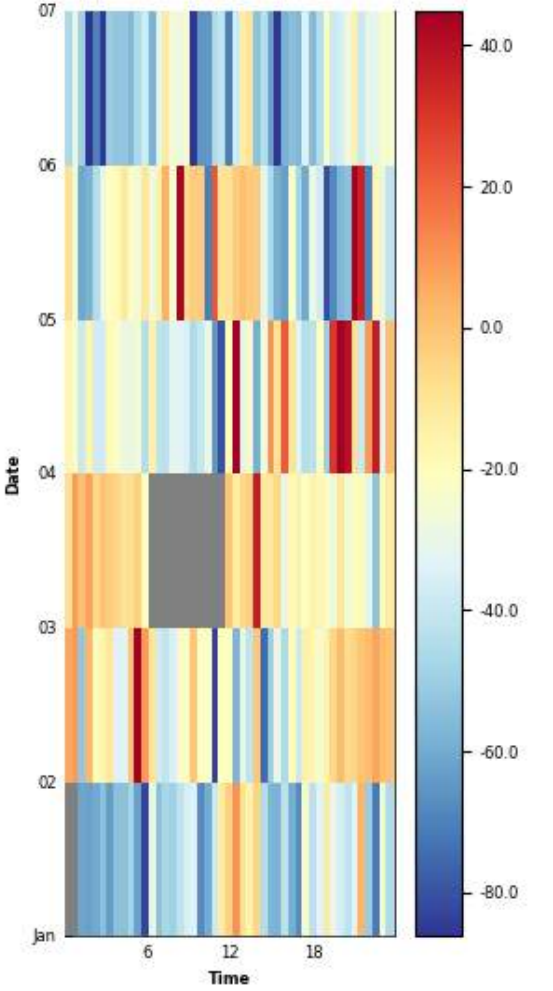

Cumulative
-7789.2
Date


Daily Average
Date


Hourly Average
M01
Hour


Histogram
median: -23.87
mean: -24.89
counts
Bin

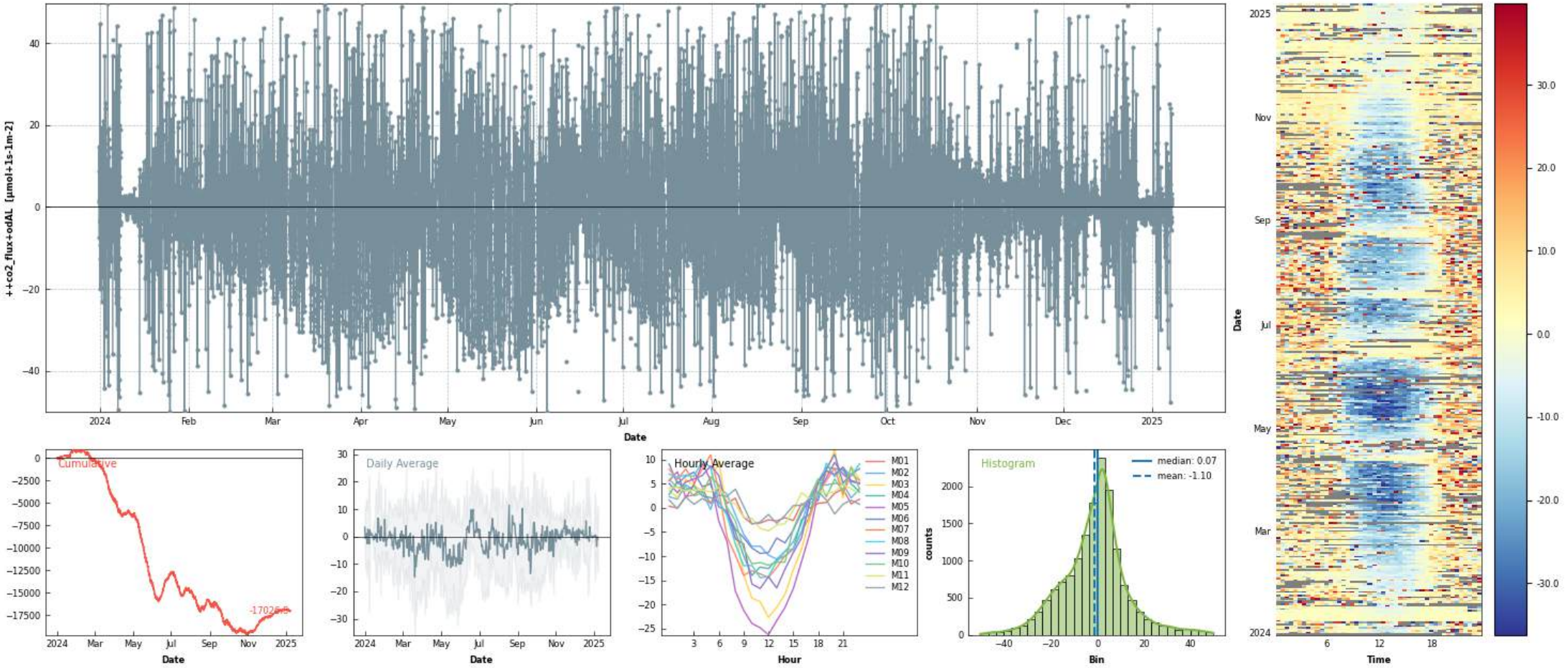

Date
Jan
Time

CH-CHA

Photo: Lukas Hörtnagl

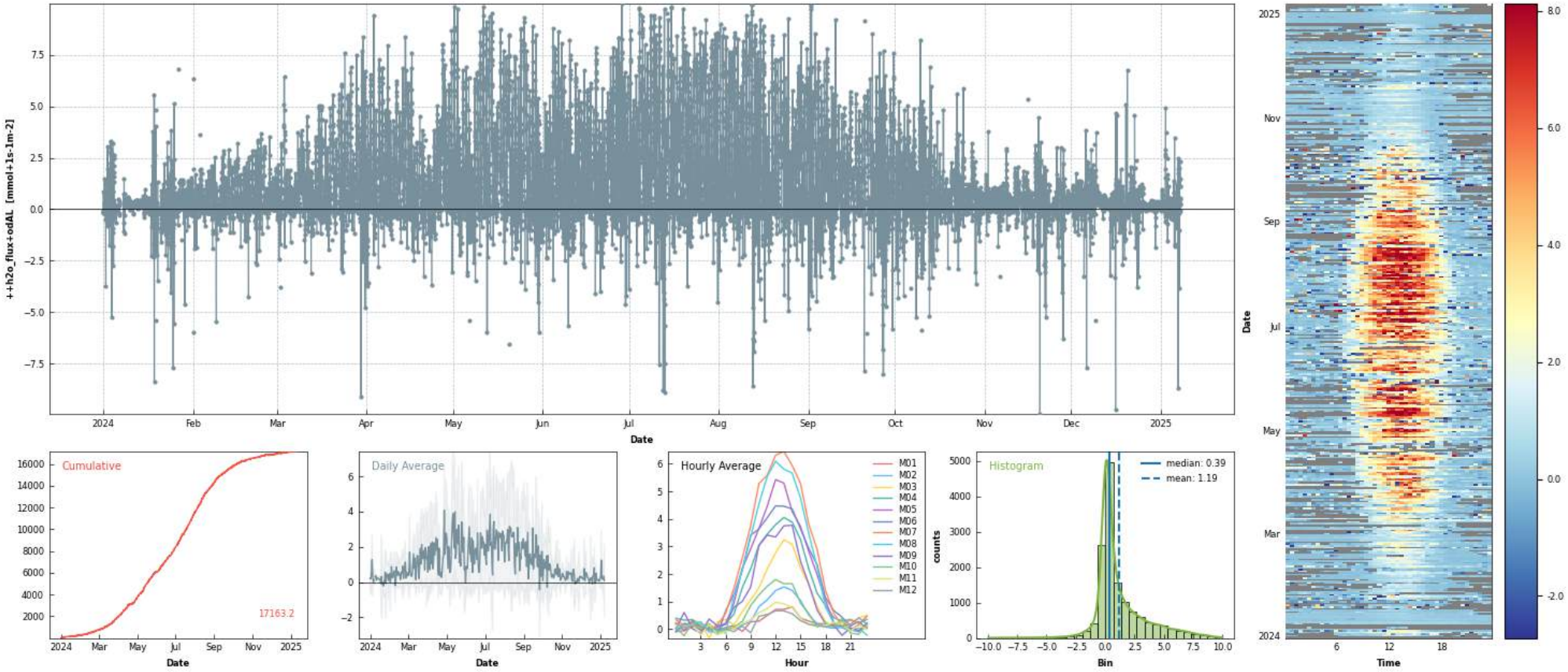
CH-CHA CO2 flux

- Grazing: 2024.01.20 - 2024.01.23
- 1st mowing: 2024.04.11
- 2nd mowing: 2024.06.11 (wet areas – 2024.06.19)
- 3rd mowing: 2024.07.17
- 4th mowing: 2024.08.22
- Grazing: 2024.11.08-2024.11.19



site info

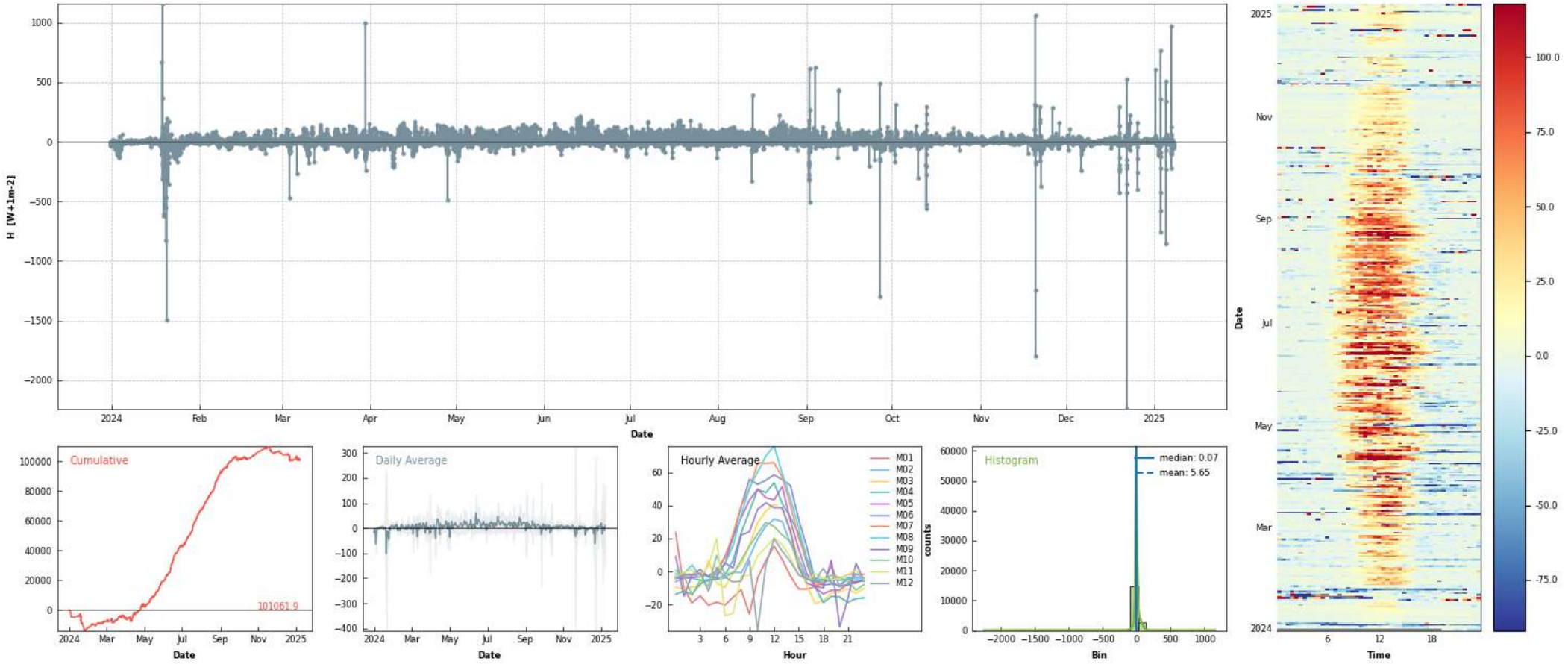
CH-CHA H2O flux



site info

CH-CHA H

Recent spikes in H & w_rot: snow & frost



site info

CH-DAV

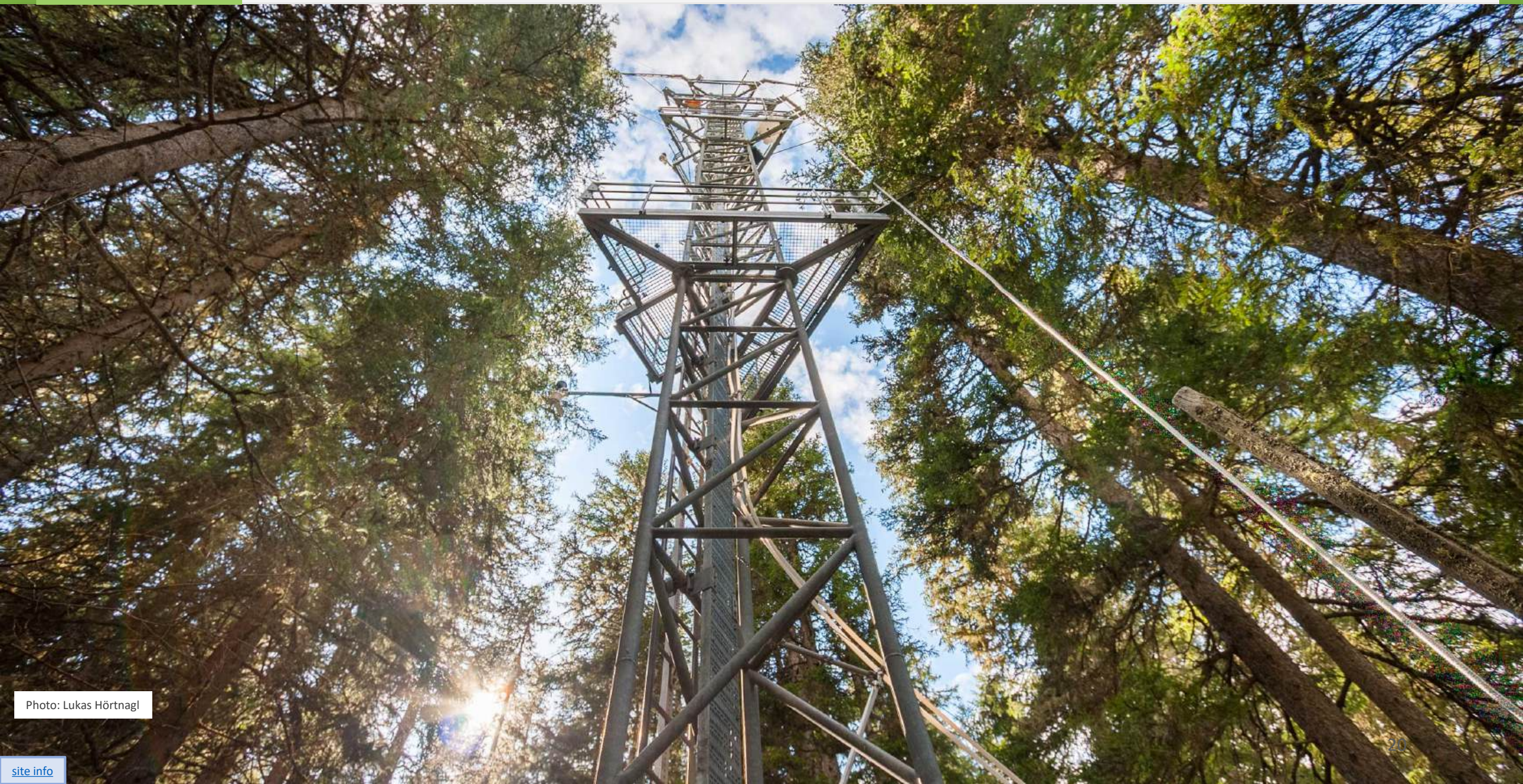


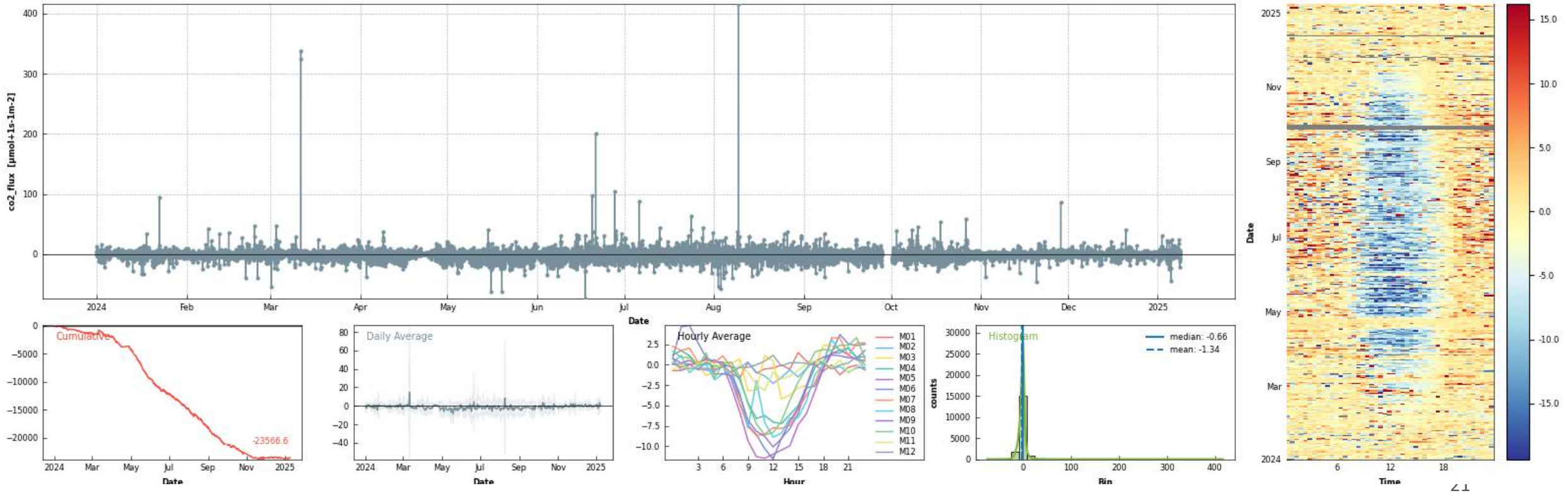
Photo: Lukas Hörtnagl

site info

CH-DAV CO2 flux

- Cold period mid-April caused an interruption in CO_2 uptake
- First snow on 13-14th September
- Two longer gaps: First one due to sonic failure and most recent one due to IRGA connection issues (data only coming in intermittently, frequency was 16 instead of 20 Hz, maybe some fluxes can still be calculated with some special eddypro settings?) → Yes, missing sample allowance was set to 30% (normally 10%)

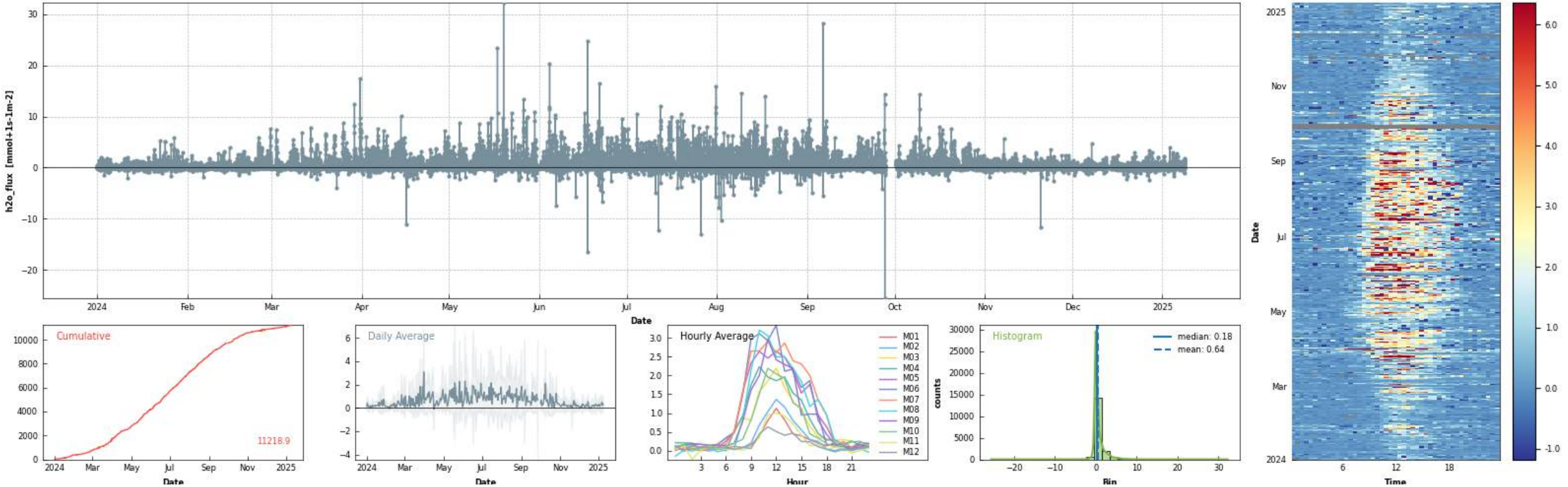
Missing samples allowance : 30 [%]
Flux averaging interval : 30 [min]



site info

CH-DAV H2O flux

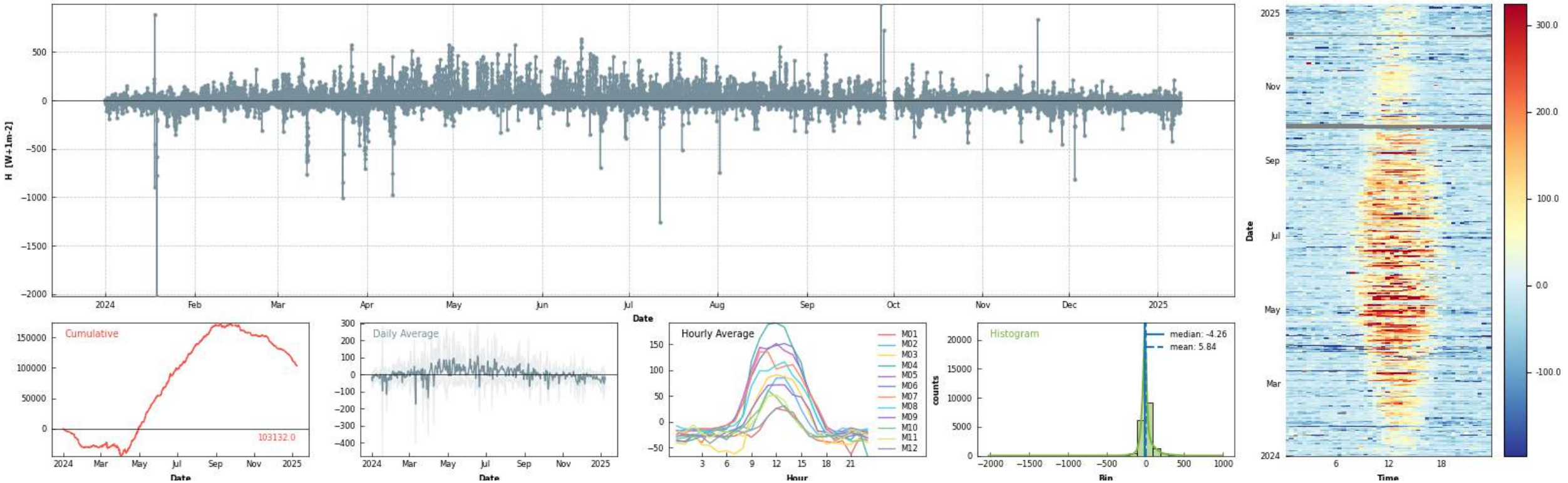
- Diurnal amplitude reduced mid-April and mid-September, coinciding with snowy, cold period
- Similar to the CO_2 flux the H_2O flux is affect by the IRGA connection problems in November



site info

CH-DAV H

- There was a sonic failure end of September which caused the only gap of the year
- Sonic seems fine, IRGA issue not visible here



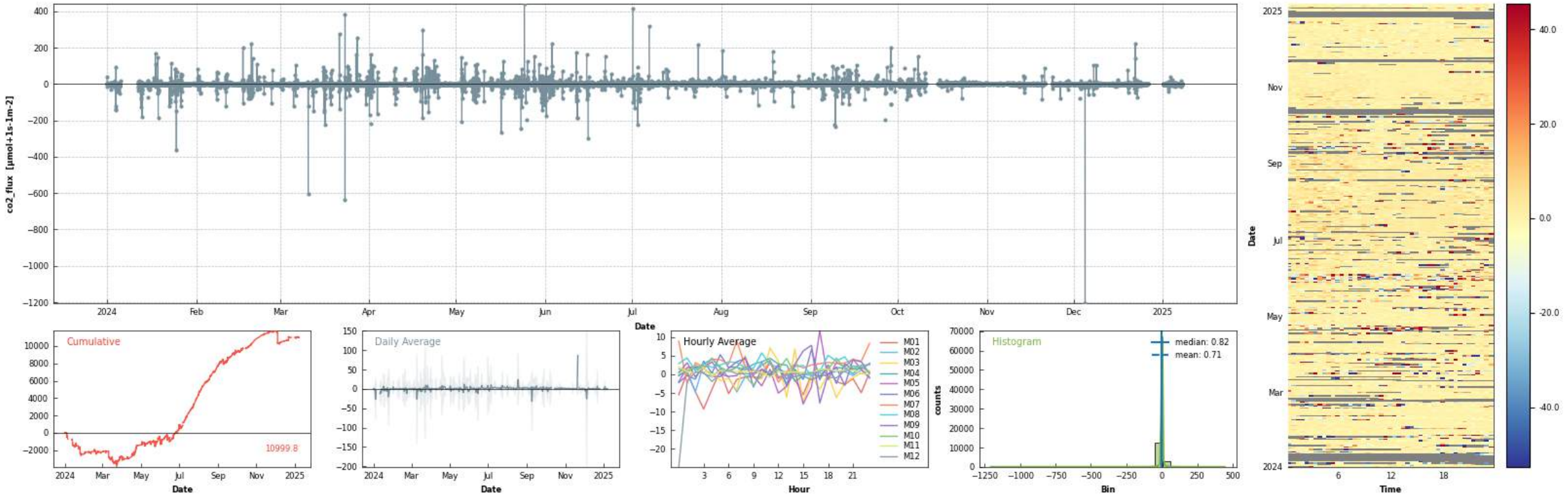
site info

CH-DAS

site info

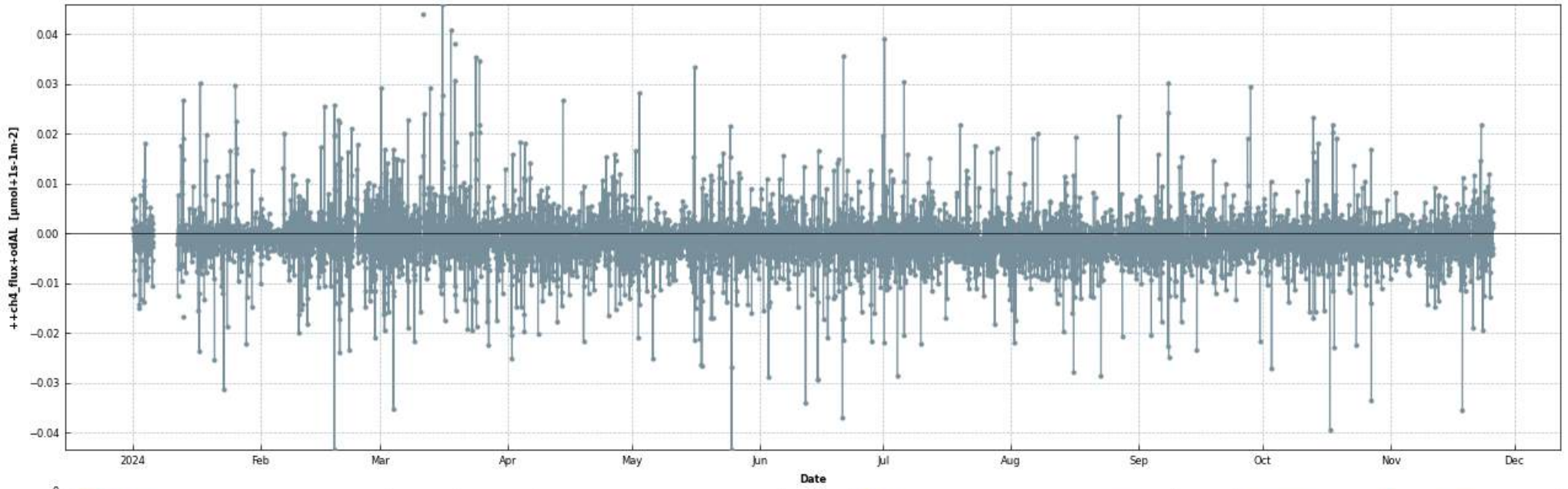
Photo: Luana Krebs

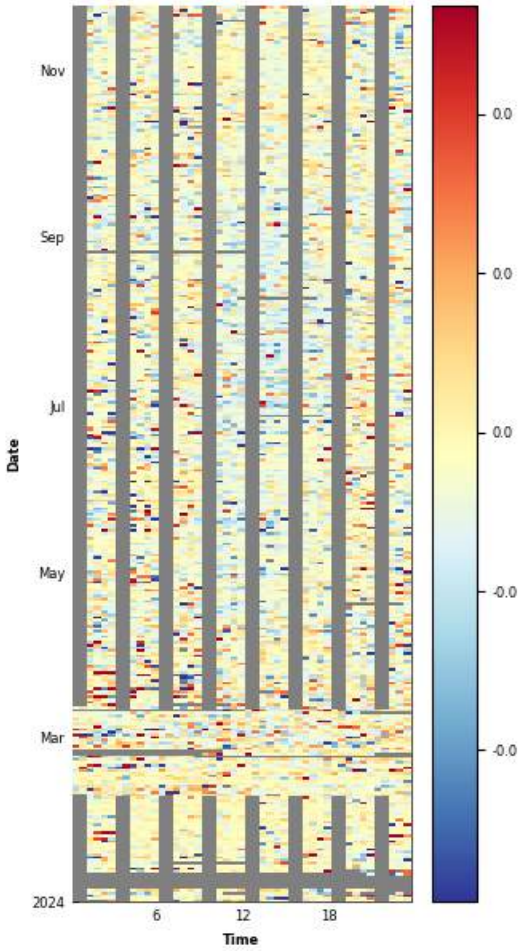
CH-DAS CO2 flux

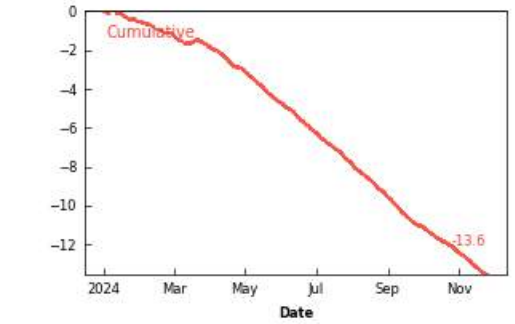


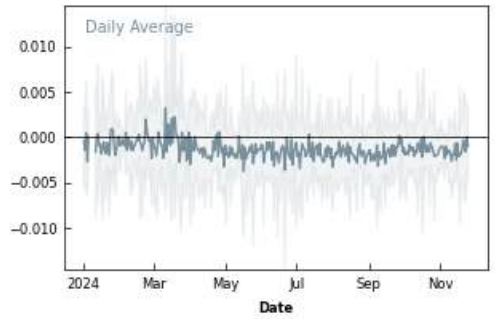
site info

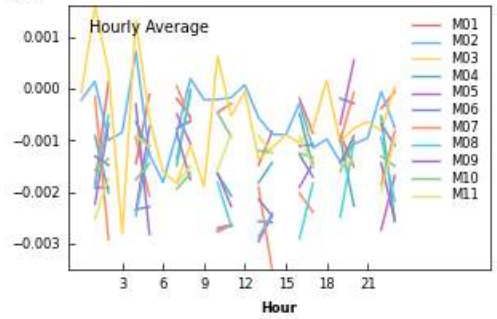
CH-DAS CH4 flux

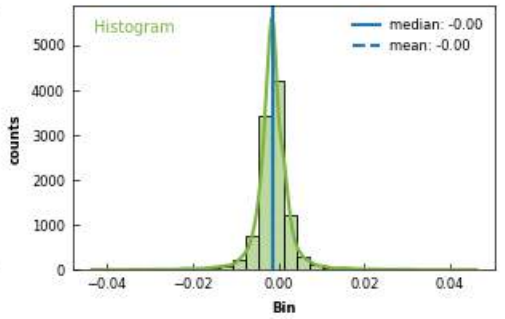






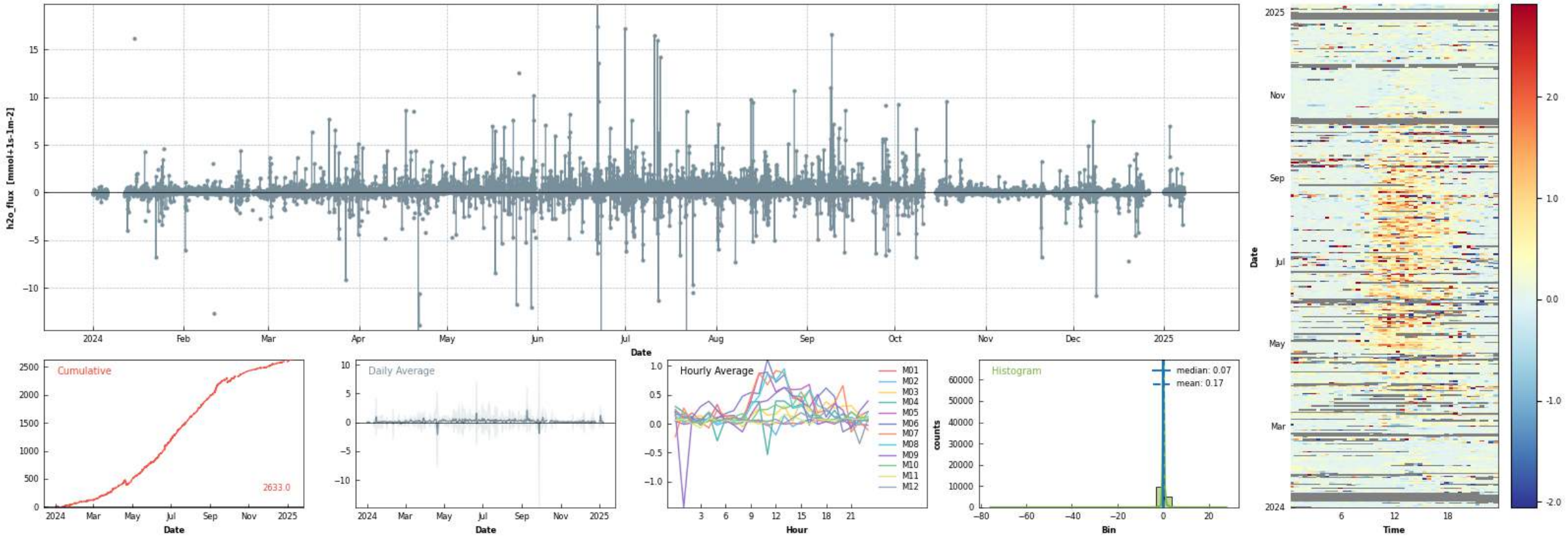






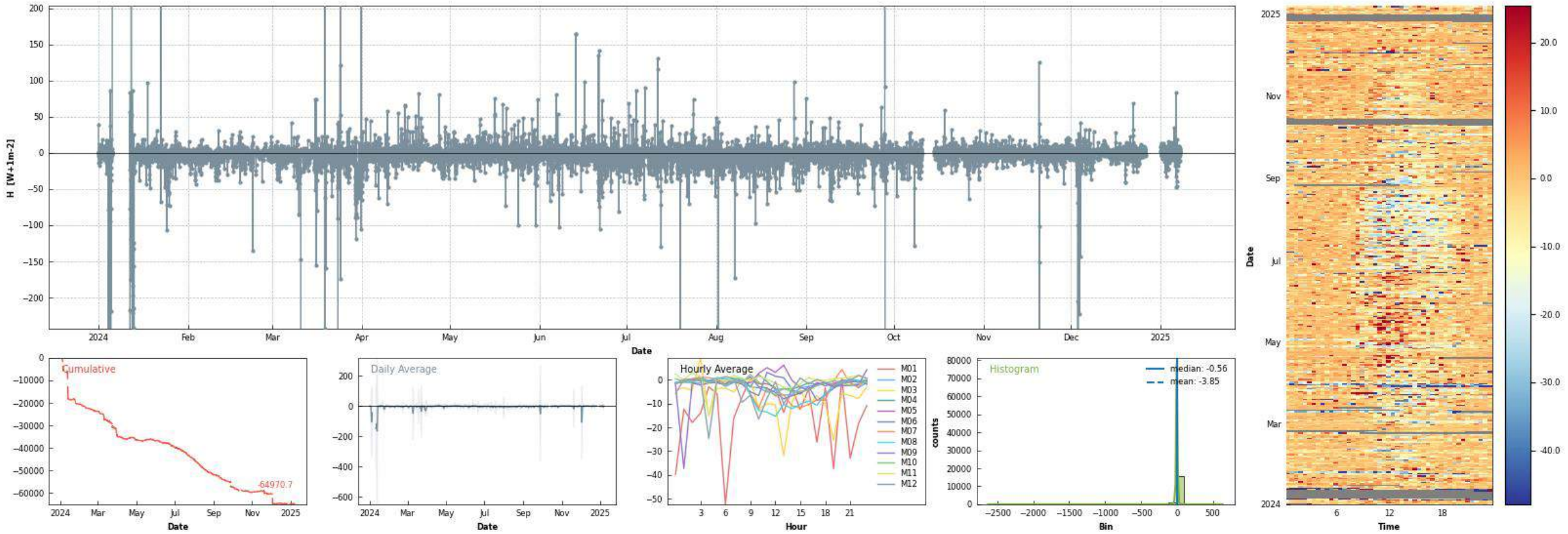
site info

CH-DAS H2O flux



site info

CH-DAS H



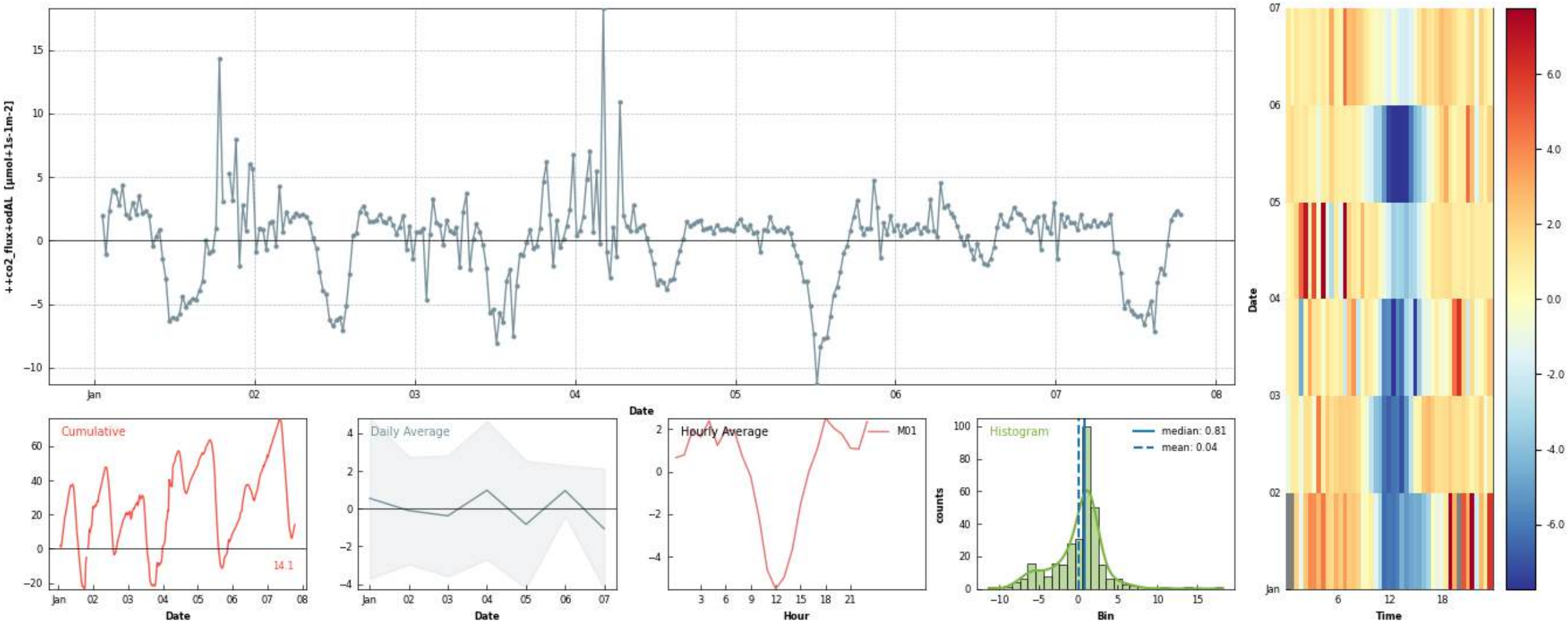
site info

CH-FOR

Photo: Lorenz Allemann

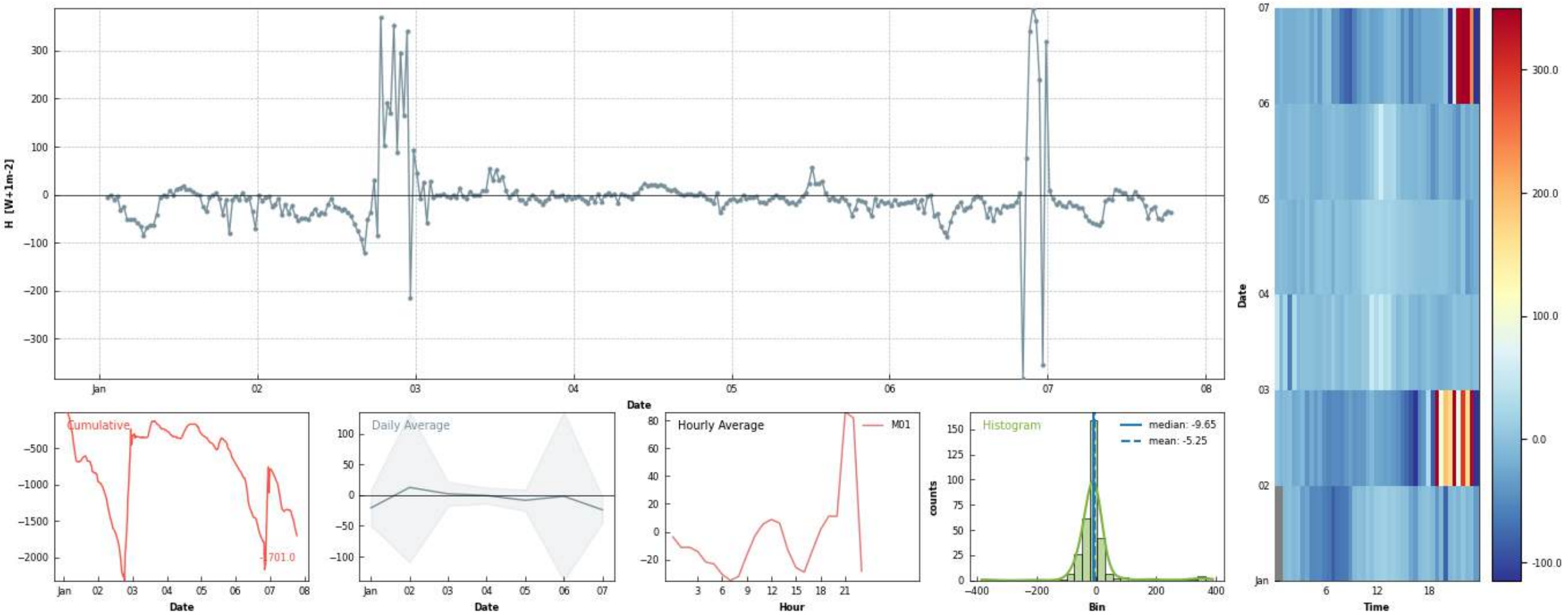
site info

CH-FOR CO2 flux

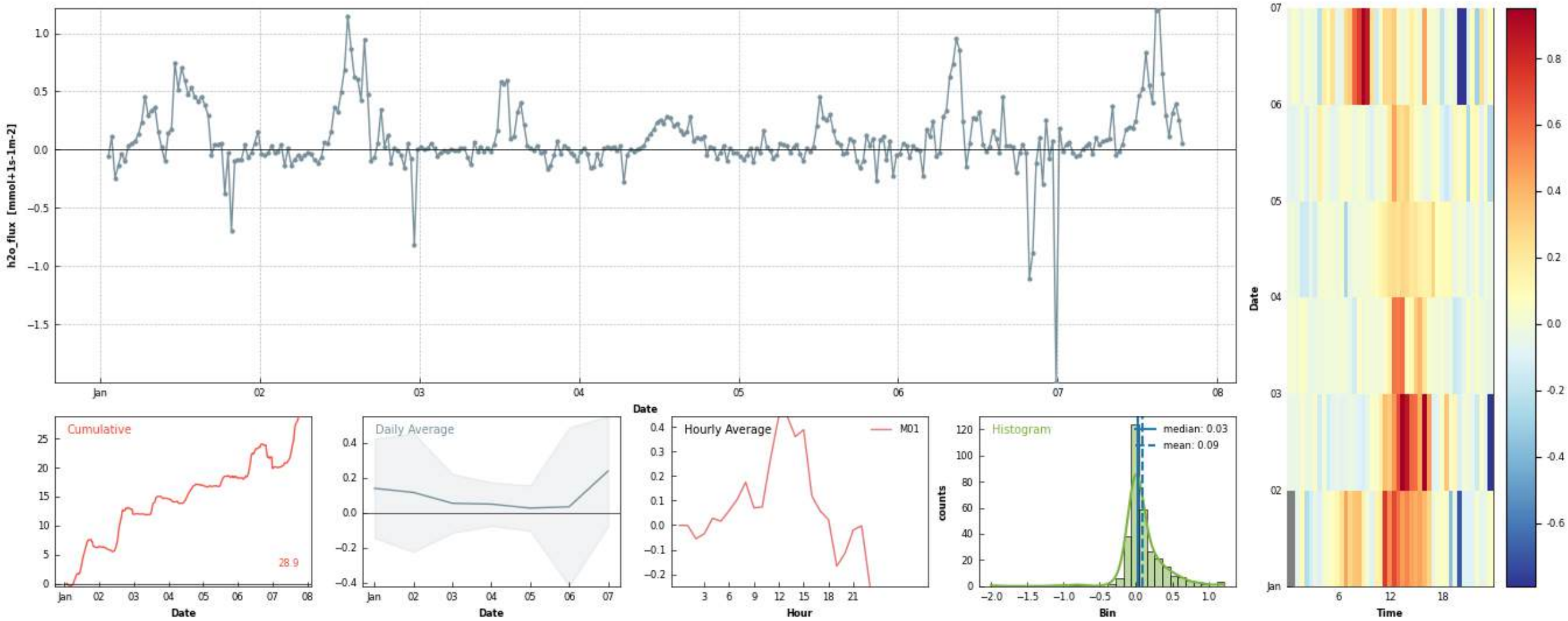


site info

CH-FOR H

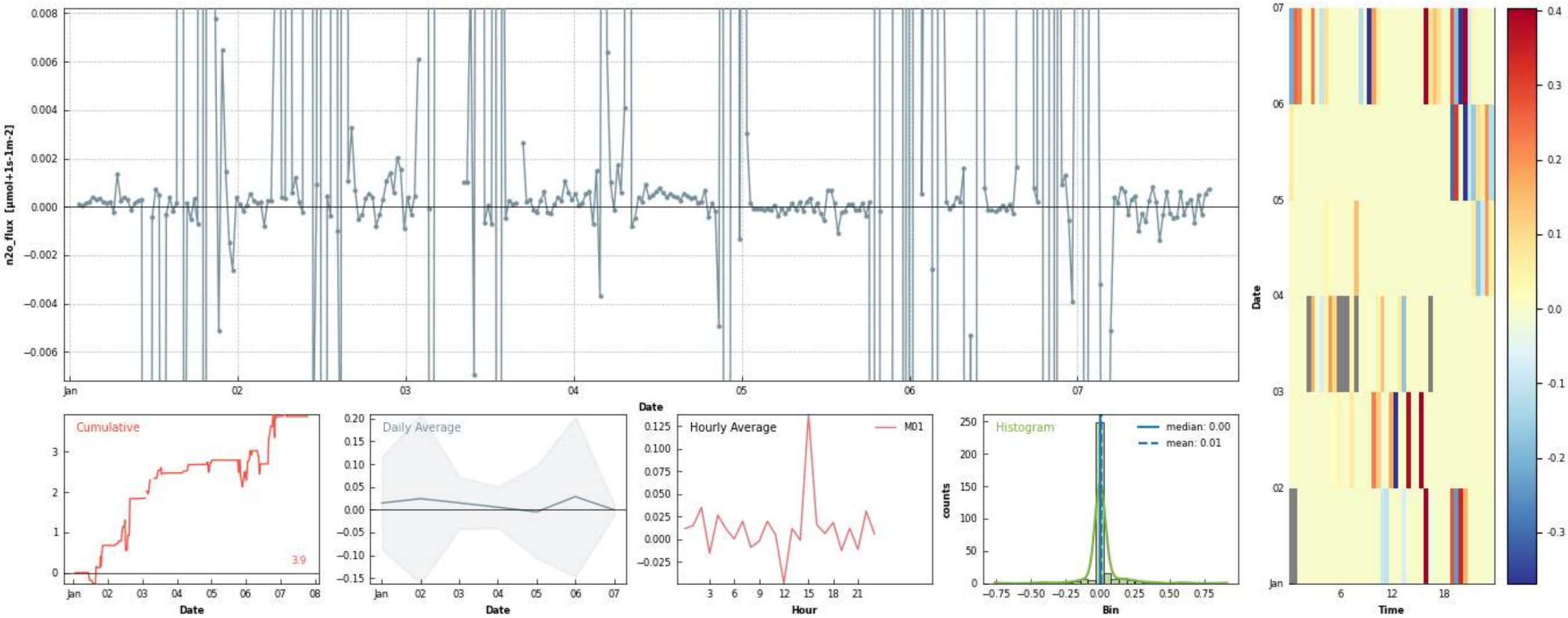


site info


h2o_flux [mmol+1s-1m-2]
Jan
02
03
04
05
06
07
08
Cumulative
28.9
Date
Daily Average
Date
Hourly Average
M01
Hour
Histogram
median: 0.03
mean: 0.09
counts
Bin
Date
Time

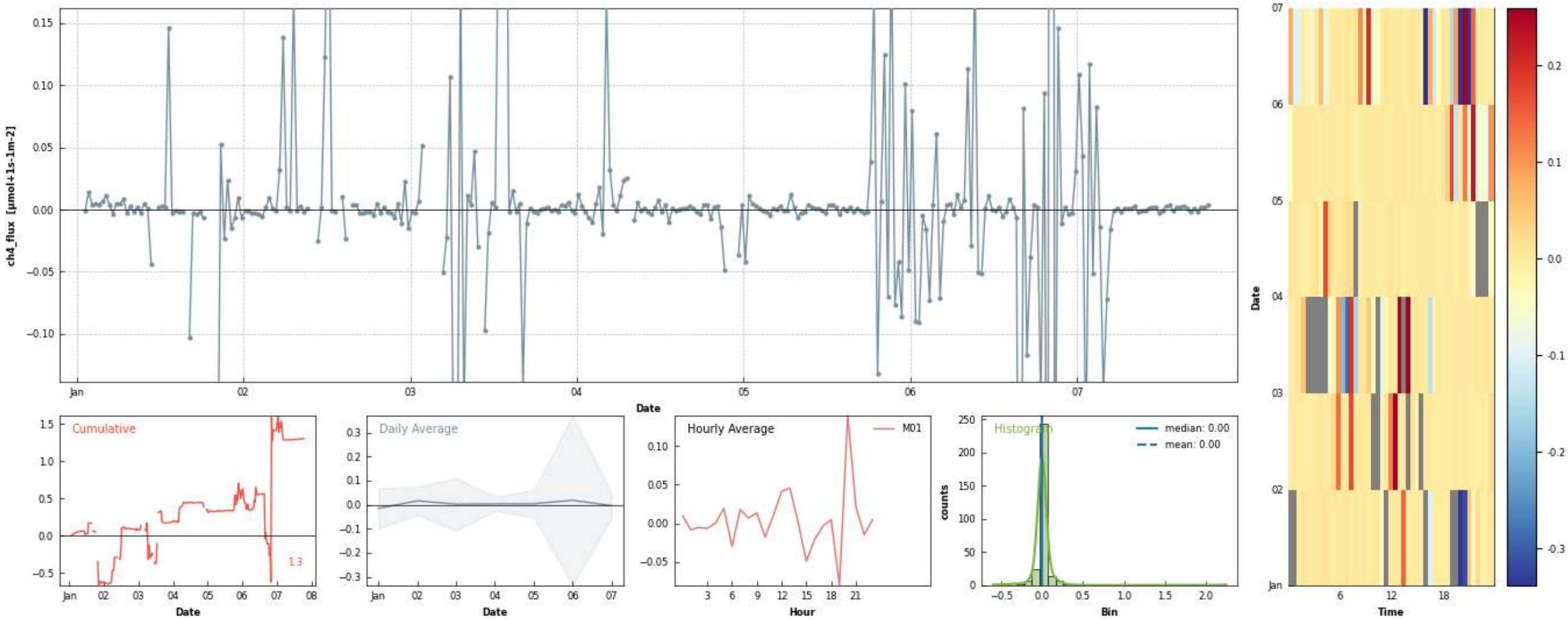
site info

CH-FOR N2O flux



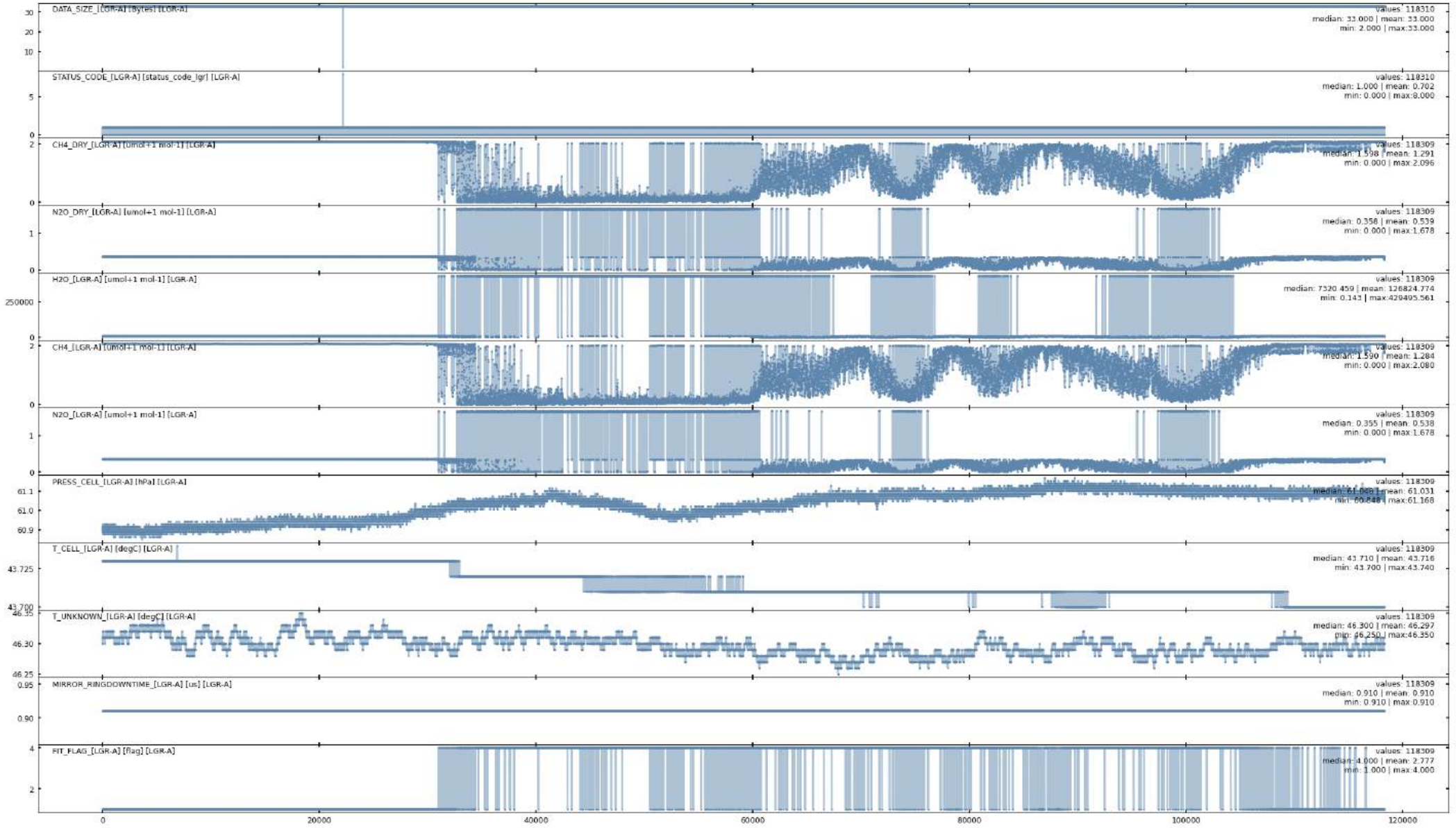
site info

CH-FOR CH4 flux



site info

- Something strange going on with the LGR….



CH-FRU

Photo: Lukas Hörtnagl

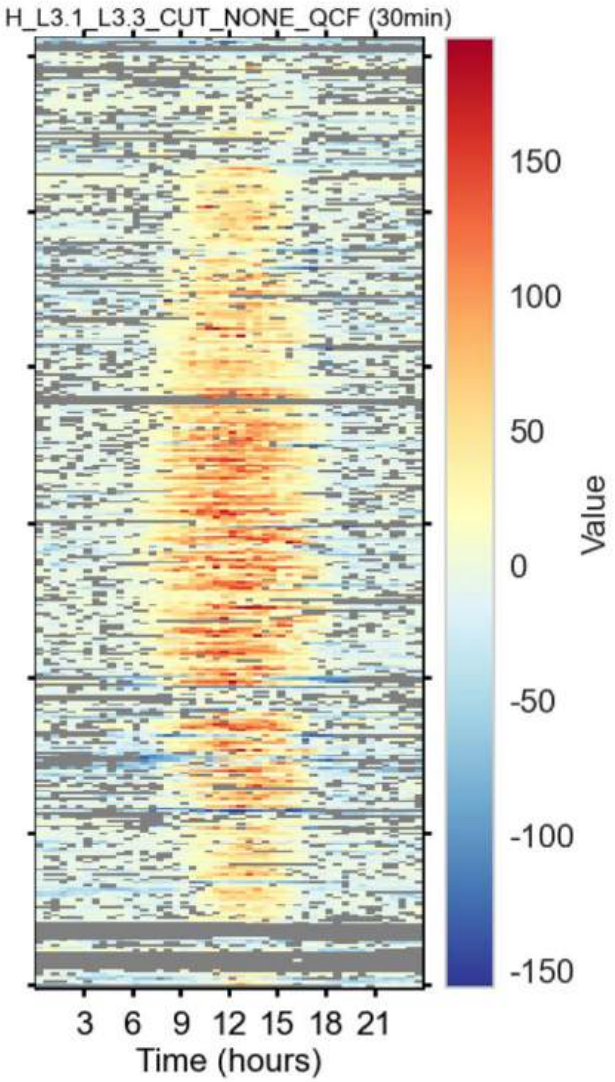
site info

CH-FRU Fluxes H, H2O, CO2

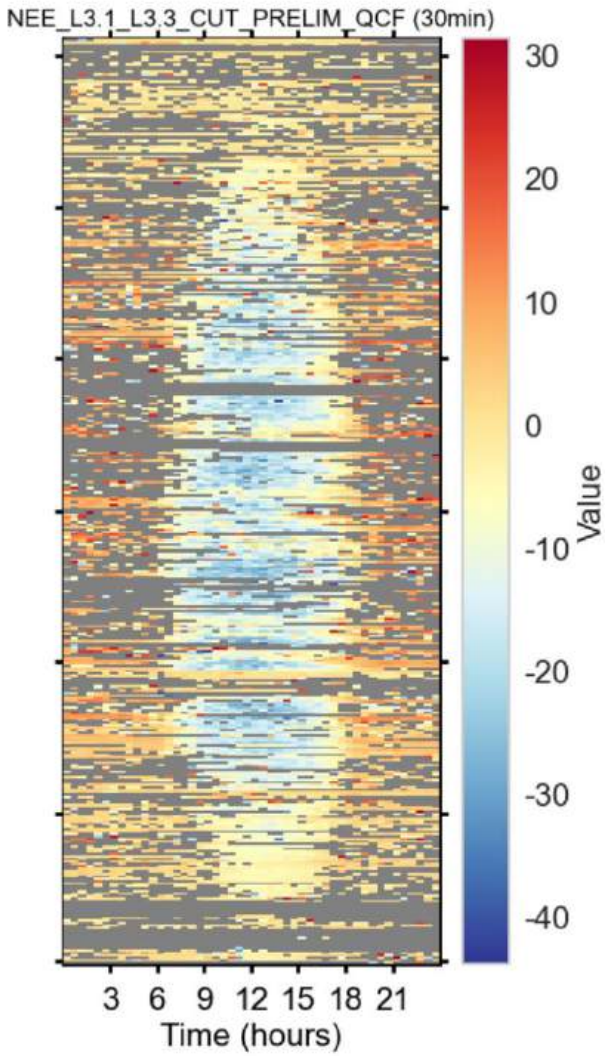
MAIN TOWER (sonicread)

2024 complete, some days 2025

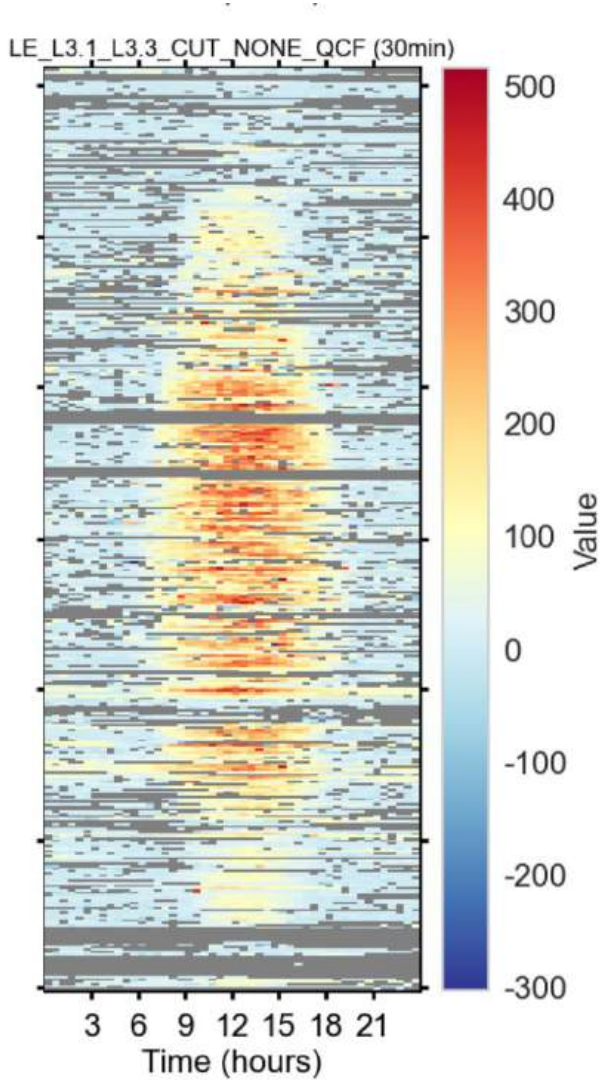
H



CO2 flux



LE



- With preliminary QCF using the diive notebook notebooks/FluxProcessingChain/QuickFluxProcessingChain.ipynb
- High and medium quality fluxes
- Preliminary outlier removal
- With preliminary USTAR filtering for NEE

Already done in Jan 2025: newly converted bico, L0 fluxes calculated for whole year in one run ✔

site info

CH-HON

Photo: Lukas Hörtnagl

site info

CH-HON CO2 and H2O flux

- First fluxes for CH-HON
- Test plantations with coniferous and deciduous tree species from different places of origin, research is being carried out into what the forest of tomorrow could look like. This area in the Zurich forest laboratory is one of 59 test areas throughout Switzerland. The site is part of the [Waldlabor Zürich].

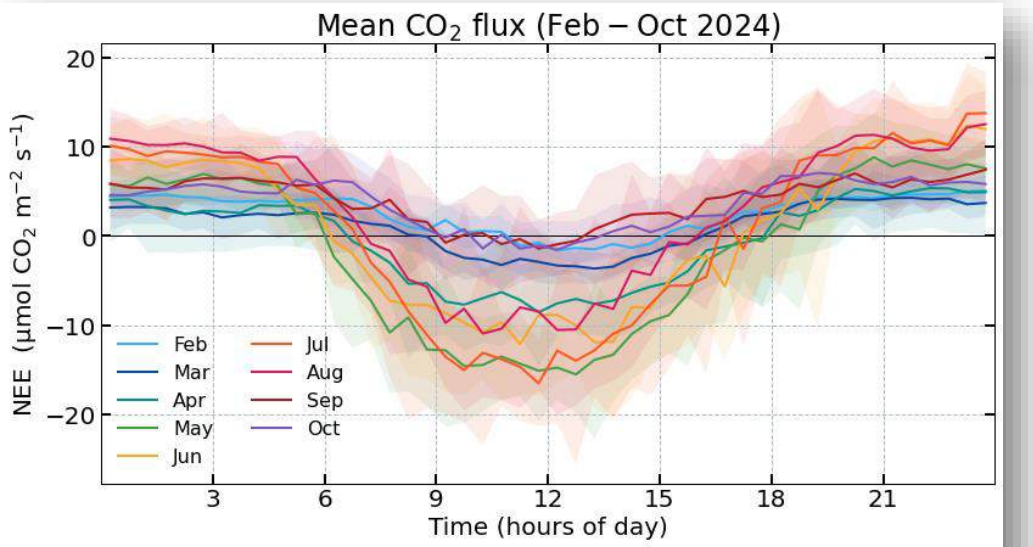
Photo: Lukas Hörtnagl

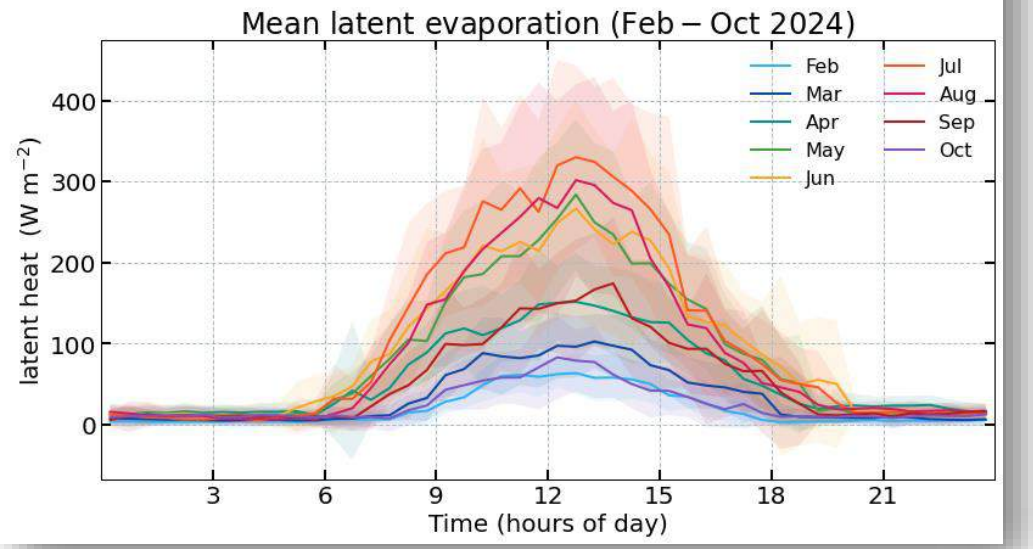
May 2024

Flux footprint area

Photo: Lukas Hörtnagl

Sep 2024





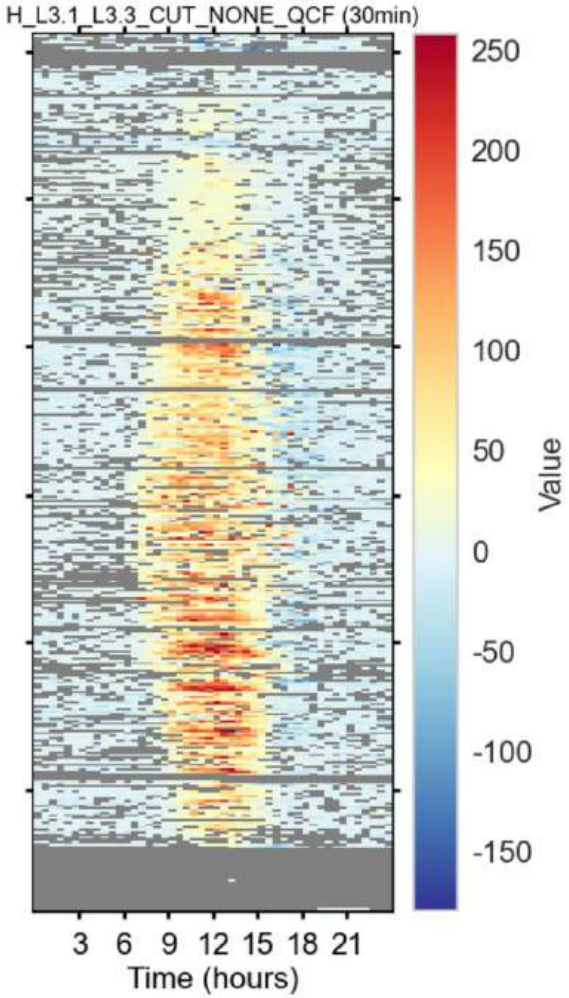
site info

CH-HON Fluxes H, H2O, CO2

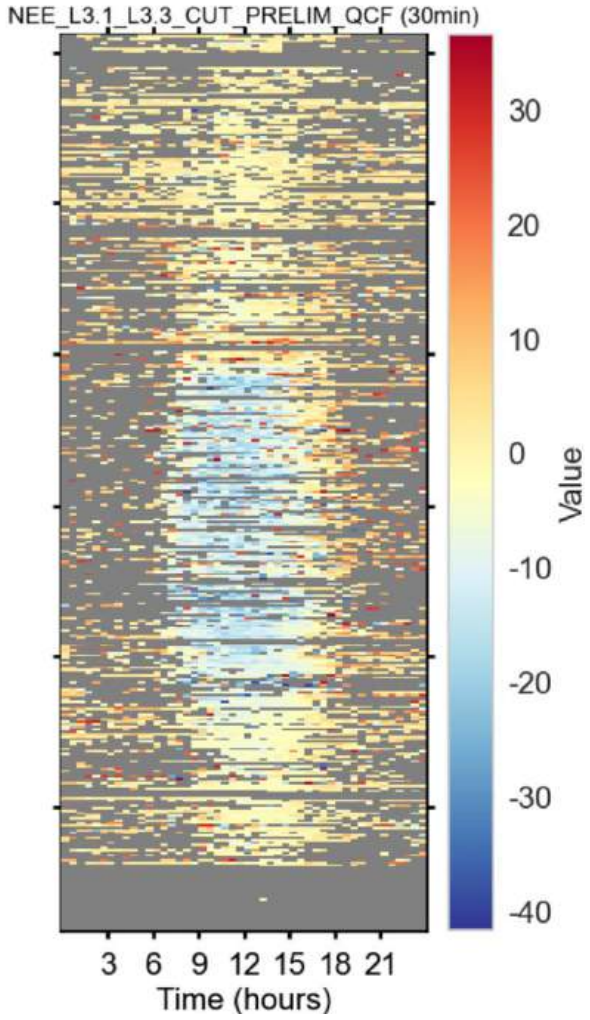
2024 complete, some days 2025

H

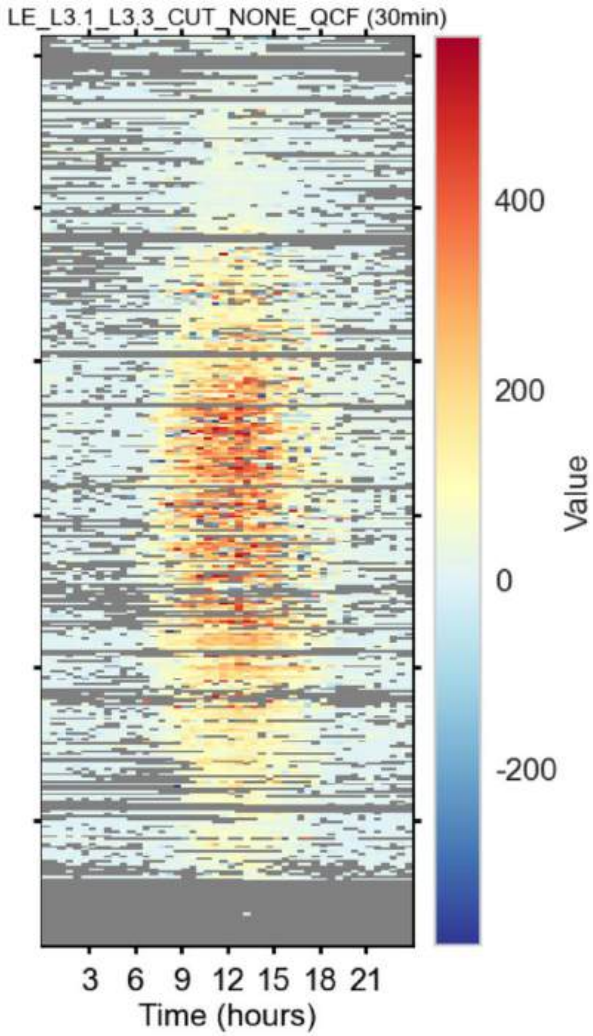
undergrowth removed end of August



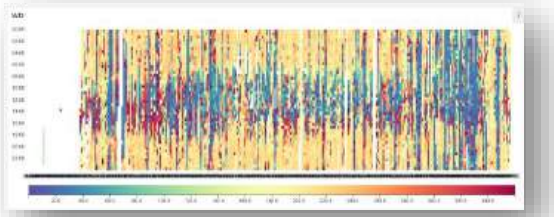
CO2 flux



LE



- With preliminary QCF using the diive notebook notebooks/FluxProcessingChain/QuickFluxProcessingChain.ipynb
- Highest- and medium-quality fluxes
- Preliminary outlier removal
- With preminiary USTAR filtering for NEE



- Wind direction
- red/blue/green = footprint of interest
- Orange = behind tower, on path
- Will need QC with wind direction included

site info

CH-LAE

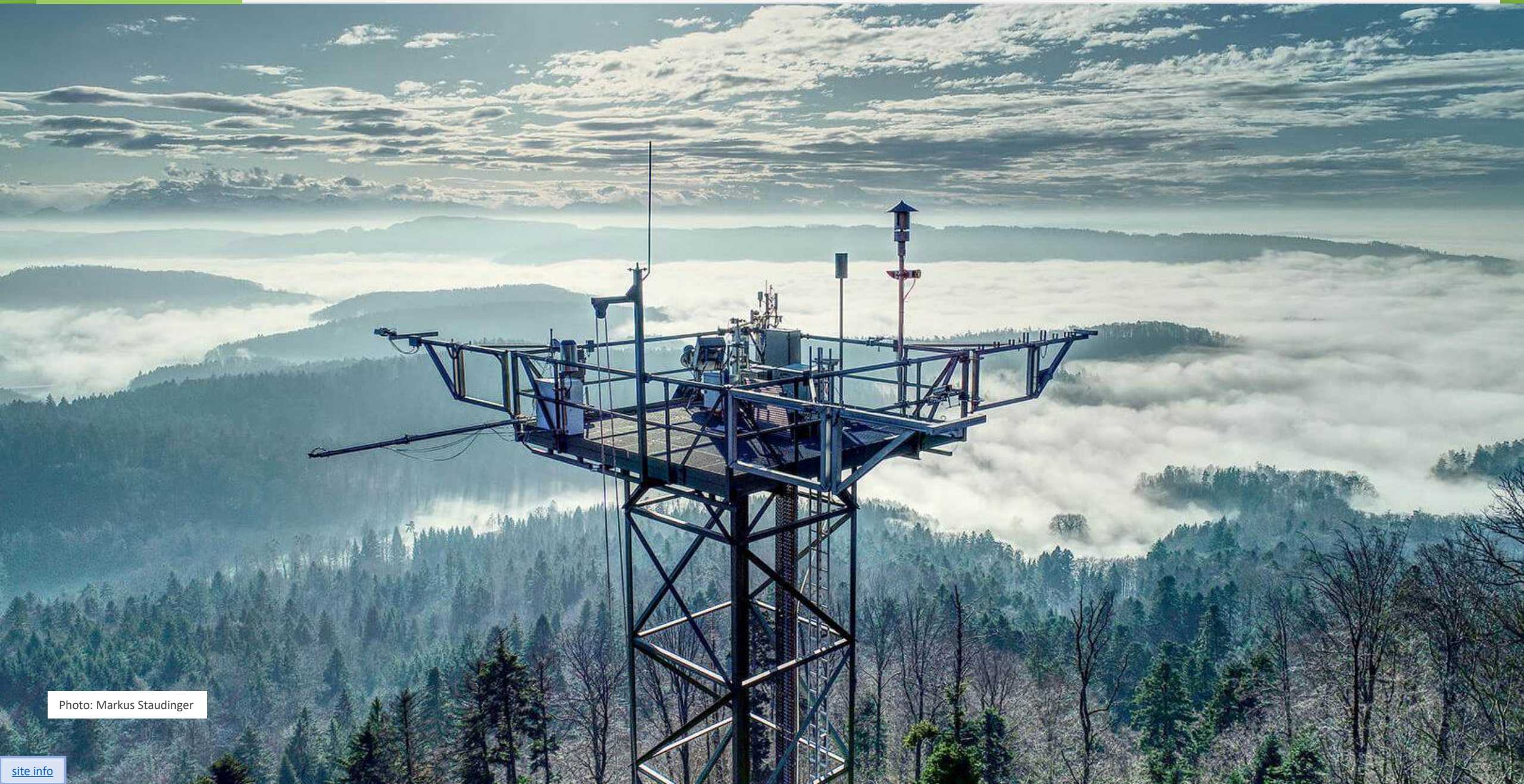


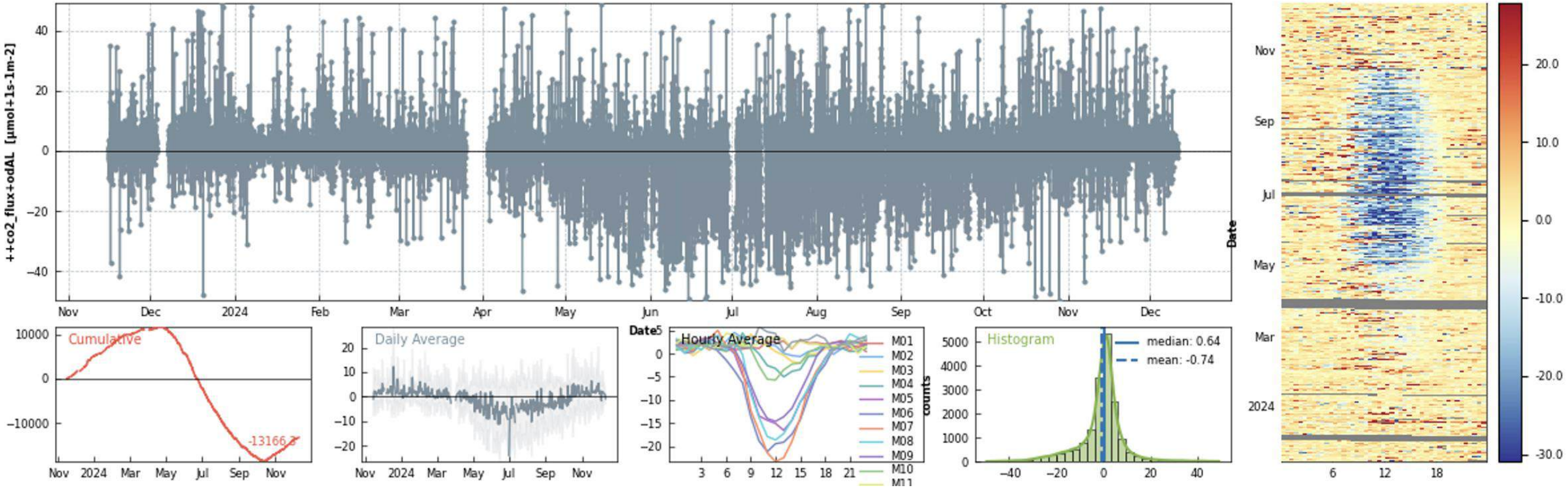
Photo: Markus Staudinger

site info

CH-LAE CO2 flux

NOT CHECKED IN DETAIL DURING THIS MEEITNG

Outlier removed CO2 flux. Lägeren tried its best!



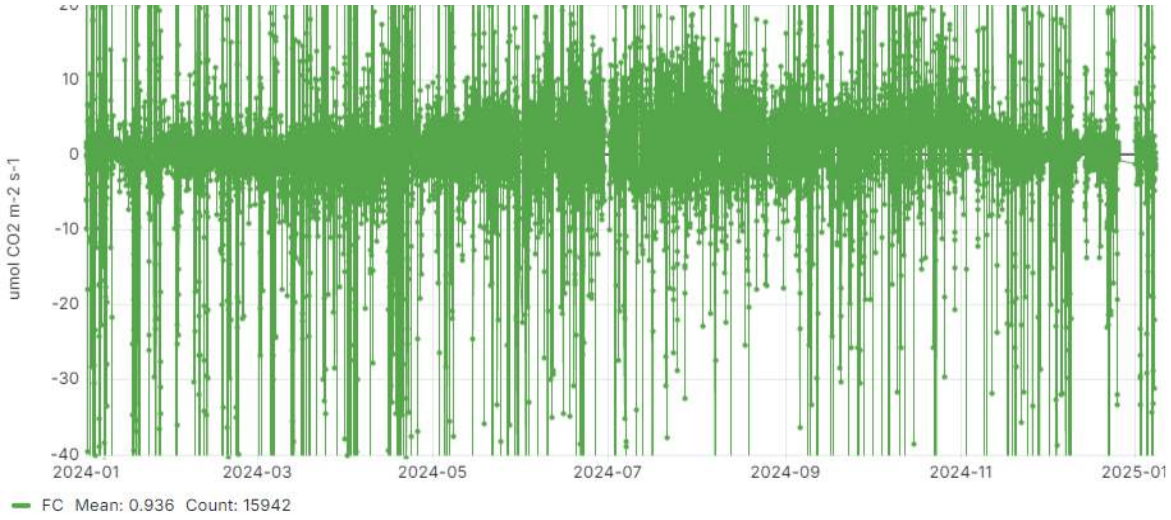
site info

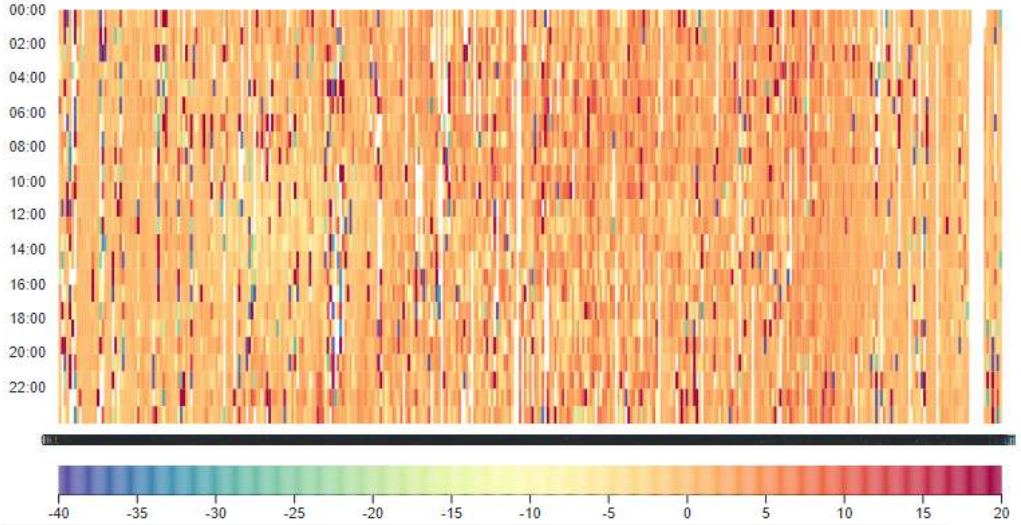
CH-LAS

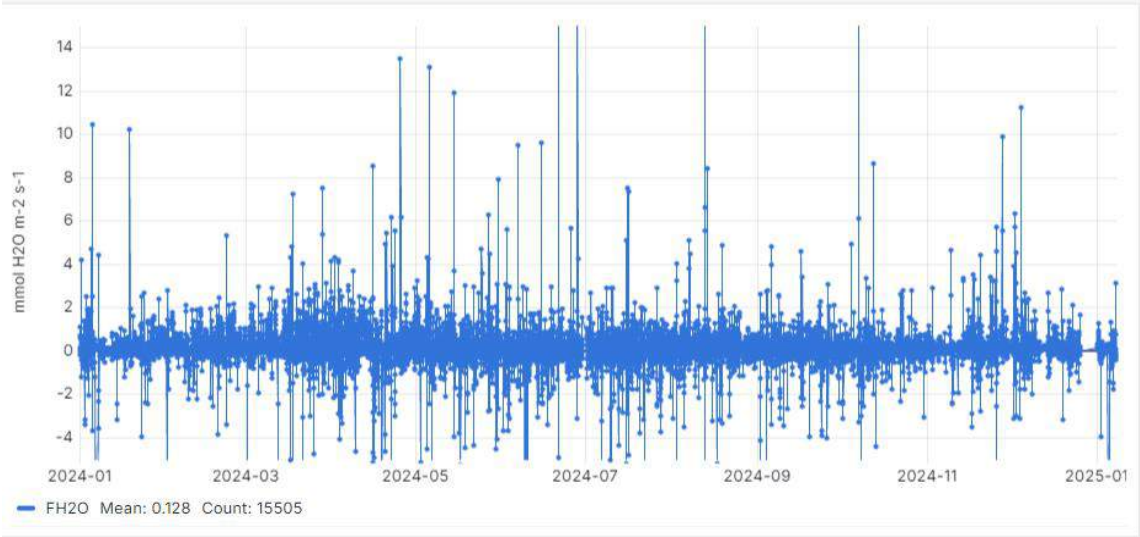
Photo: Liliana Scapucci

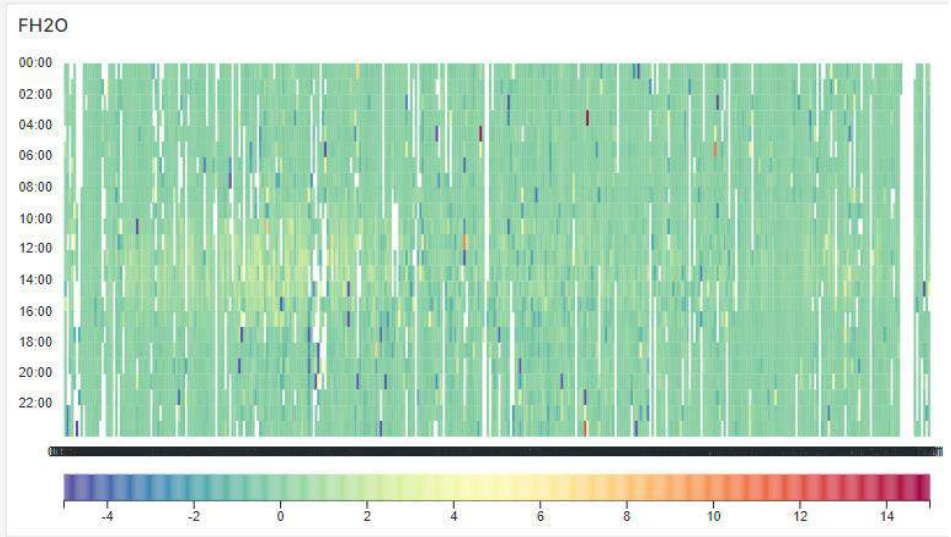
site info

CH-LAS CO2 flux









site info

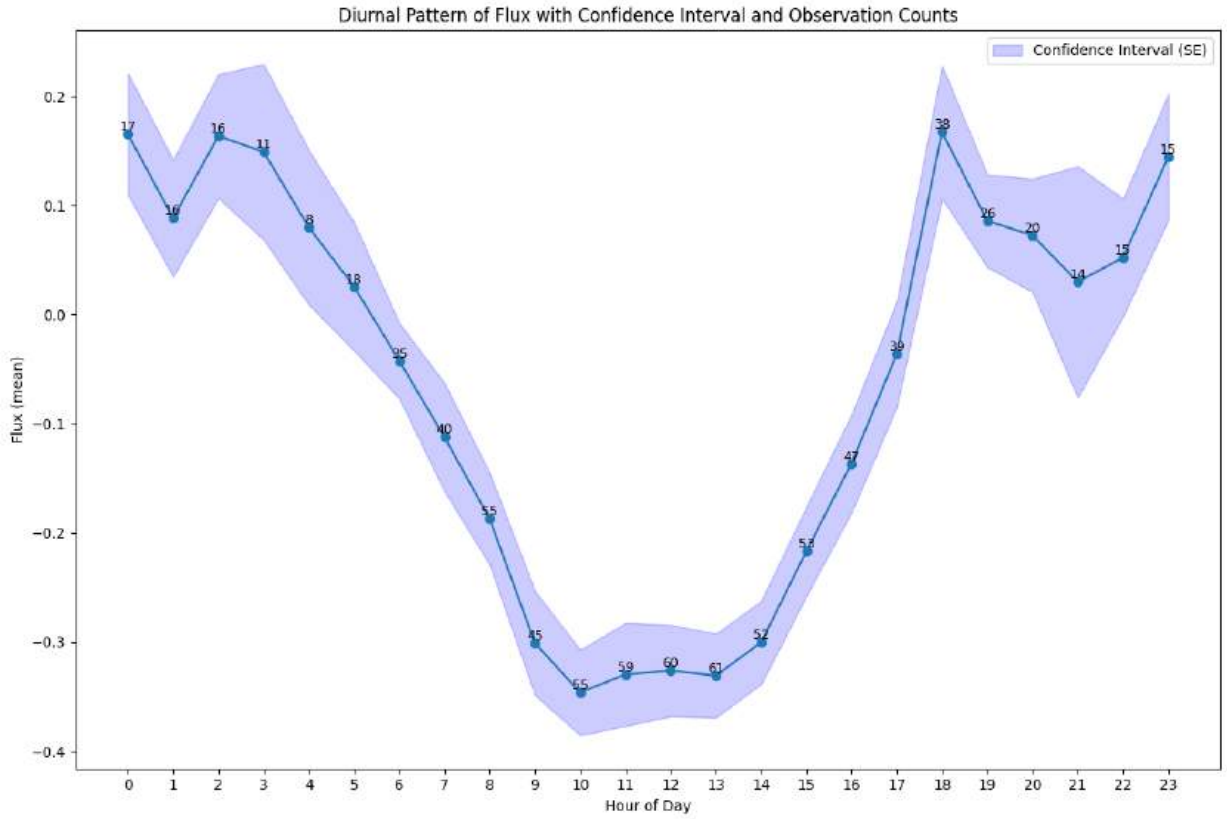
CH-OE2

Photo: Regine Maier

CH-OE2

DIURNAL N2O in 2022-23

```
'2023-05-10': '2023-06-15'
```

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'2022-09-01': '2023-10-05'
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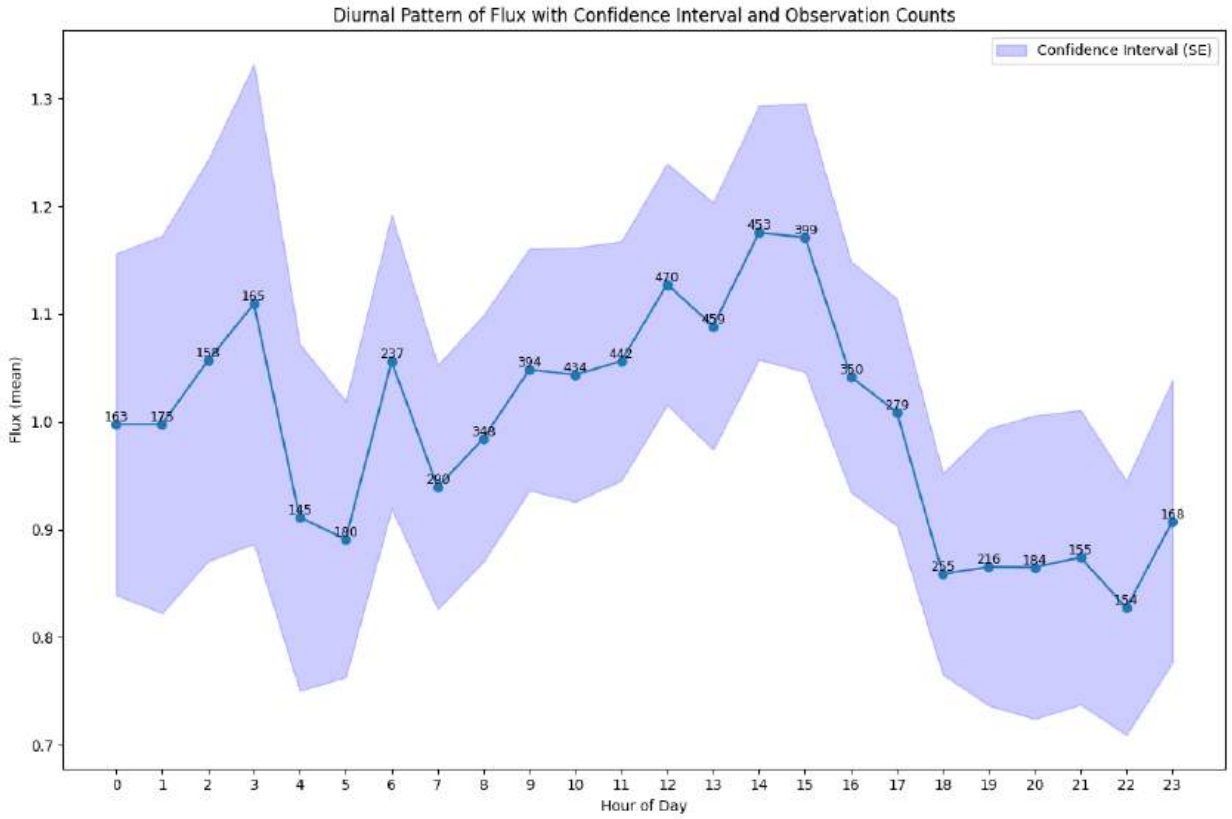
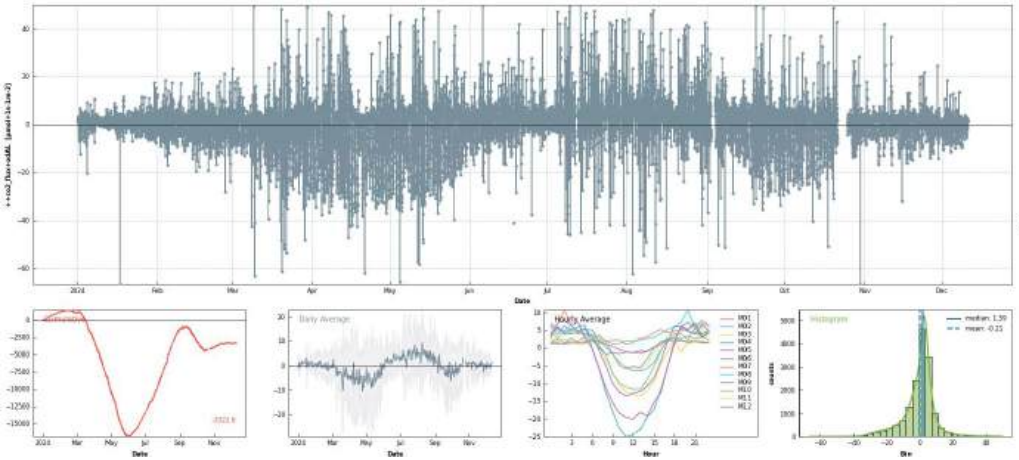


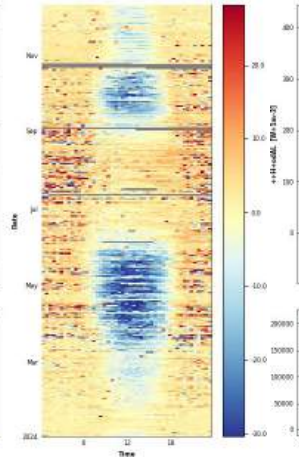
CH-OE2

NOT CHECKED IN DETAIL DURING THIS MEEITNG

CO2 flux

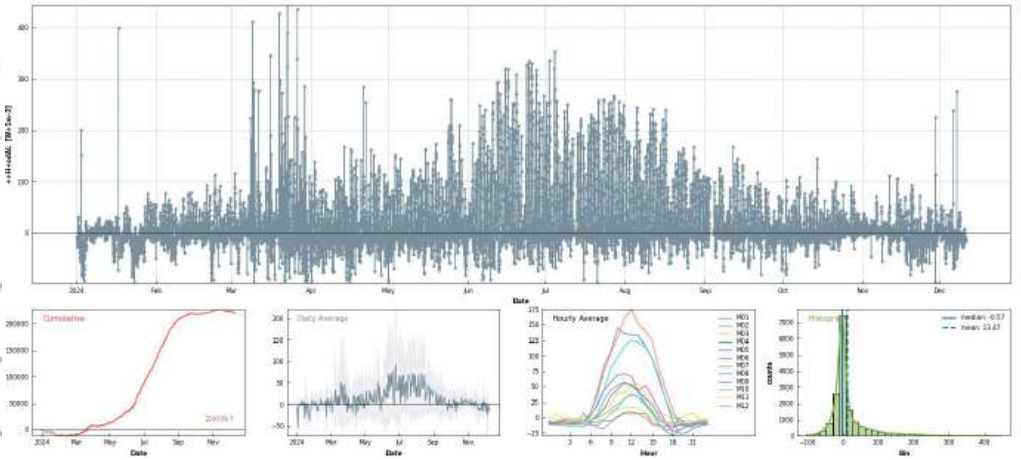
Abs limits: -70+50

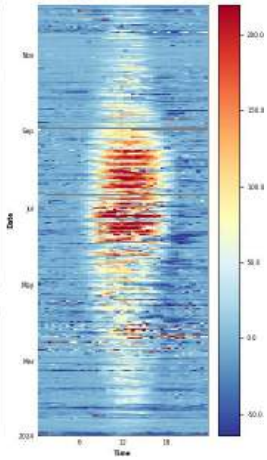




H

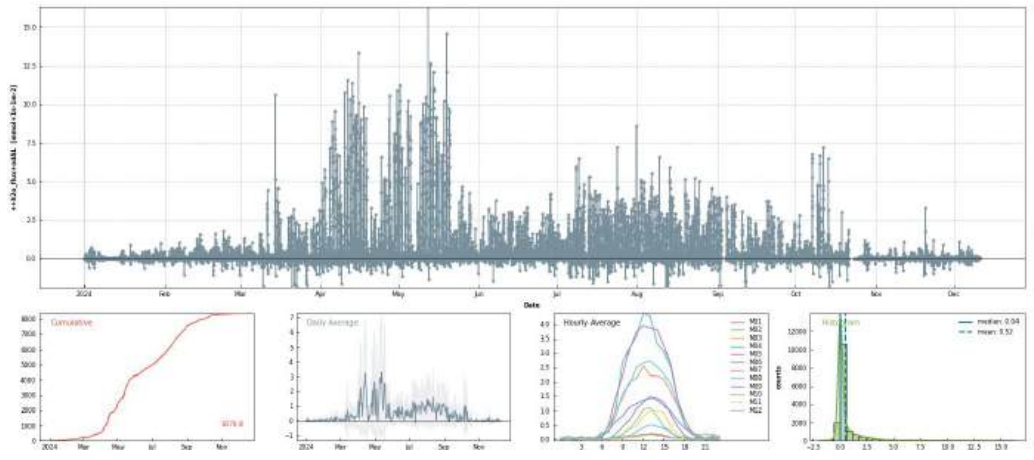
Abs limits: -100+450

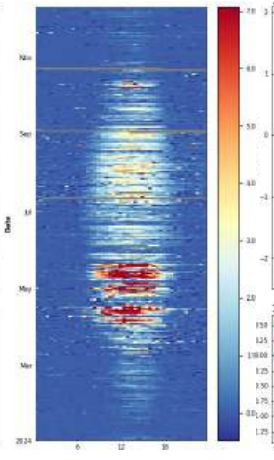




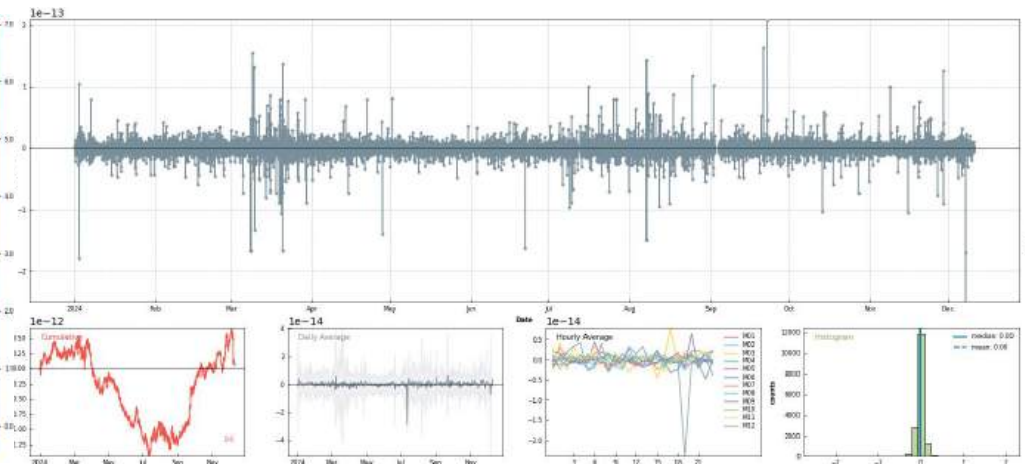
H2O flux

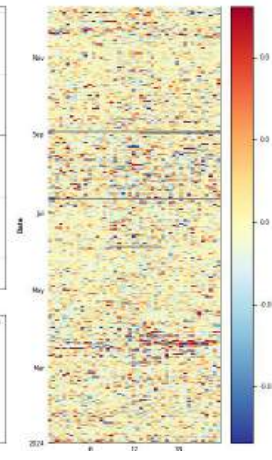
Abs limits: -2+20





w_rot





CH-TAN

Photo: Fabio Turco

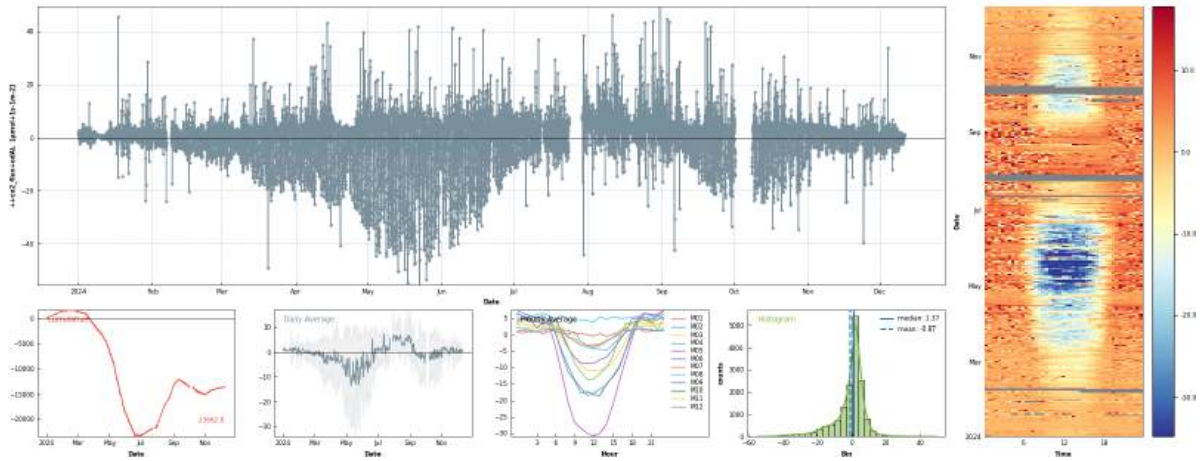
CH-TAN

Huge N2O peak after the application of compost on Aug 22 → actually it was a N-rich digestate slurry from biogas plant

NOT CHECKED IN DETAIL DURING THIS MEEITNG

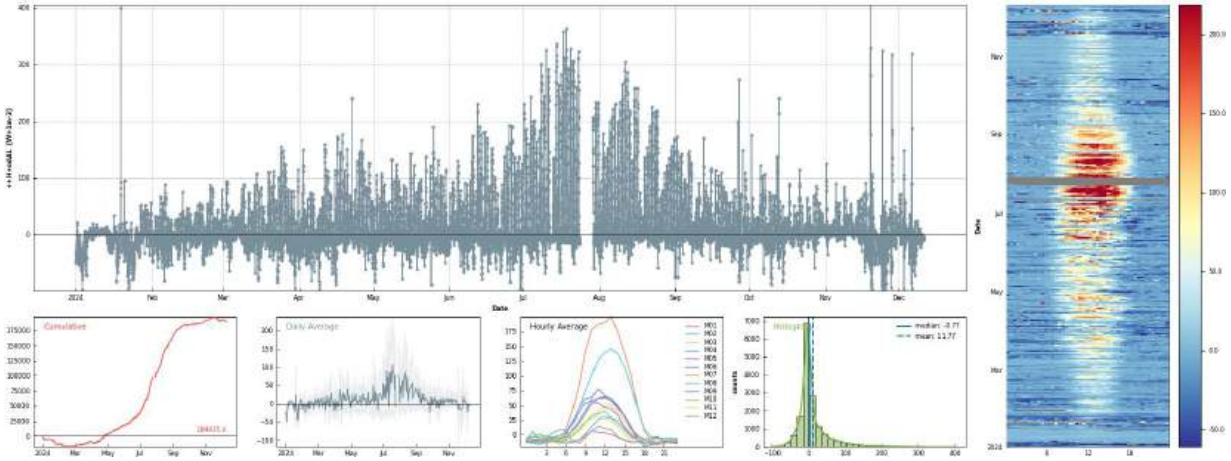
CO2 flux

Abs limits: -70+50



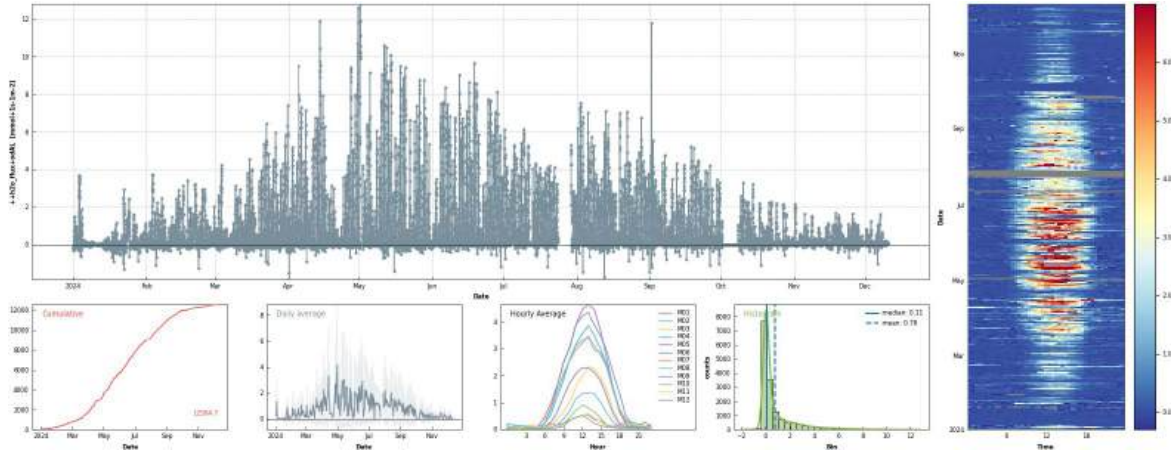
H

Abs limits: -100+450



H2O flux

Abs limits: -2+20



N2O

Abs limits: -0.005+0.05