QA/QC Meeting
19 Jun 2025

Participants: LH, ZG, SB, LS, YZ, LA, HSC, FLT, YW (9)


ALL SITES
Data sharing: FLUXNET uploads 2025
including uploads in 2025, FLUXNET now has:
UPDATED


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

APPENDIX

ALL SITES Data sharing: FLUXNET uploads 2025

Including uploads in 2025, FLUXNET now has:

- **AWS**: fluxes and meteo 2006-2024, excl. 2012
- **CHA:** fluxes and meteo 2005-2024, incl. N2O and CH4 2012-2022 Overview
- **DAV**: fluxes and meteo 1997-2024, incl. CH4 2016-2017, 2020-2023
- **FOR**: fluxes (N2O, CH4, *CO2+?*) and meteo 2024
- **FRU**: fluxes and meteo 2005-2024
- **LAE**: fluxes and meteo 2004-2024
- **OE2**: fluxes and meteo 2004-2024, incl. CH4 and N2O 2022-2023, and CH4 2018
- **TAN** (Tnk): fluxes and meteo 2024, incl. N2O and CH4

Site & Year	SA	GA	CO2	H2O	N2O	CH4	Current Version	EFDC Version	EFDC Upload	EFDC Calcs	Details
CH-CHA 2005	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2006	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2007	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2008	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2009	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2010	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2011	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2012	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2013	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2014	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2015	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2016	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2017	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2018	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2019	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2020	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2021	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2022	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2023	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	UPDATE	Show
CH-CHA 2024	R350	IRGA75	CO2	H2O			FF-202503	FF-202503	20 Apr 2025	NEW	
CH-CHA QCLLGR 2012	R350	QCL			N2O	CH4	FF-202501	FF-202501	28 Feb 2025	UPDATE	Show
CH-CHA	R350	QCL			N2O	CH4	FF-202501	FF-202501	28 Feb 2025	UPDATE	Show

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

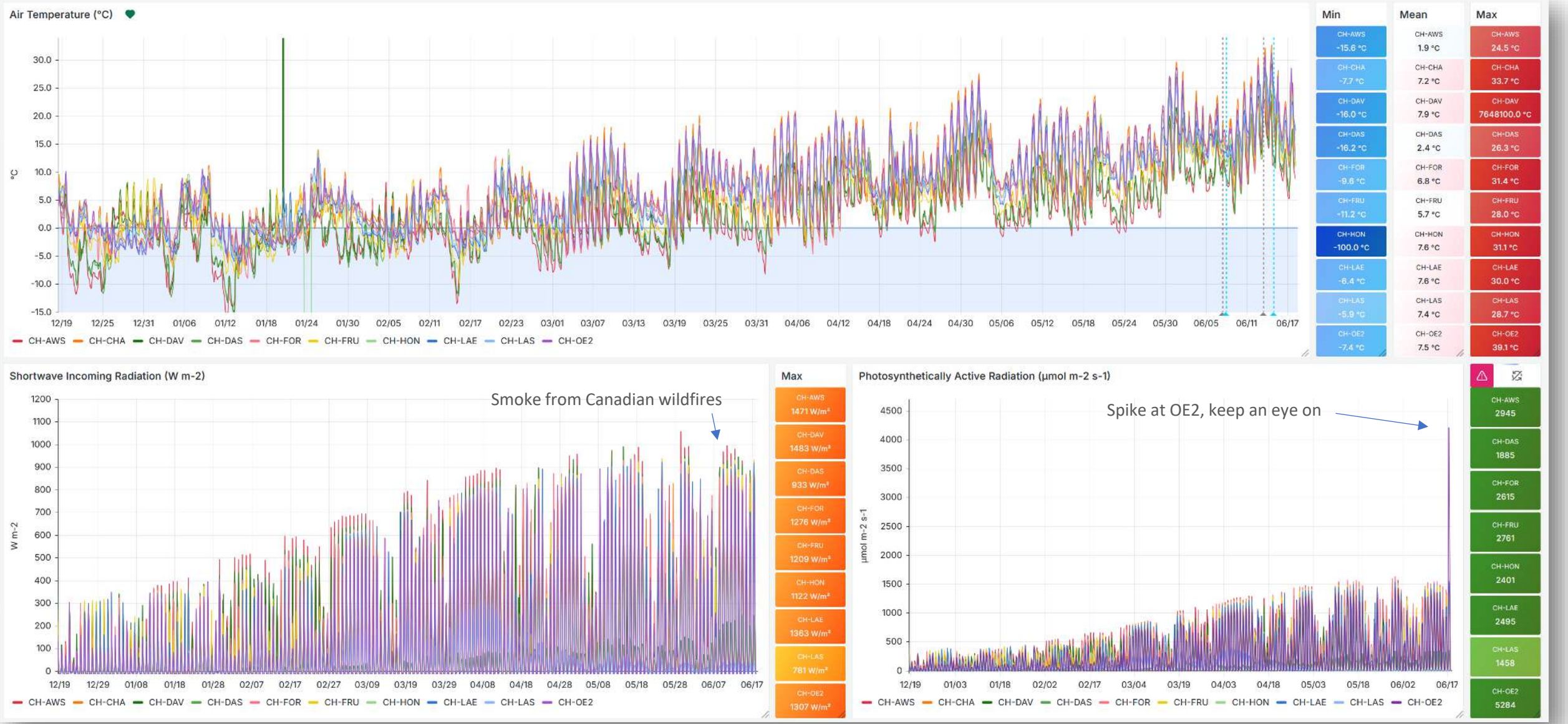
Webcam | CH-OE2

Webcam | CH-TAN

https://dataviews.swissfluxnet.ethz.ch/d/AmnD0qx7z/30-site-overview3a-webcams?orgId=1&from=now-6h&to=now&timezone=Africa%2FTunis

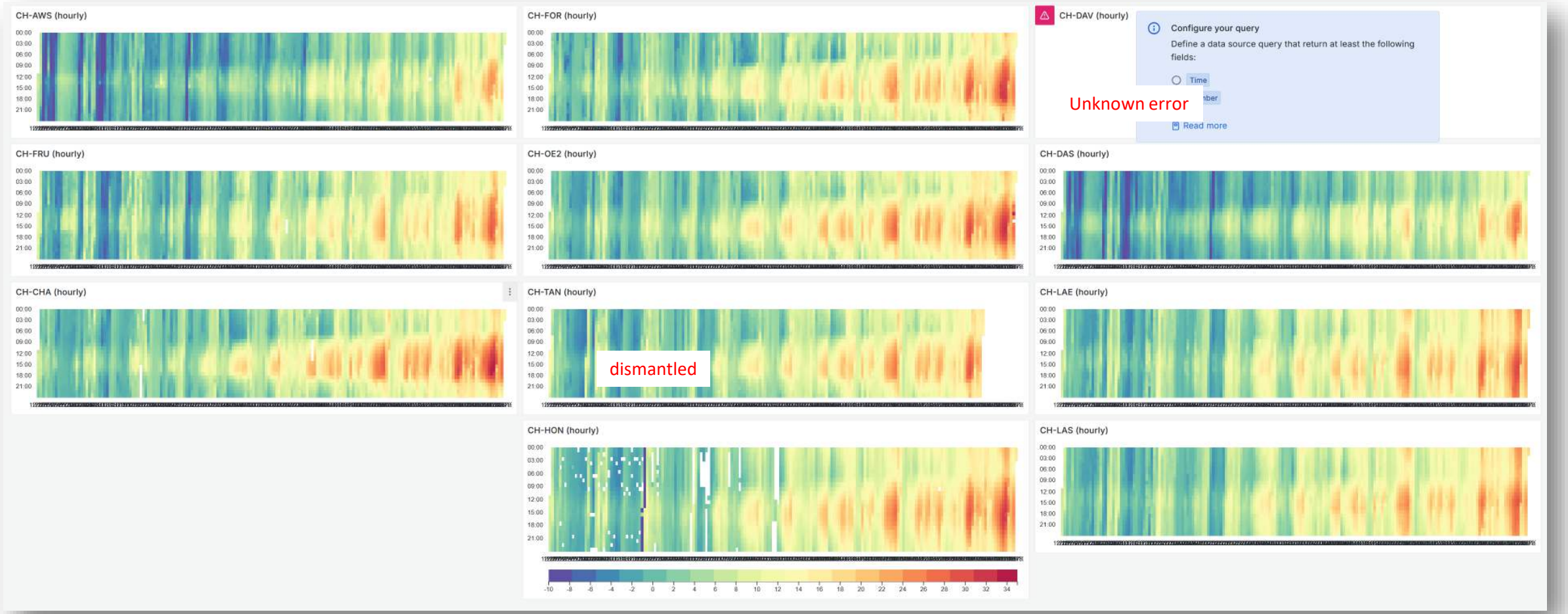
ALL SITES Meteo data, all sites

Last 6 months



https://dataviews.swissfluxnet.ethz.ch

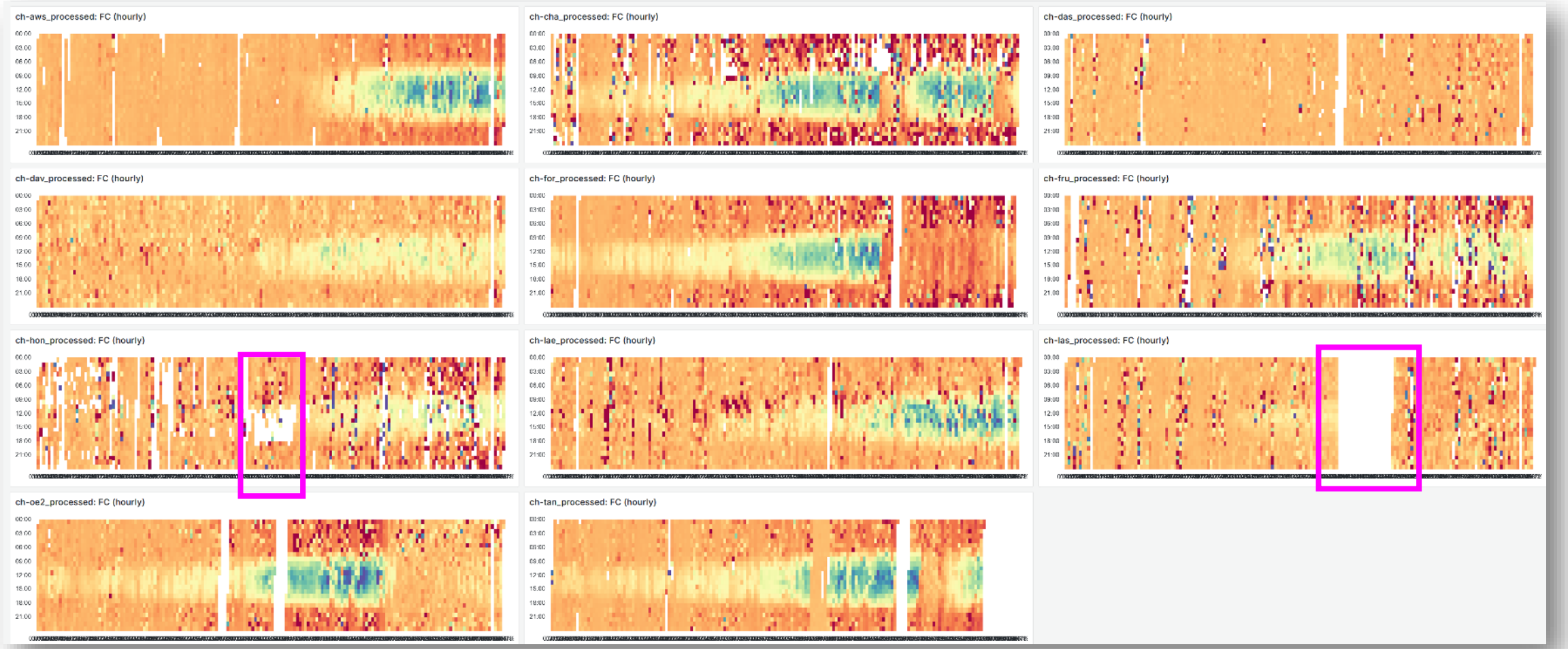
ALL SITES TA, last 6 months



https://dataviews.swissfluxnet.ethz.ch

ALL SITES CO2 flux (preliminary)

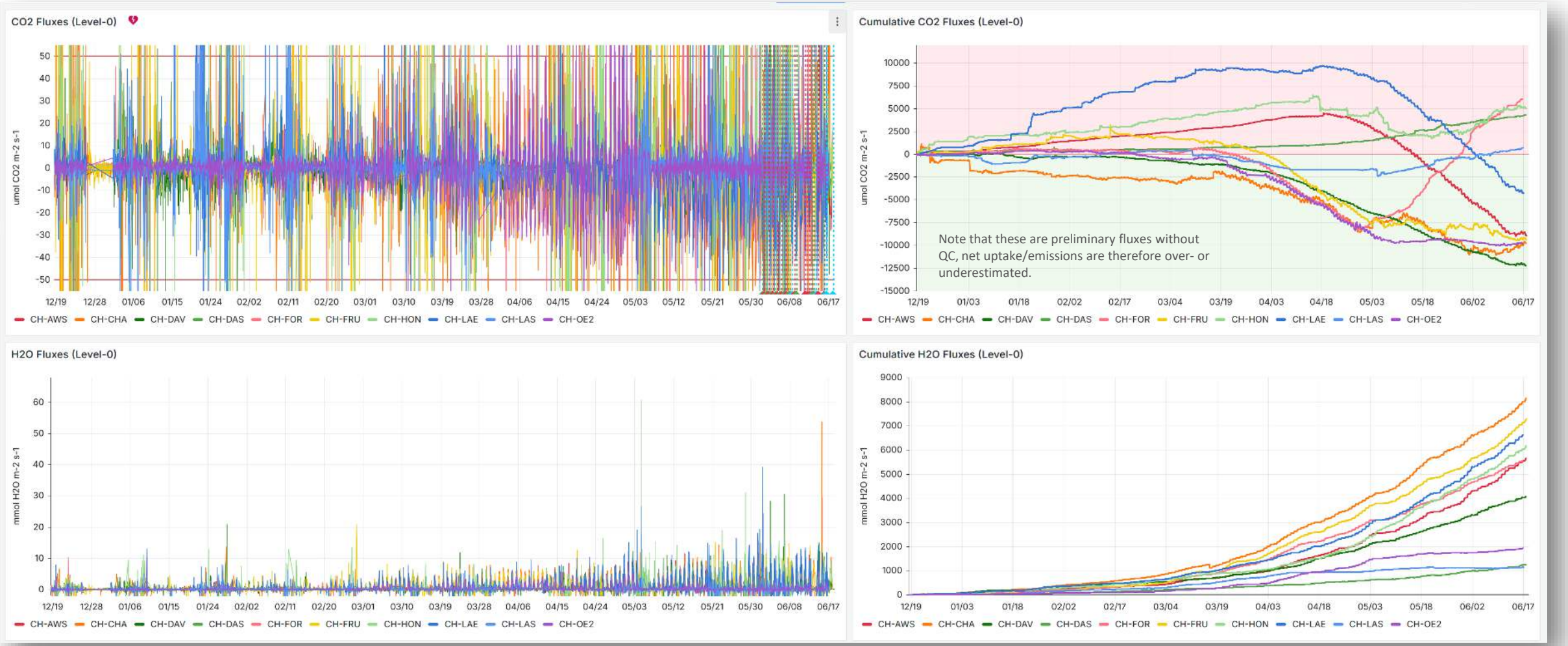
This year so far



https://dataviews.swissfluxnet.ethz.ch

ALL SITES CO2 and H2O fluxes

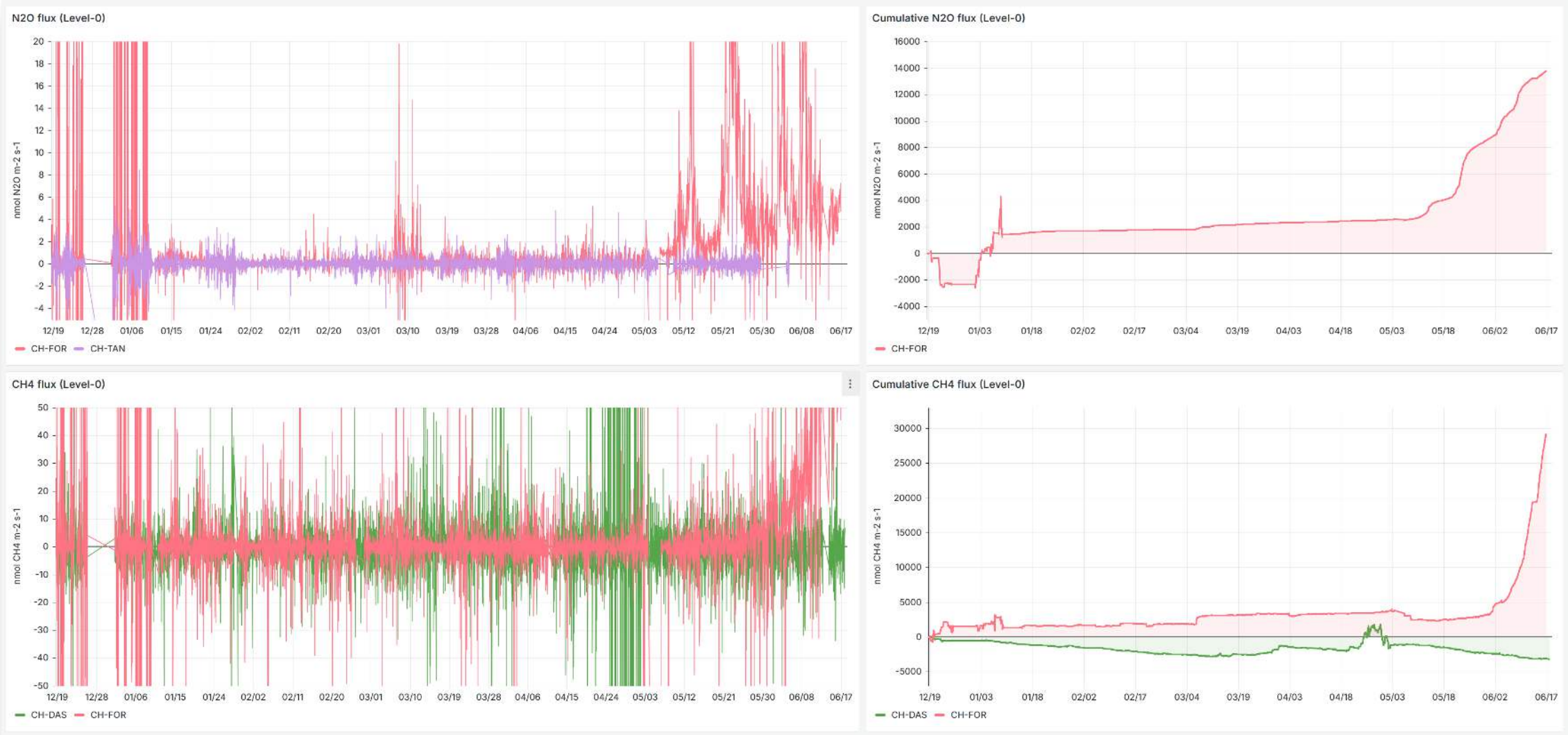
Last 6 months



https://dataviews.swissfluxnet.ethz.ch

ALL SITES N2O and CH4 fluxes

Last 6 months



https://dataviews.swissfluxnet.ethz.ch

CH-AWS

Photo: Matthi Barthel

CH-AWS CO2 flux

Site not checked in detail during this meeting.

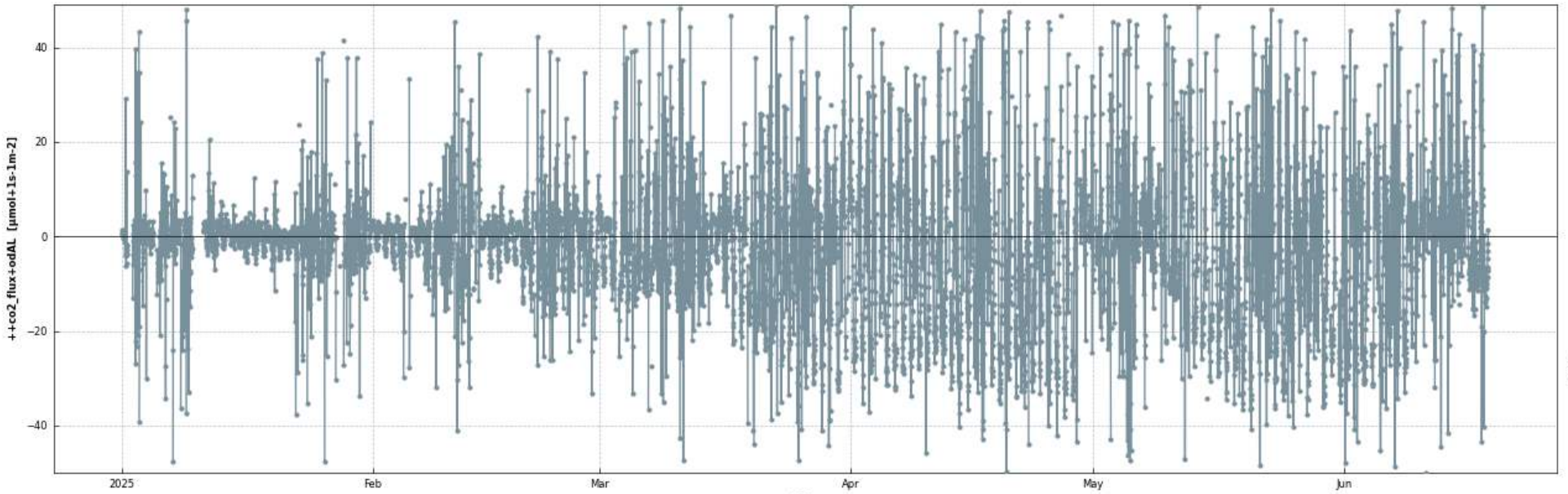
site info

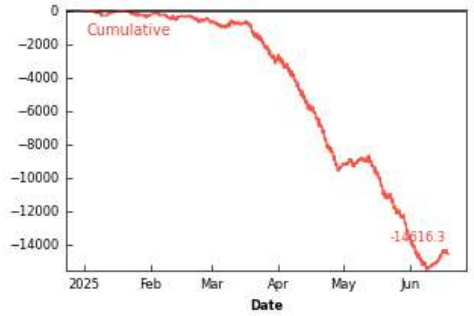
CH-CHA

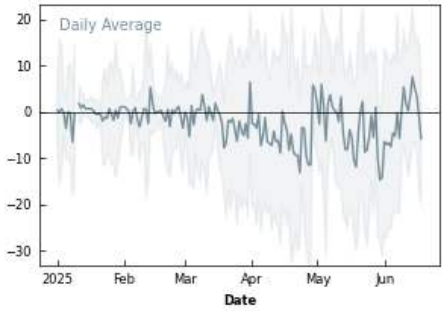
Photo: Lukas Hörtnagl

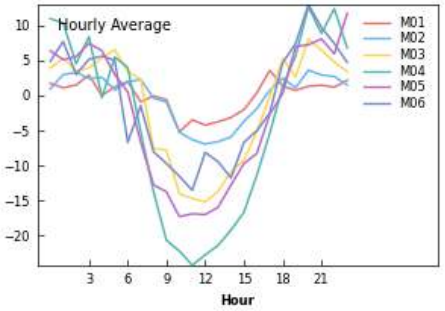
CH-CHA CO2 flux

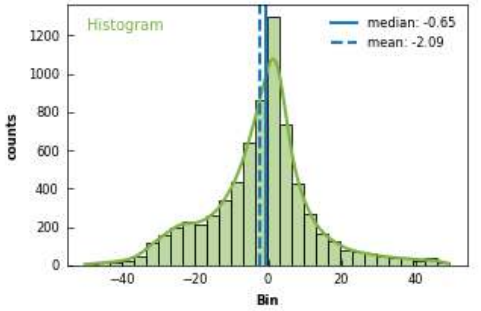
- last mowing: 2025.06.10

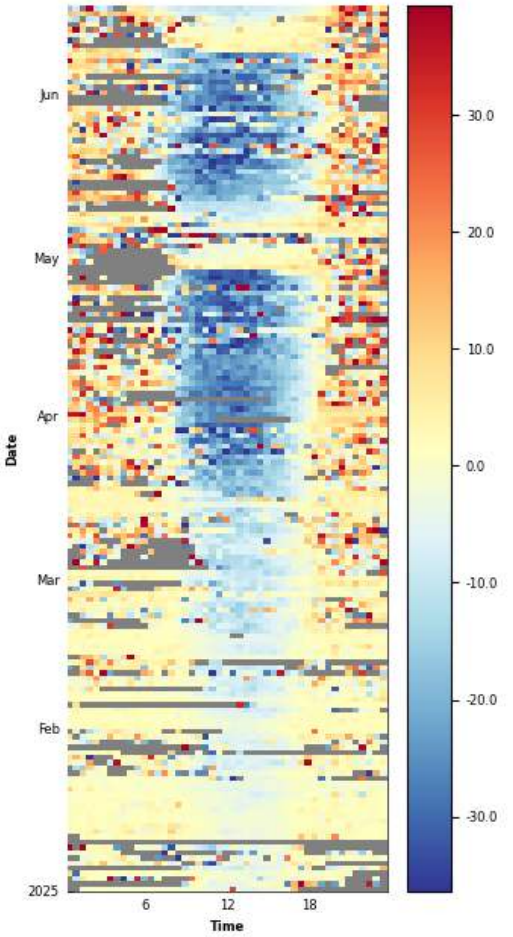






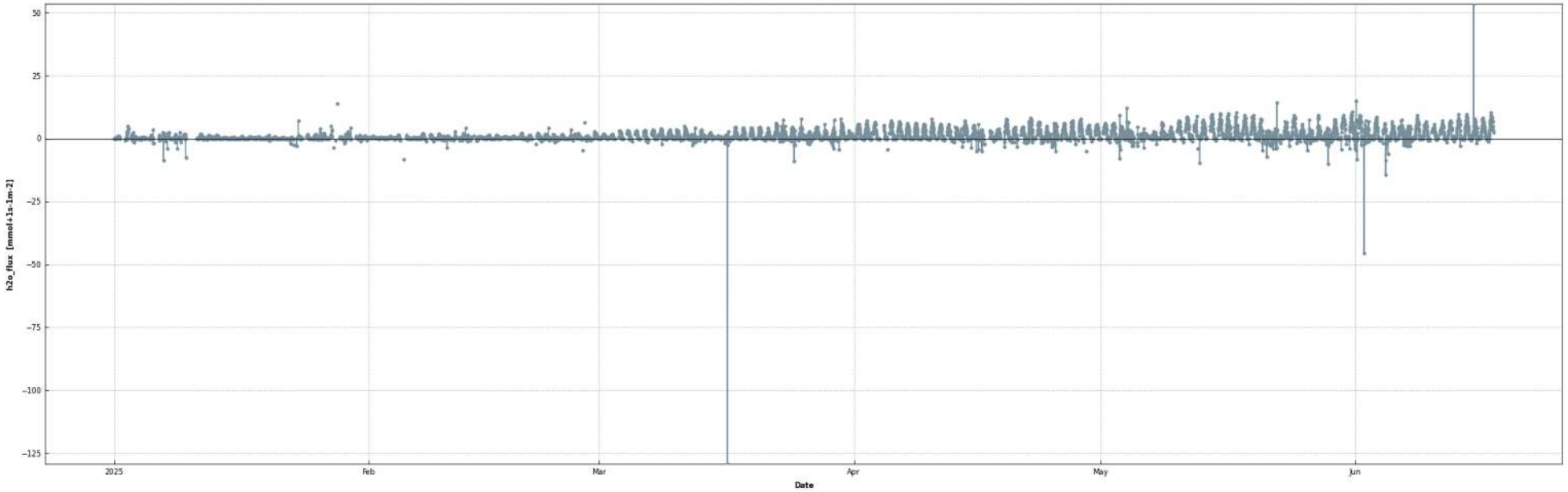


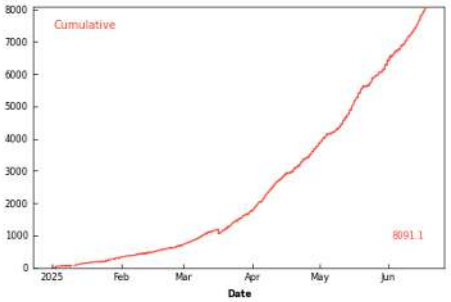


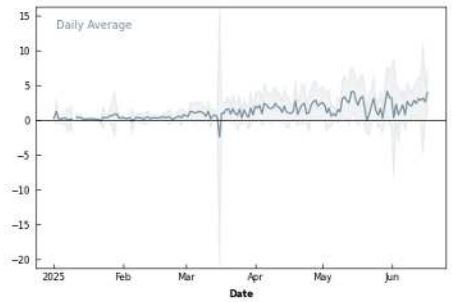


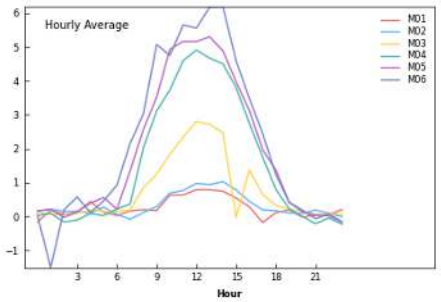
site info

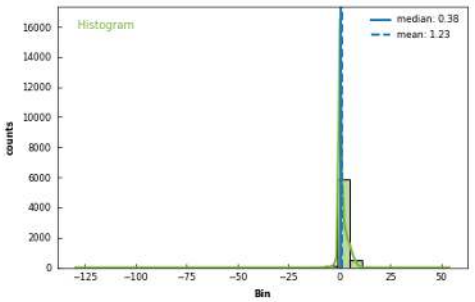
CH-CHA H2O flux

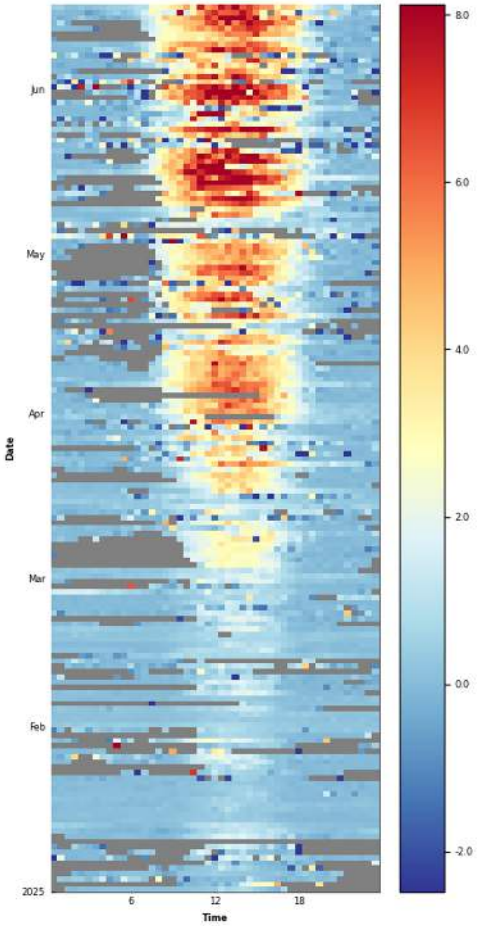






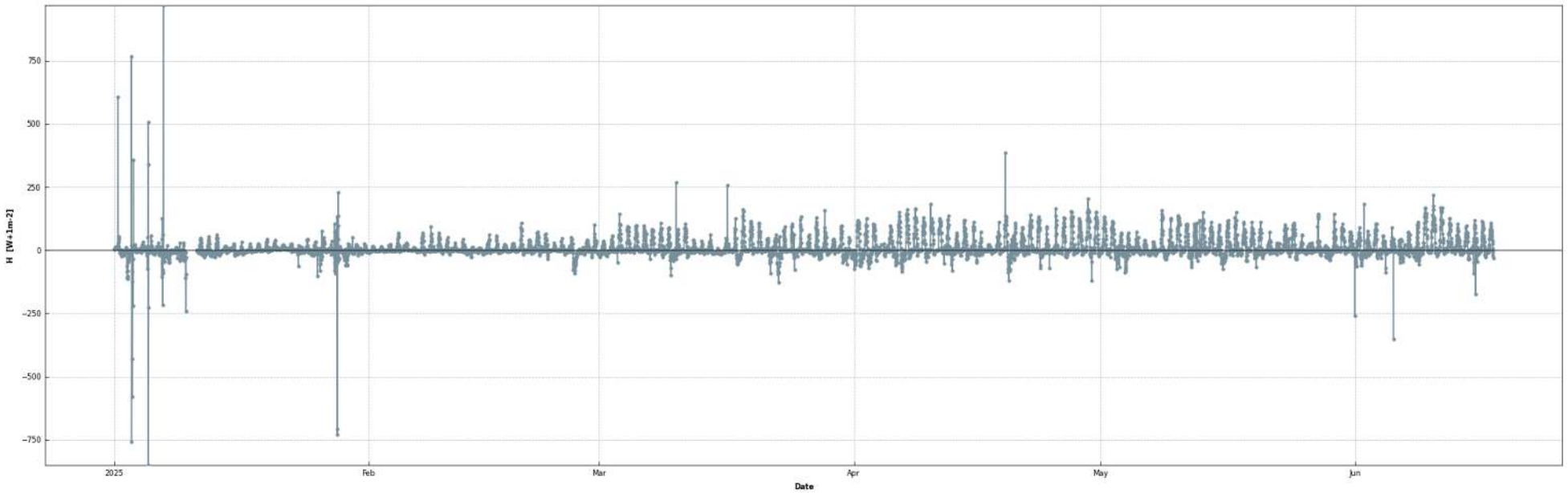


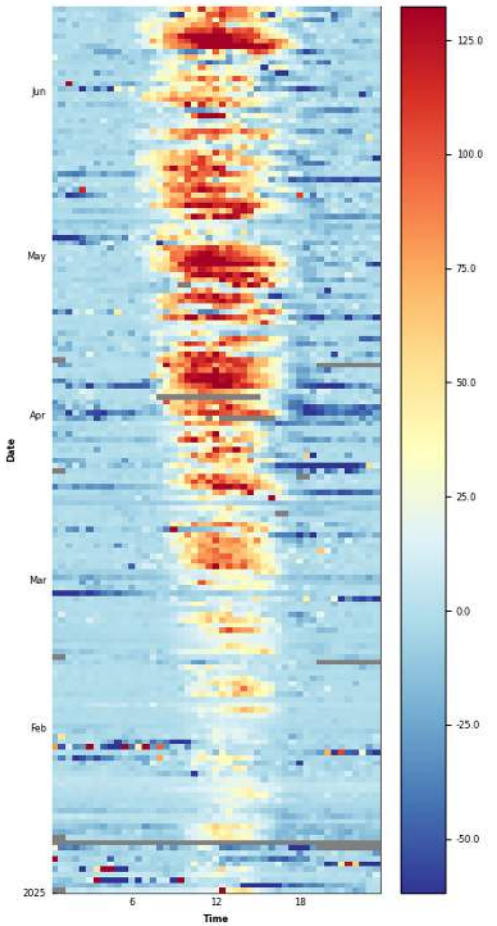


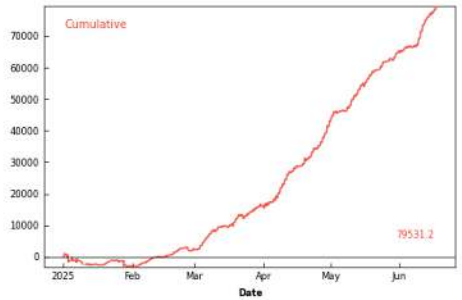


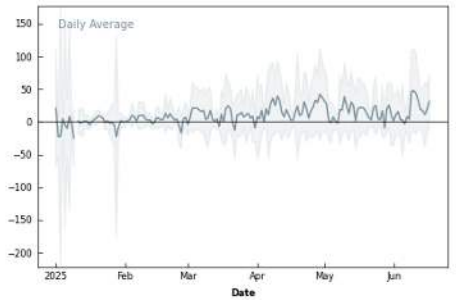
site info

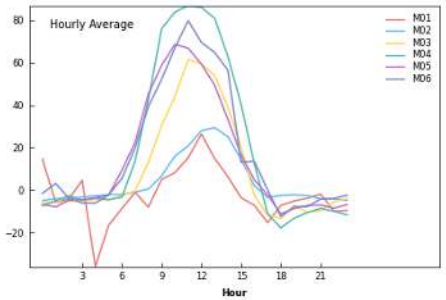
CH-CHA H

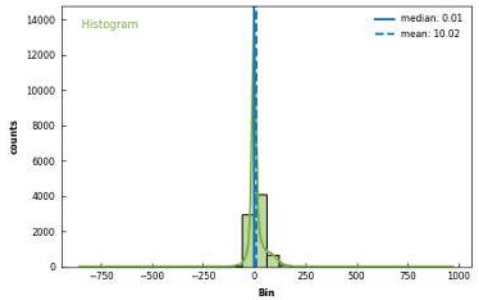






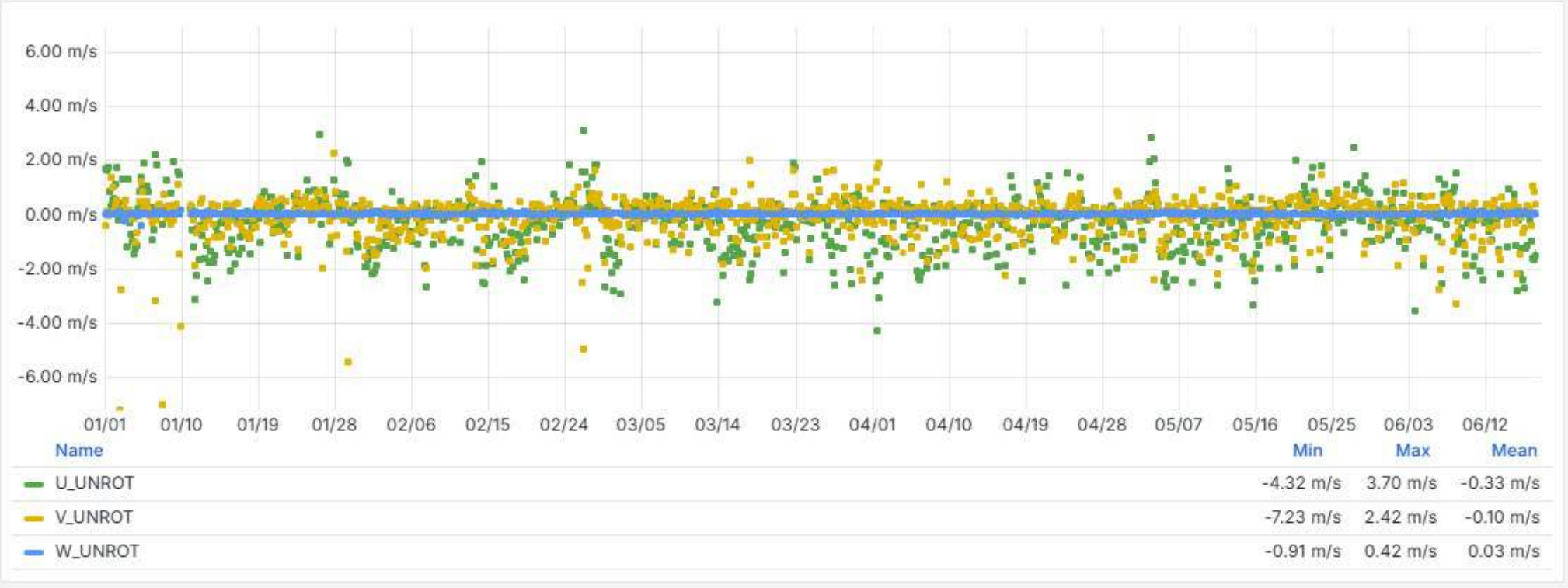






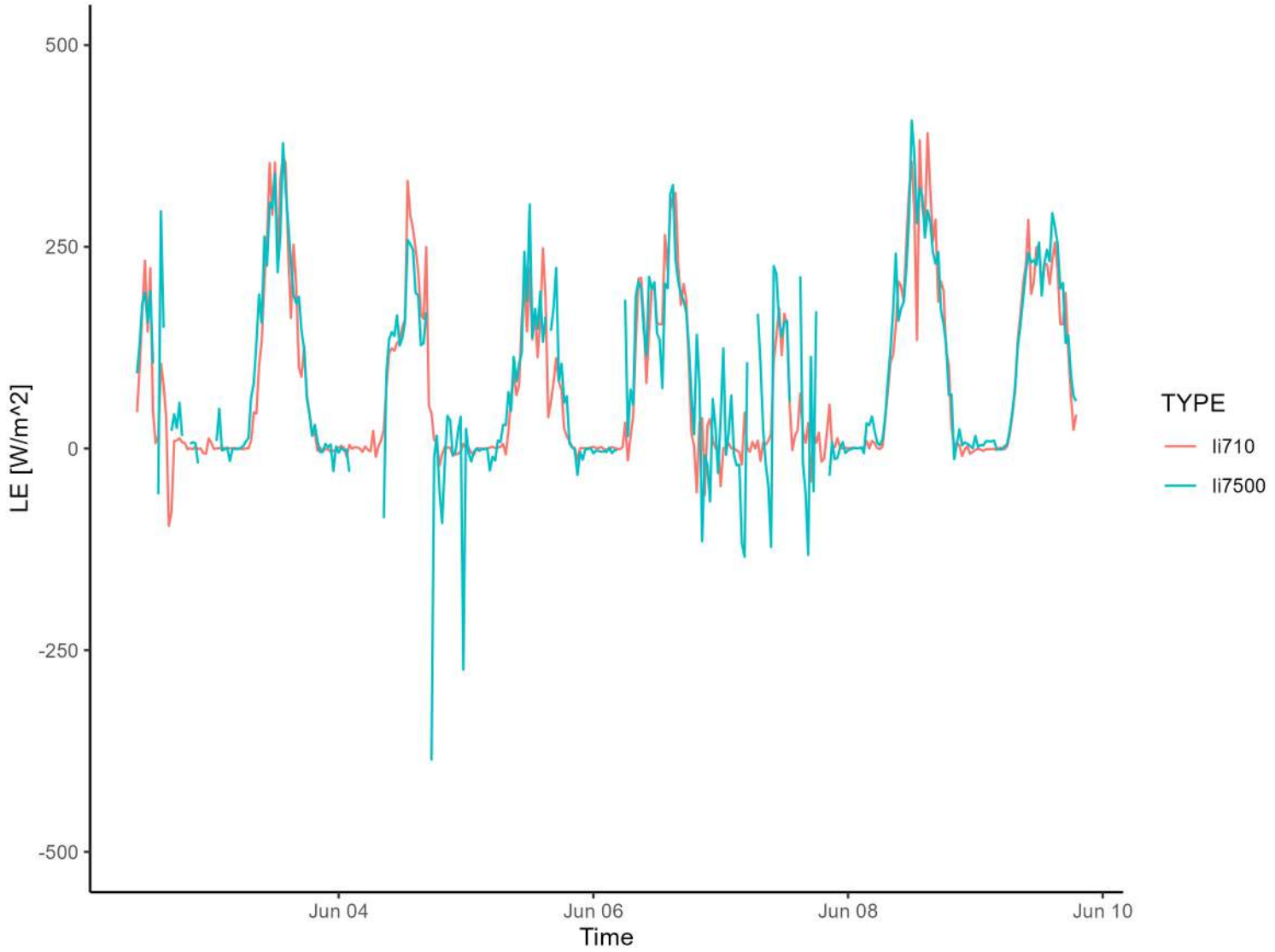
site info

CH-CHA wind



Name	Min	Max	Mean
U_UNROT	-4.32 m/s	3.70 m/s	-0.33 m/s
V_UNROT	-7.23 m/s	2.42 m/s	-0.10 m/s
W_UNROT	-0.91 m/s	0.42 m/s	0.03 m/s

site info


500
250
0
-250
-500
LE [W/m^2]
Jun 04
Jun 06
Jun 08
Jun 10
Time
TYPE
li710
li7500

CH-DAV

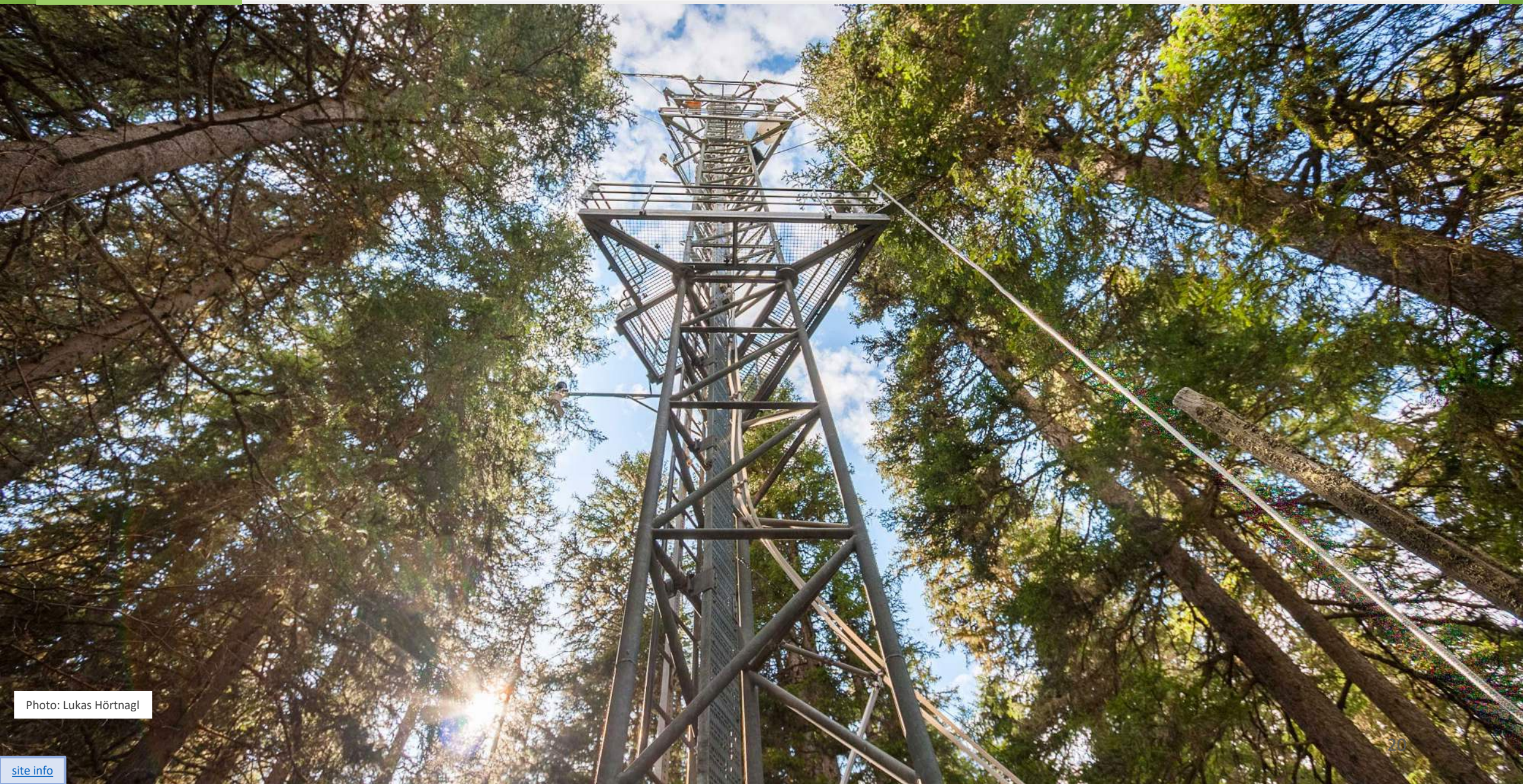
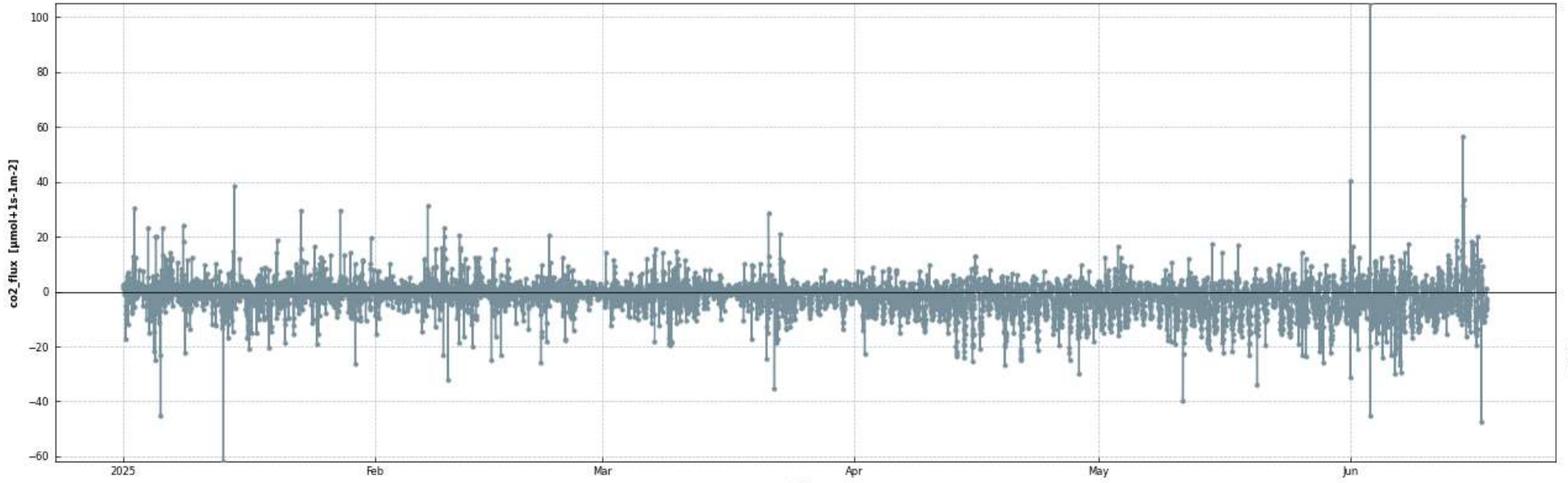


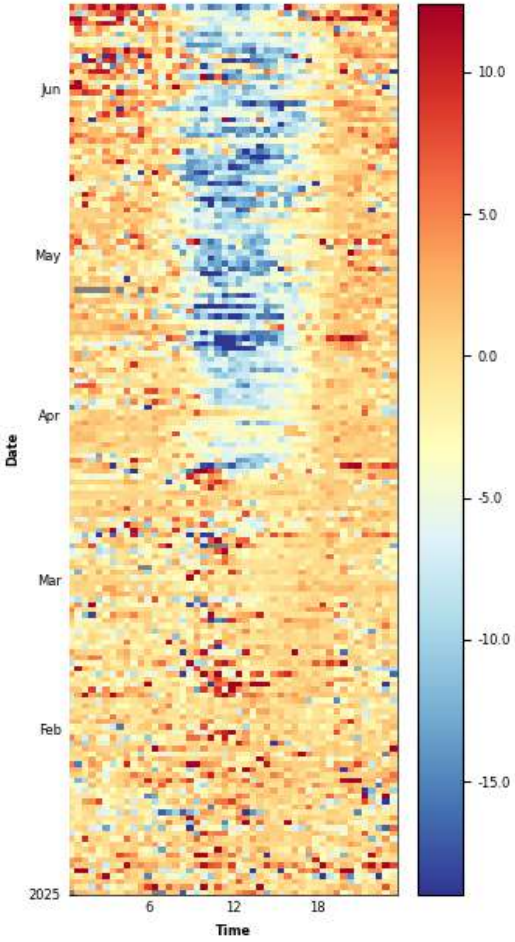
Photo: Lukas Hörtnagl

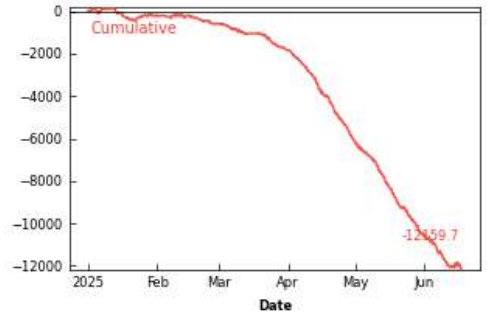
site info

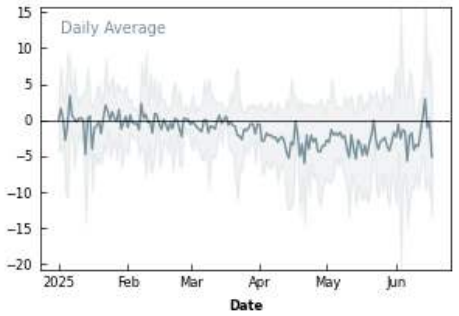
CH-DAV CO2 flux

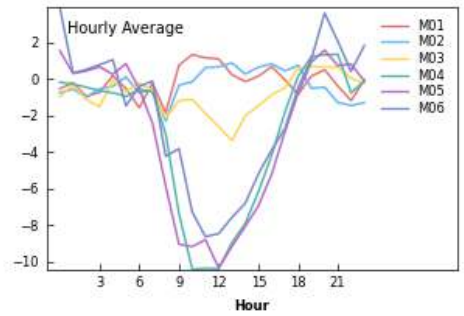
- Net CO_2 uptake period
- Almost no data gaps

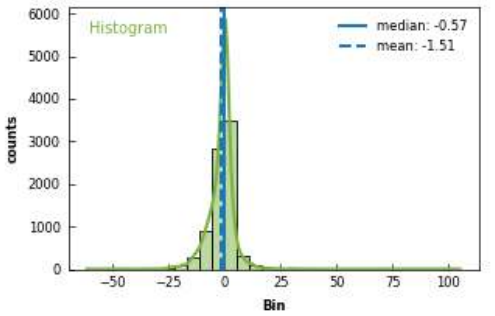






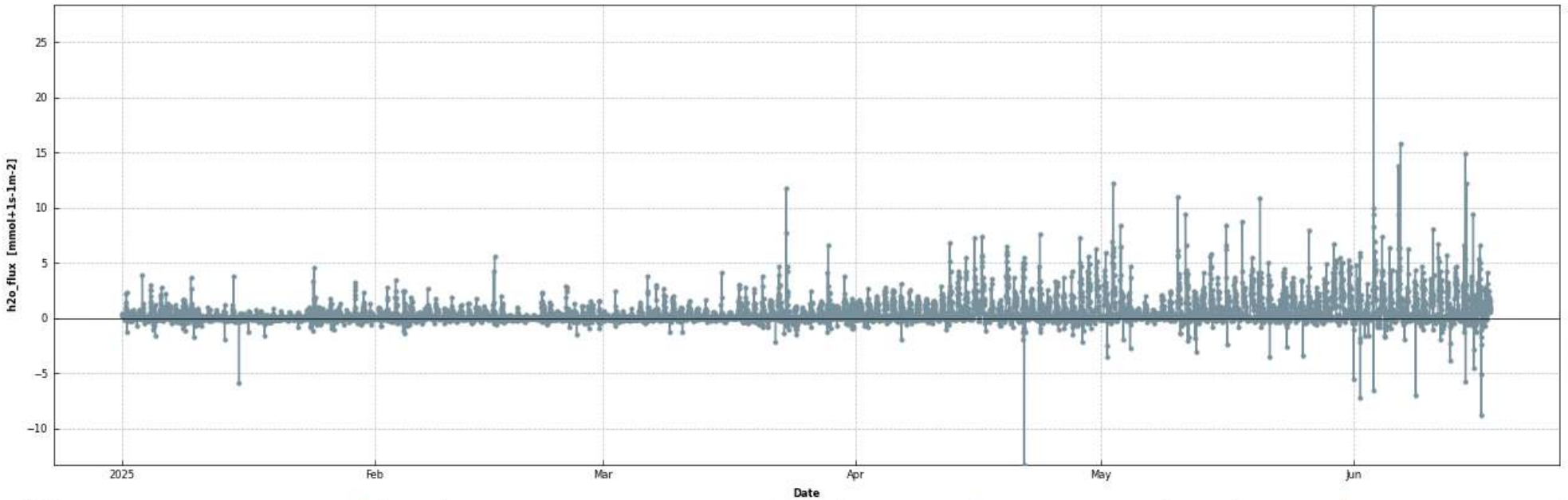


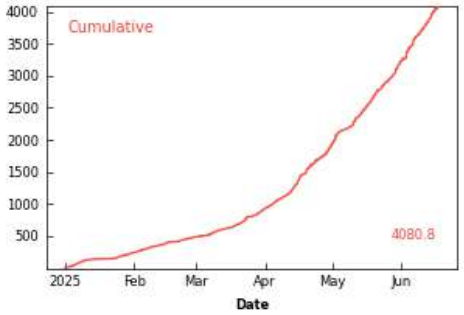


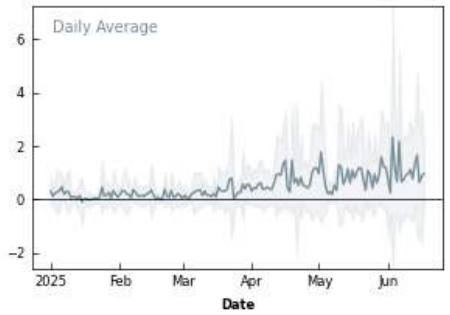


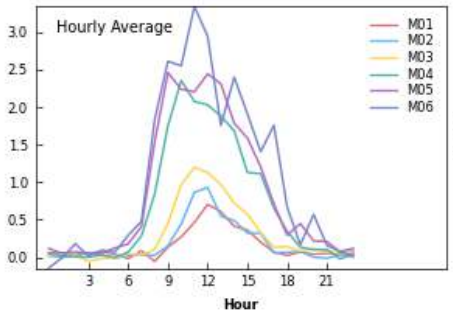
site info

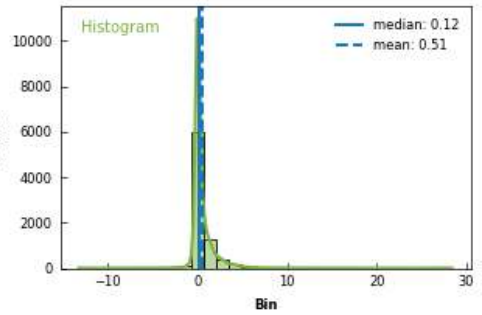
CH-DAV H2O flux

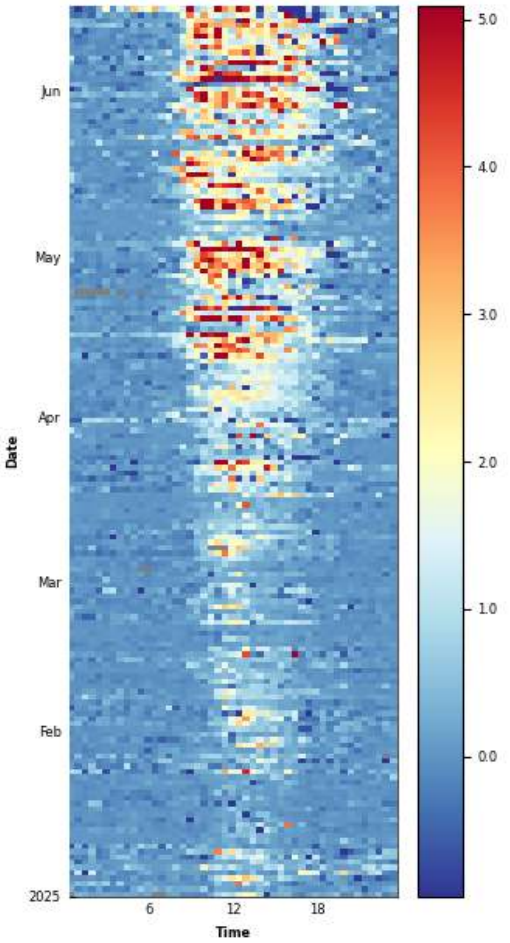






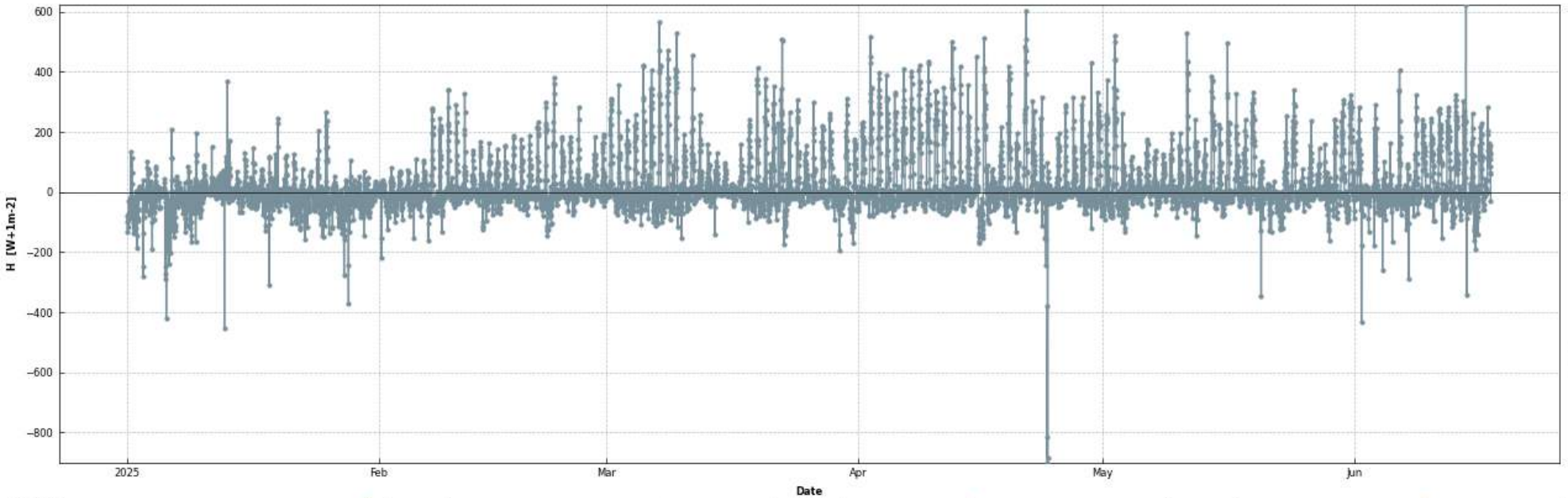


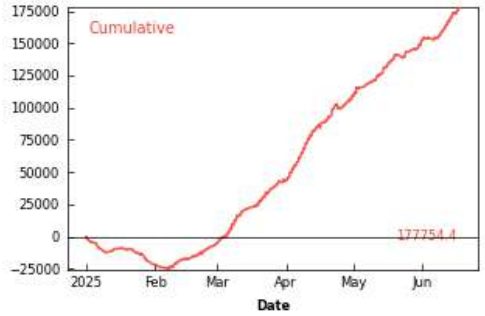


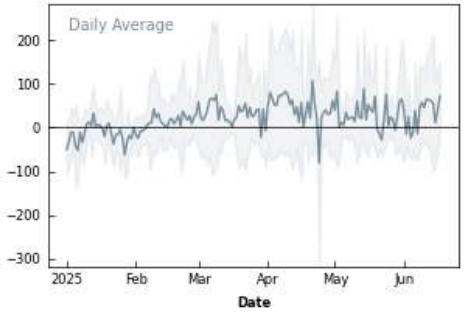


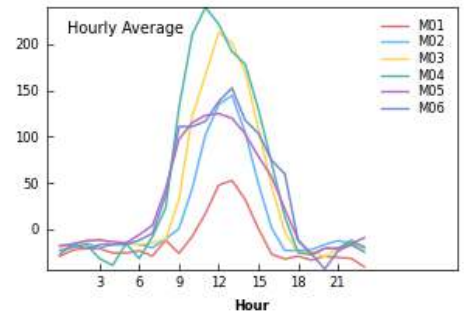
site info

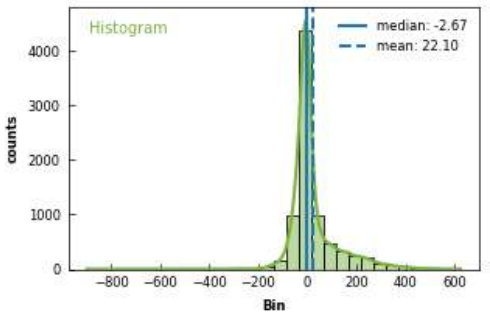
CH-DAV H

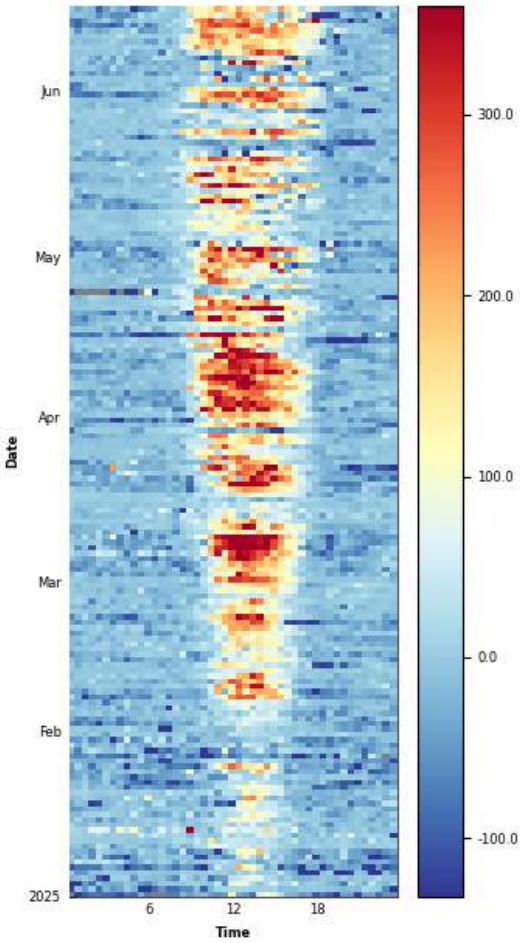












site info

CH-DAS

site info

Photo: Luana Krebs

Site not checked in detail during this meeting.

site info

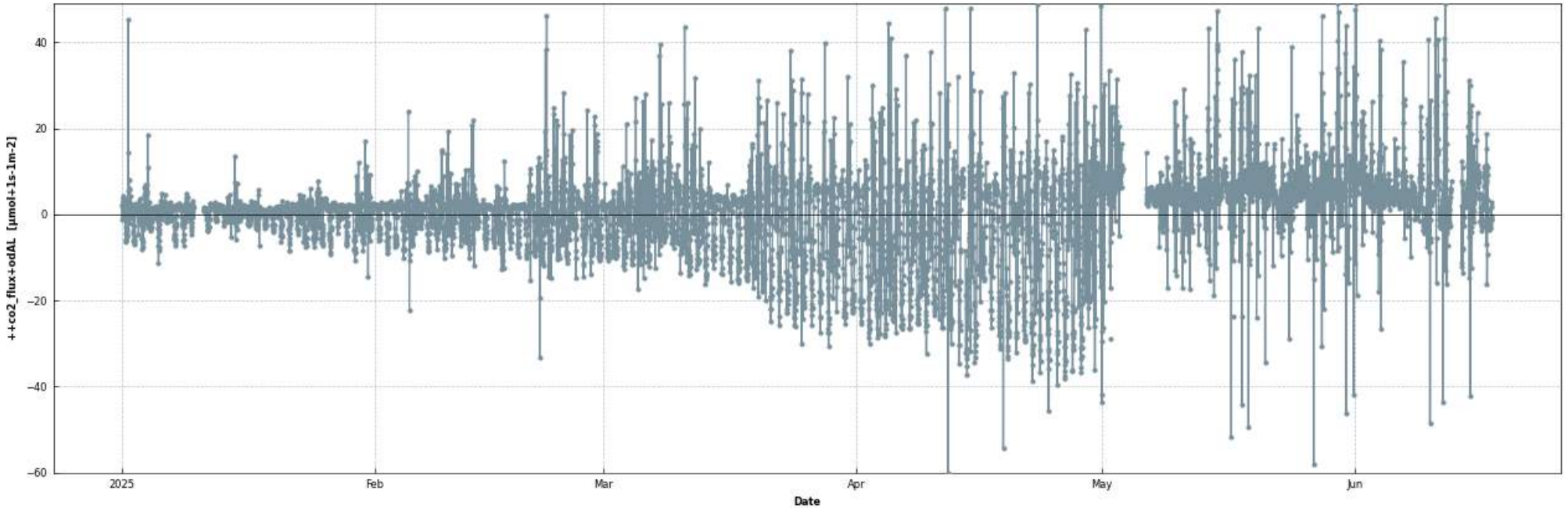
CH-FOR

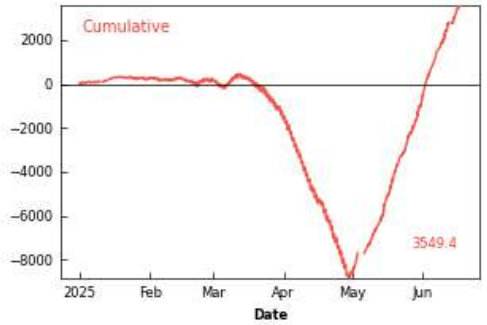
Photo: Lorenz Allemann

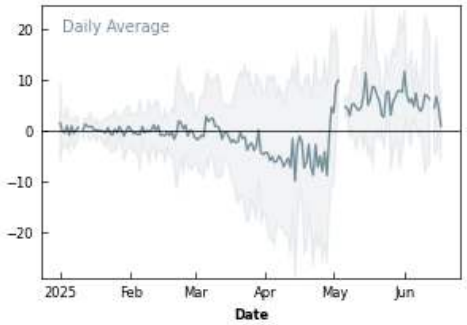
site info

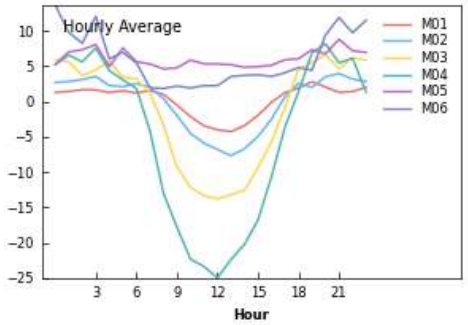
CH-FOR CO2 flux

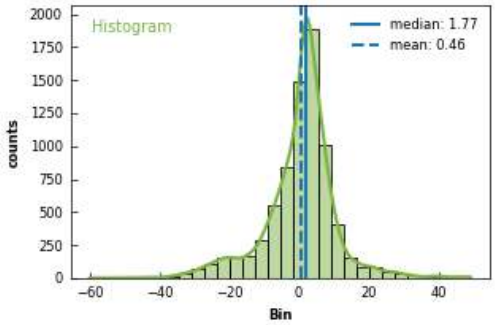
- 11.05 Maize sowing
- 06.06 Mineral fertilization

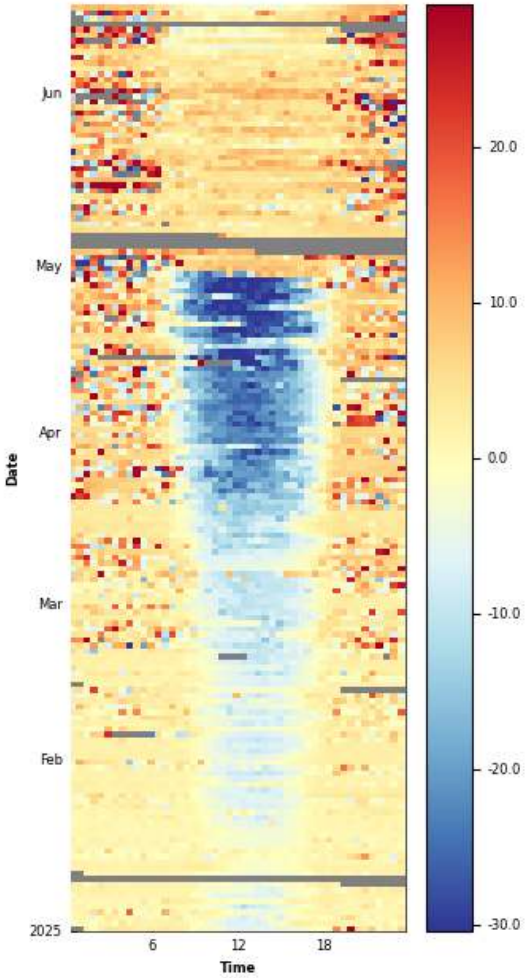






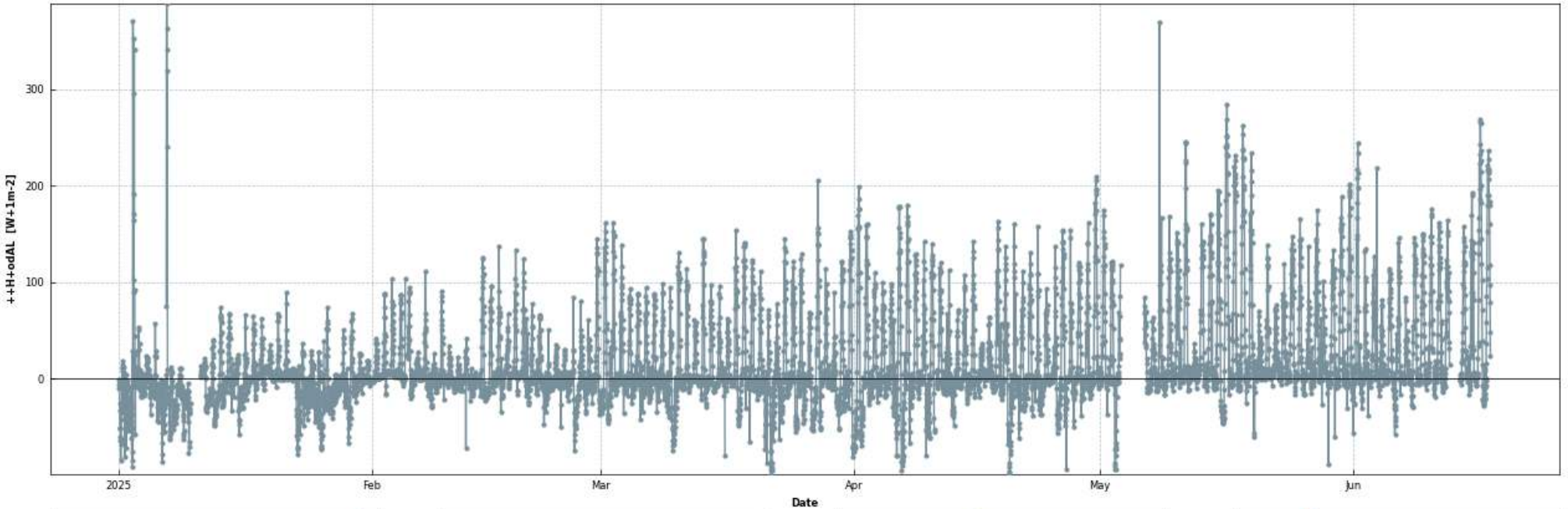


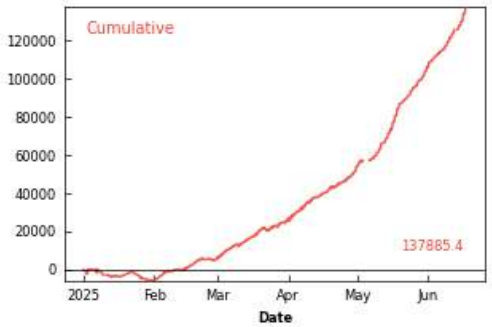


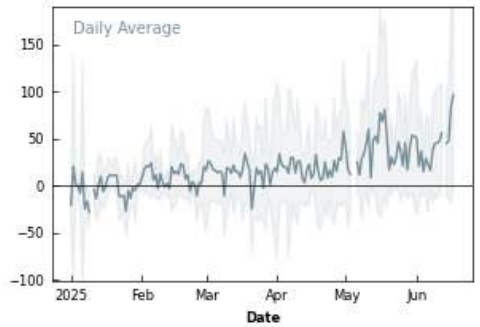


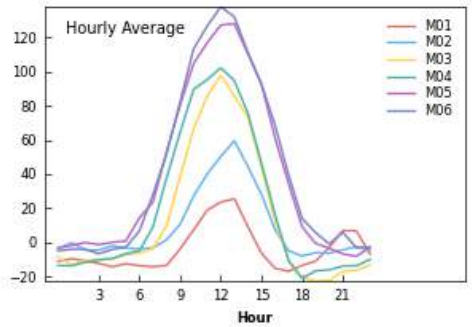
site info

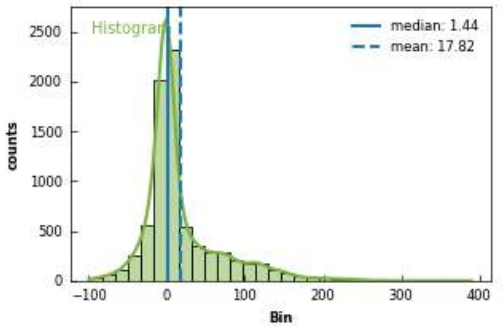
CH-FOR H

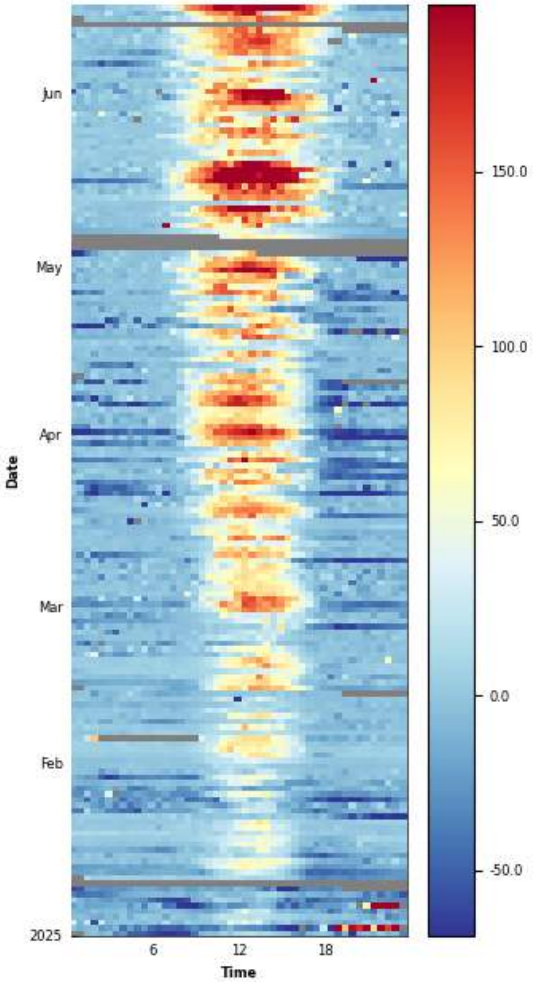






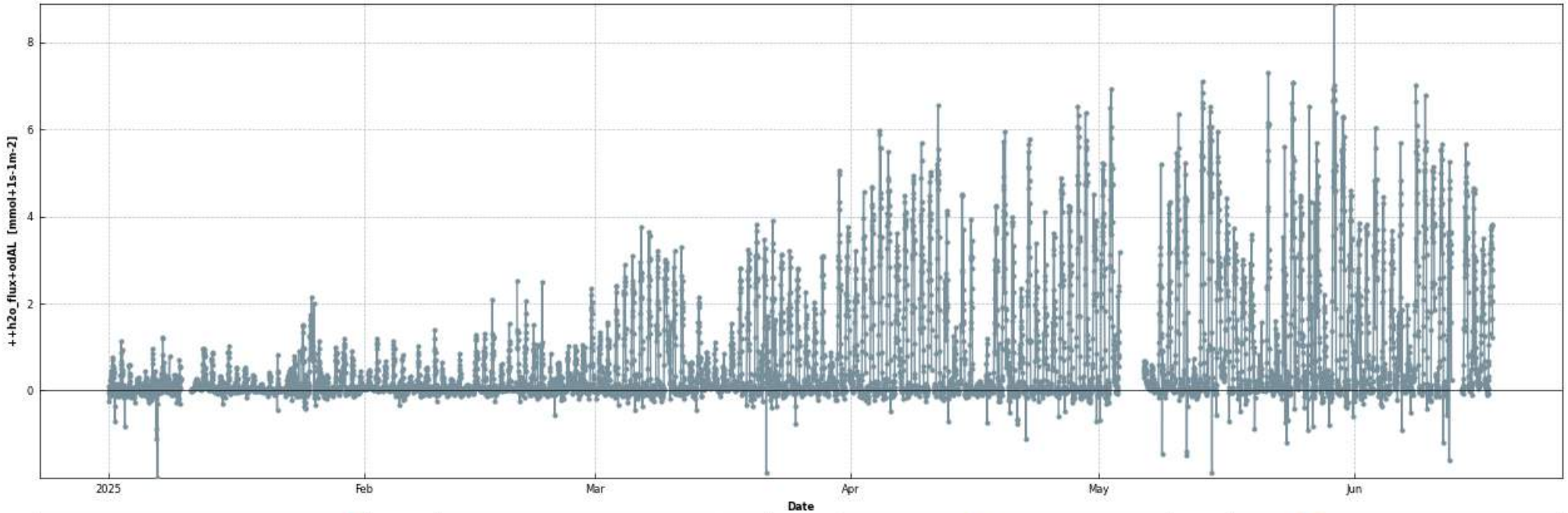


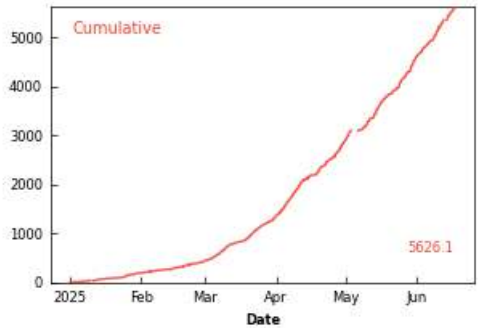


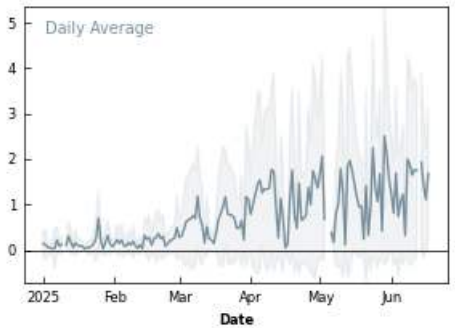


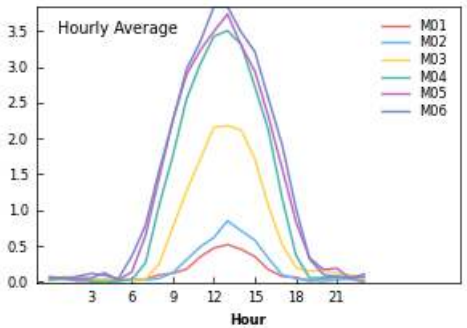
site info

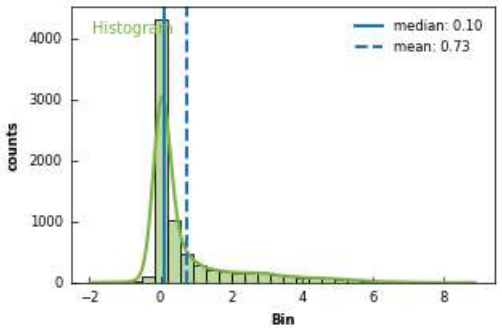
CH-FOR H2O

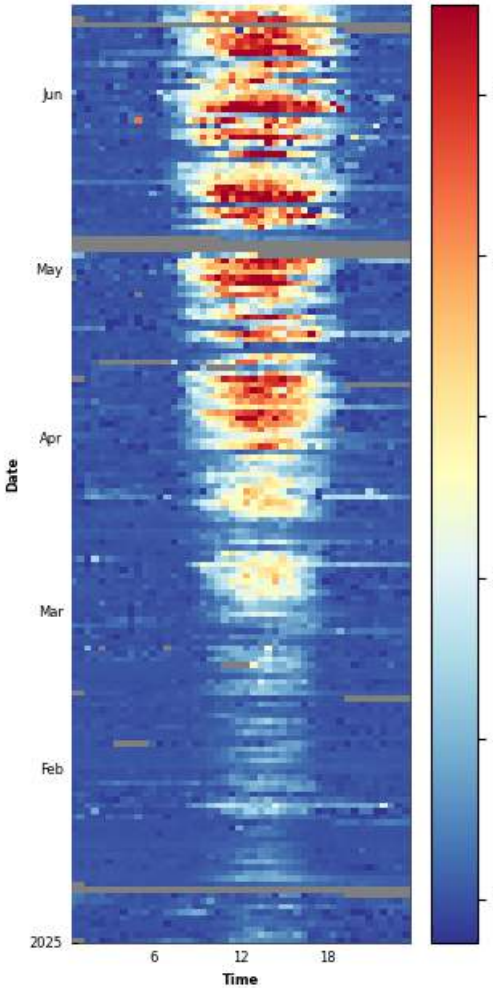








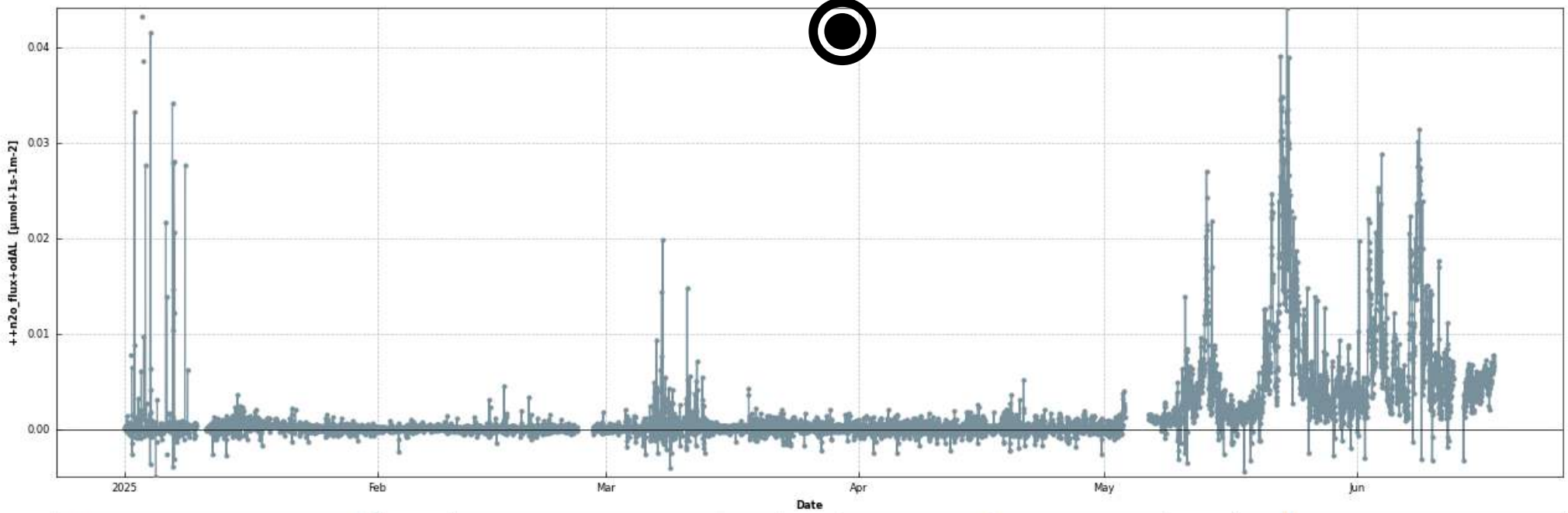


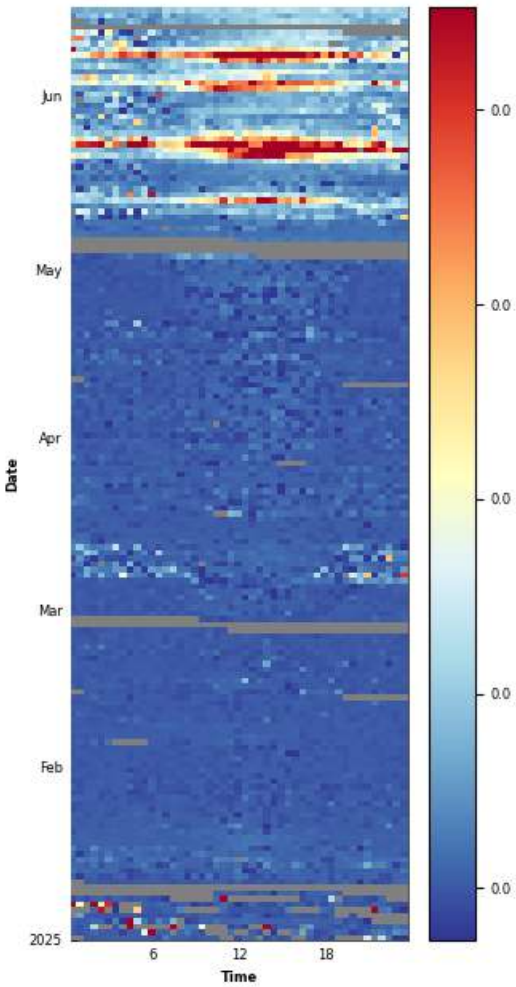


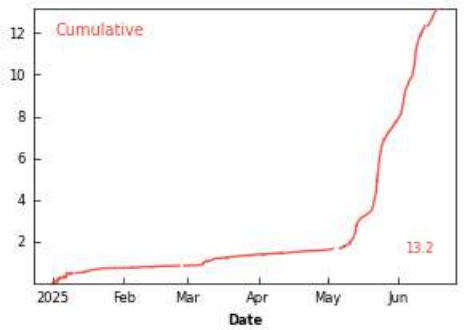
site info

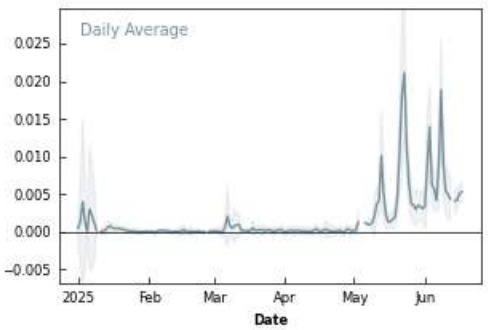
CH-FOR N2O flux

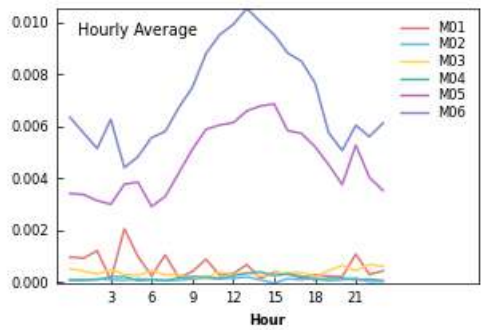
- 11.05 Maize sowing
- 06.06 Mineral fertilization

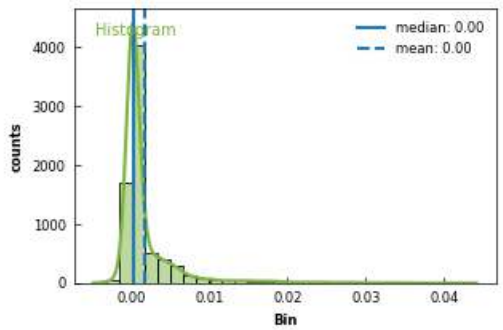










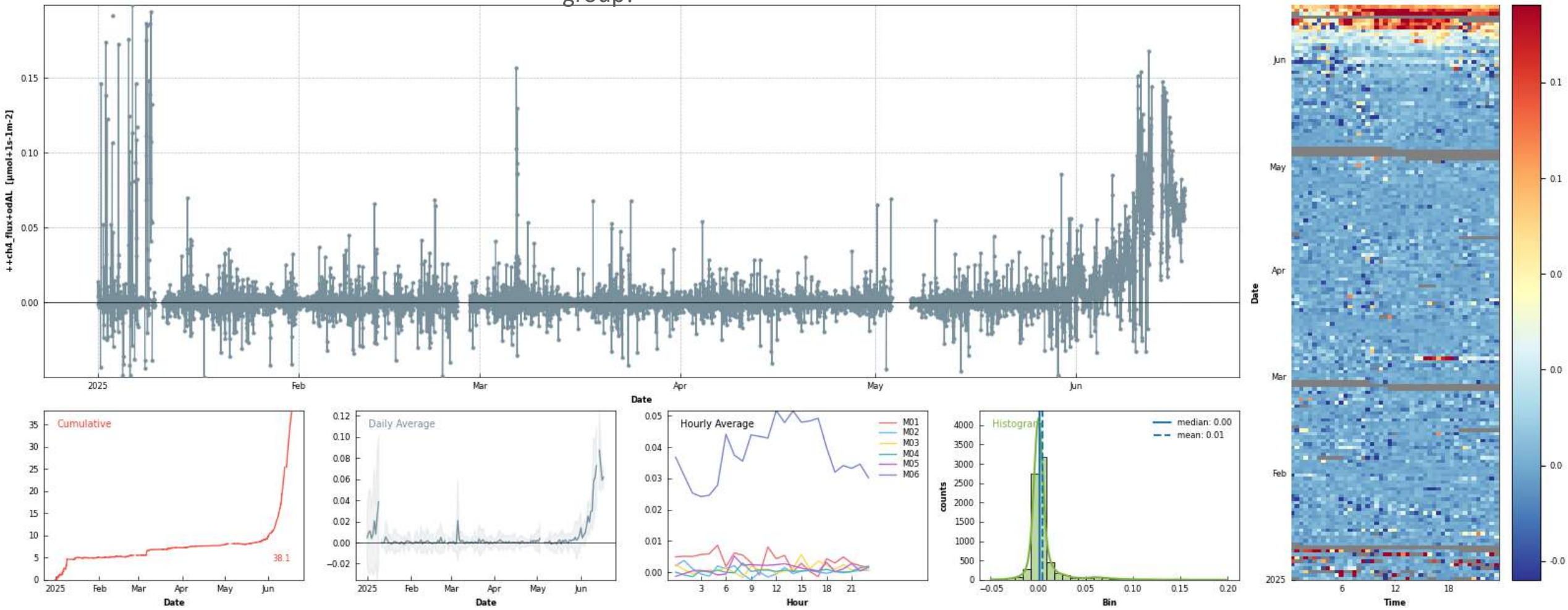


site info

CH-FOR CH4 flux

- 11.05 Maize sowing
- 06.06 Mineral fertilization

Highest GHG emitter of the group!



site info

CH-FRU

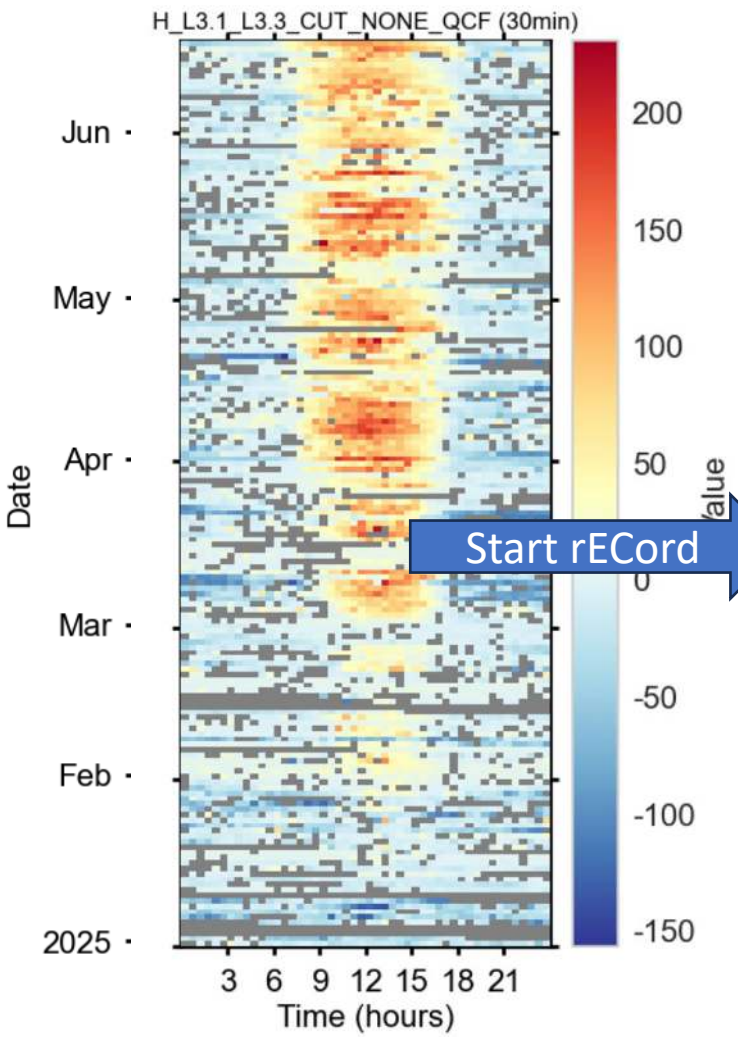
Photo: Lukas Hörtnagl

site info

CH-FRU Fluxes H, H2O, CO2

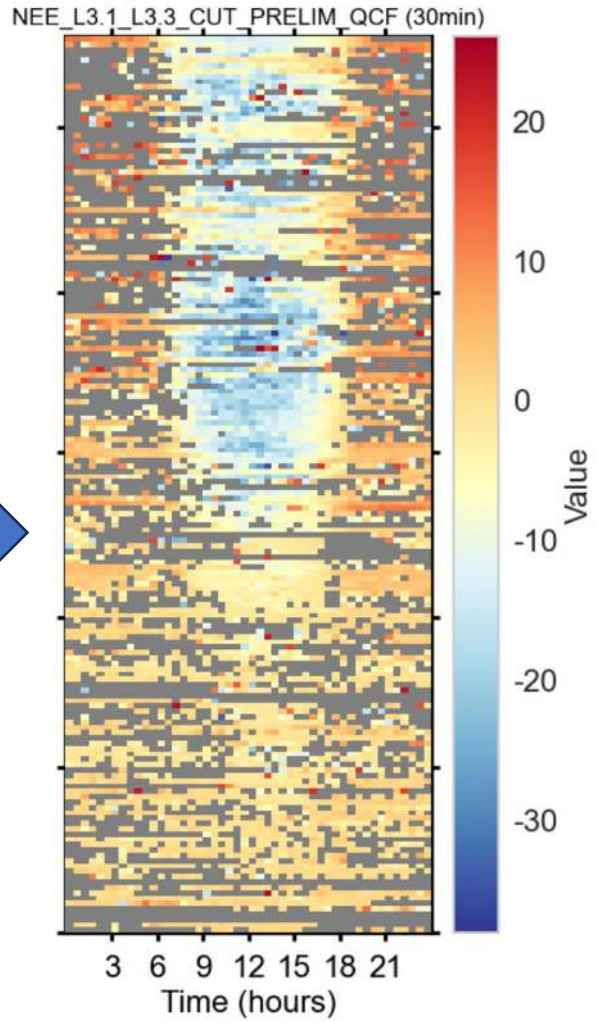
MAIN TOWER (sonicread+rECord)

H

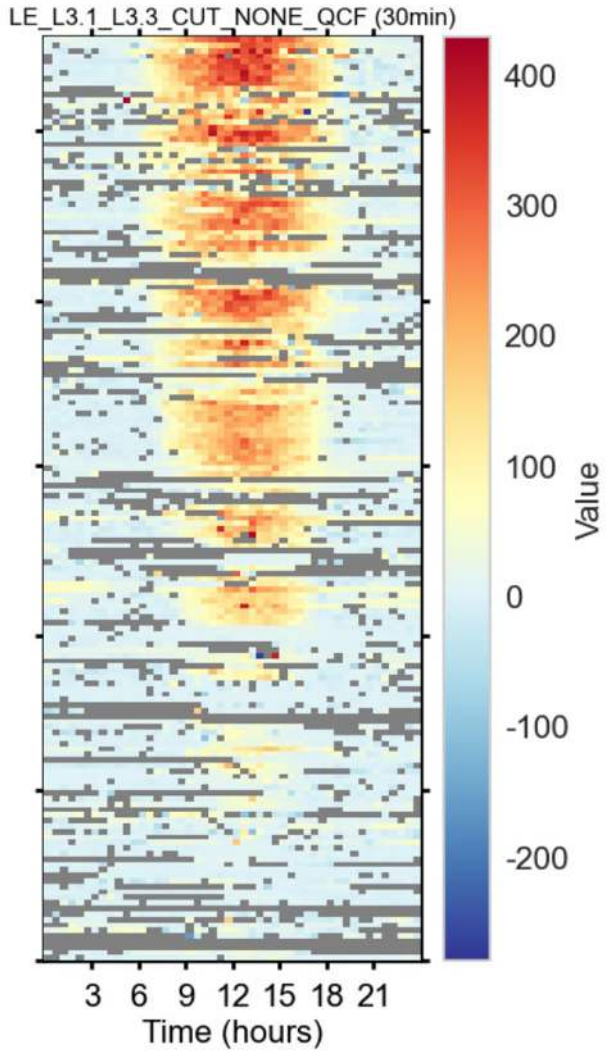


Start rECord

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

site info

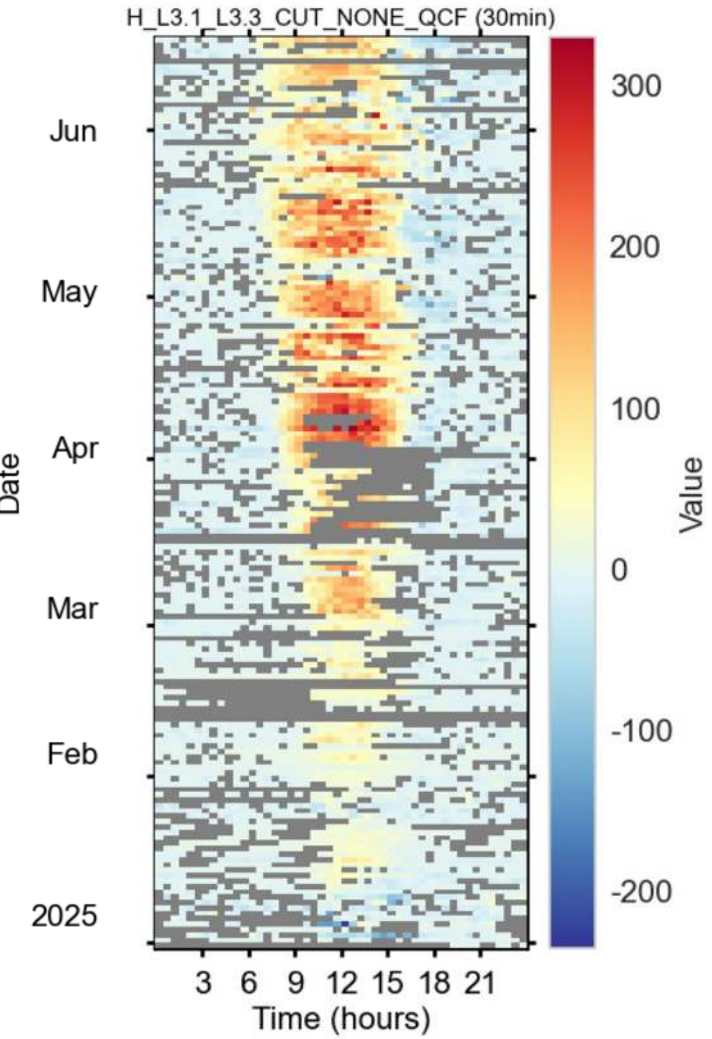
CH-HON

Photo: Lukas Hörtnagl

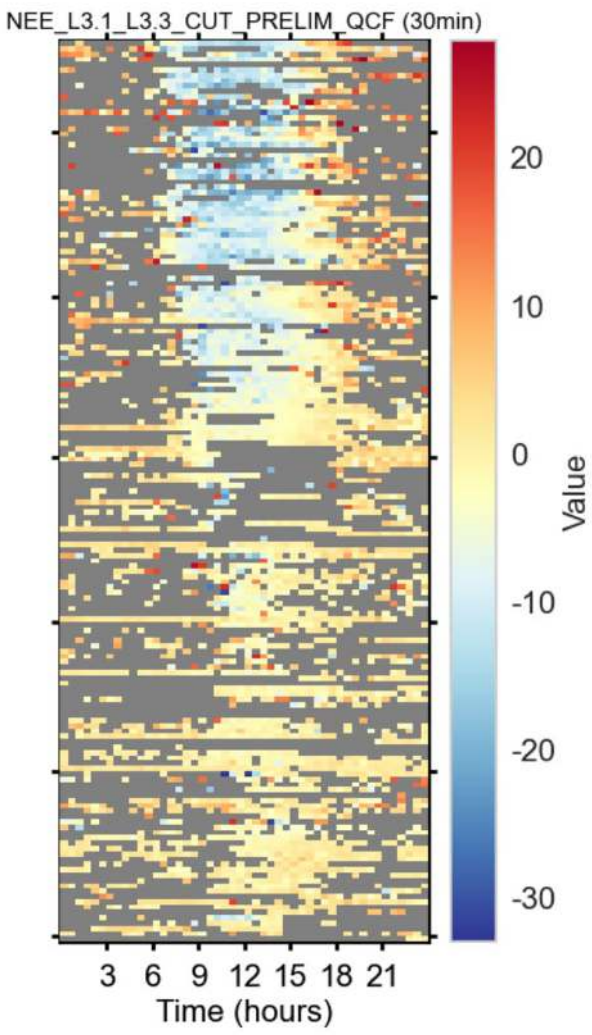
site info

CH-HON Fluxes H, H2O, CO2

H



CO2 flux



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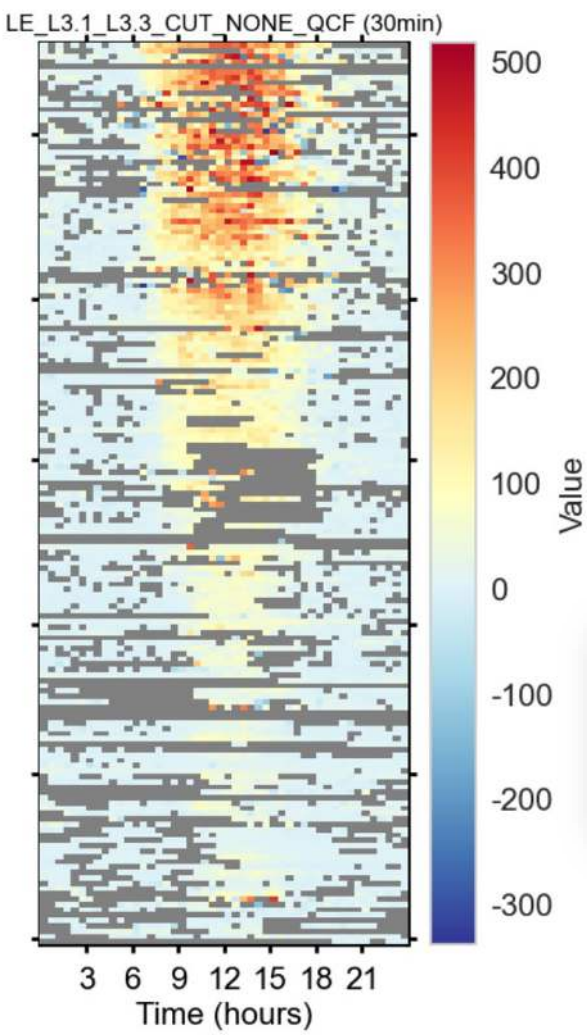
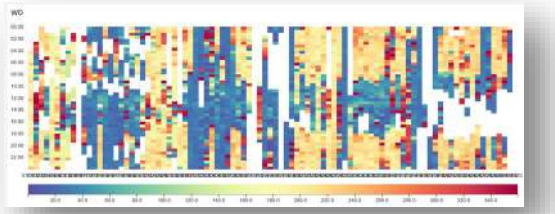


- With preliminary QCF using the diive notebook notebooks/FluxProcessingChain/QuickFluxProcessingChain.ipynb
- Highest- and medium-quality fluxes
- Preliminary outlier removal
- With preliminiary USTAR filtering for NEE

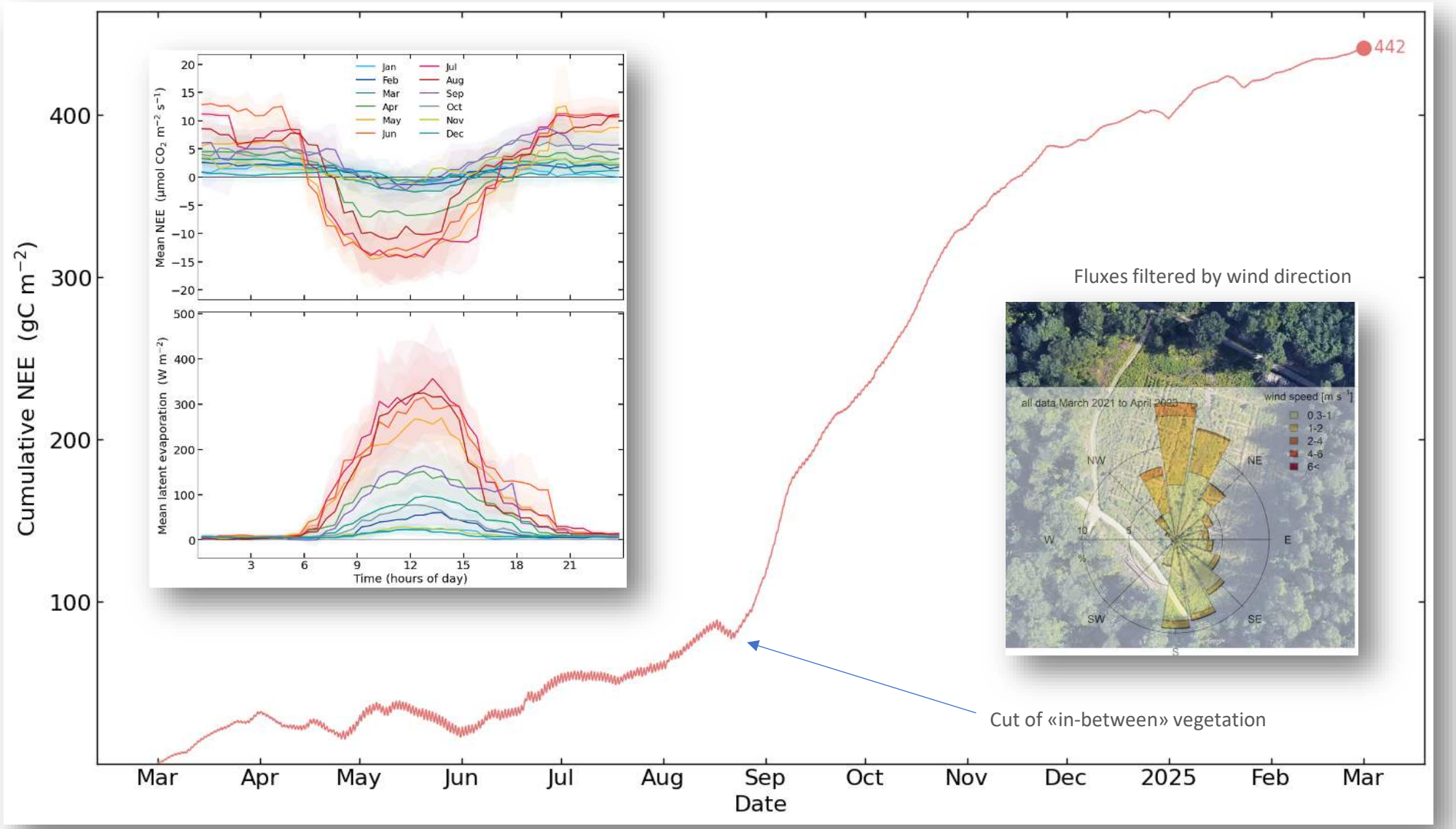


- Wind direction this year so far
- red/blue/green = footprint of interest
- Orange = behind tower, on path
- Will need QC with wind direction included

site info

CH-HON First CO2 budget

Mar 2024 – Feb 2025: the young forest was a strong CO2 source, 442 g C m-2



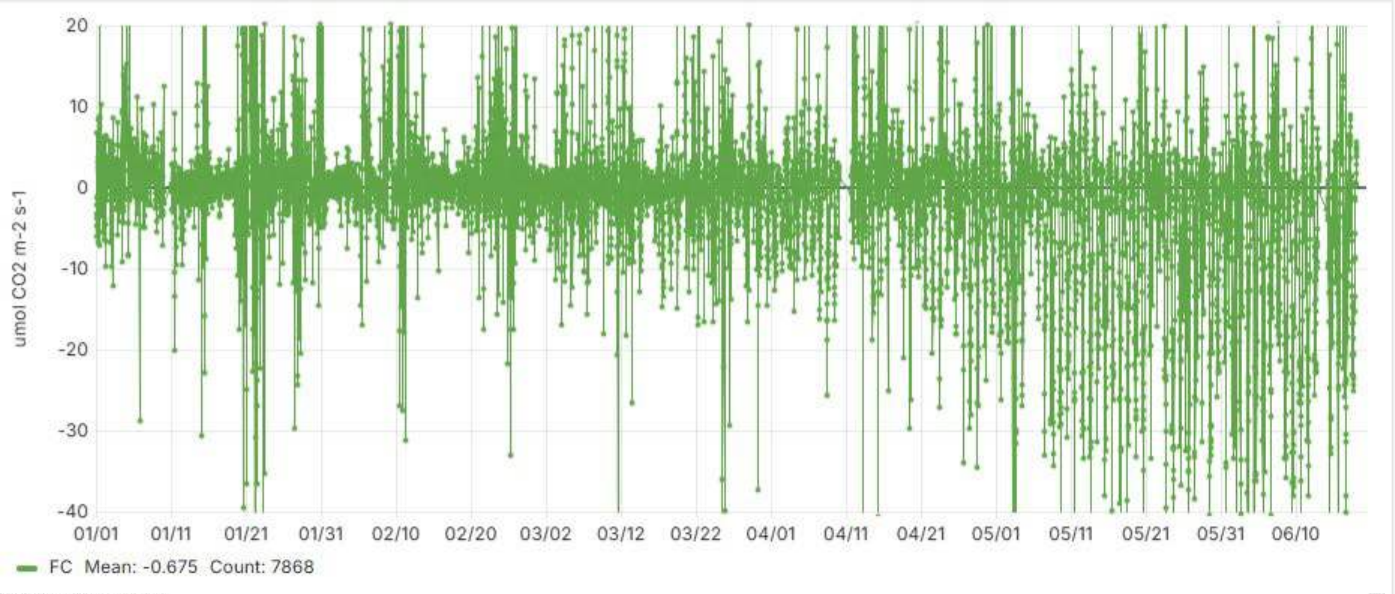
site info

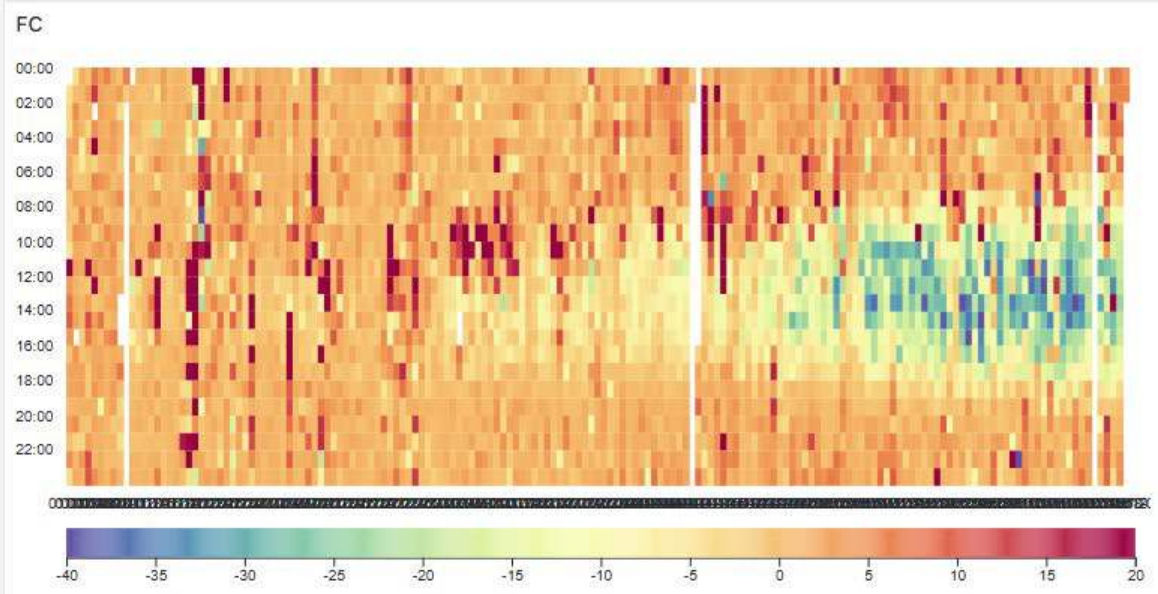
CH-LAE

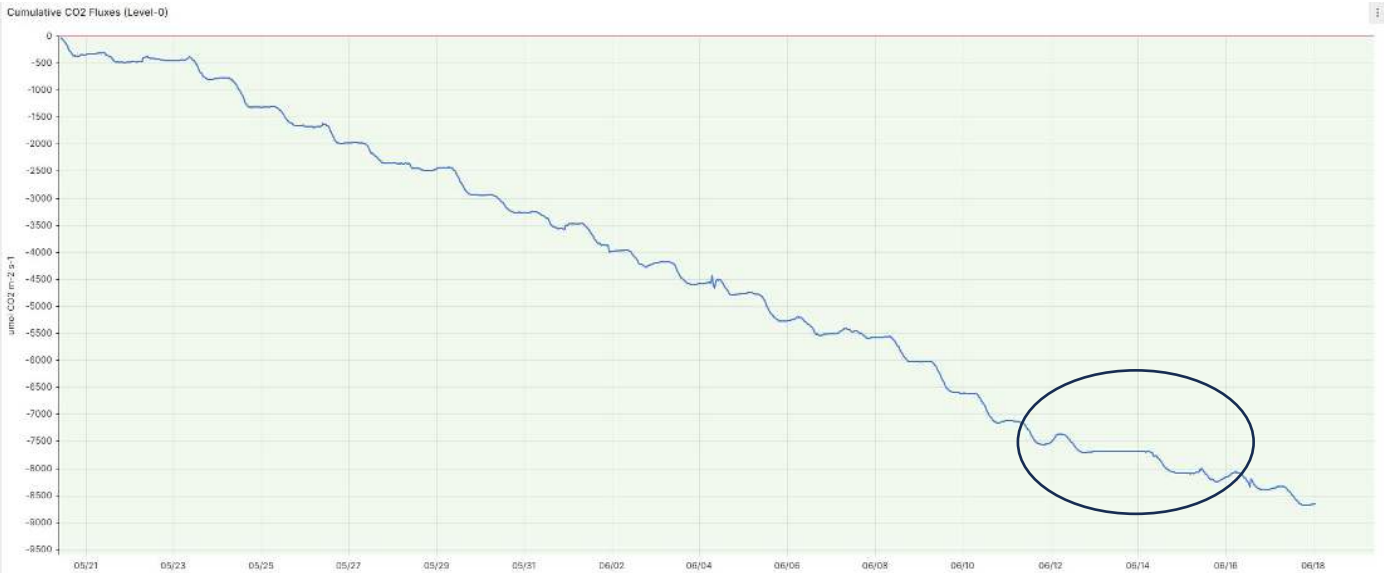
Photo: Markus Staudinger

site info

CH-LAE CO2 flux



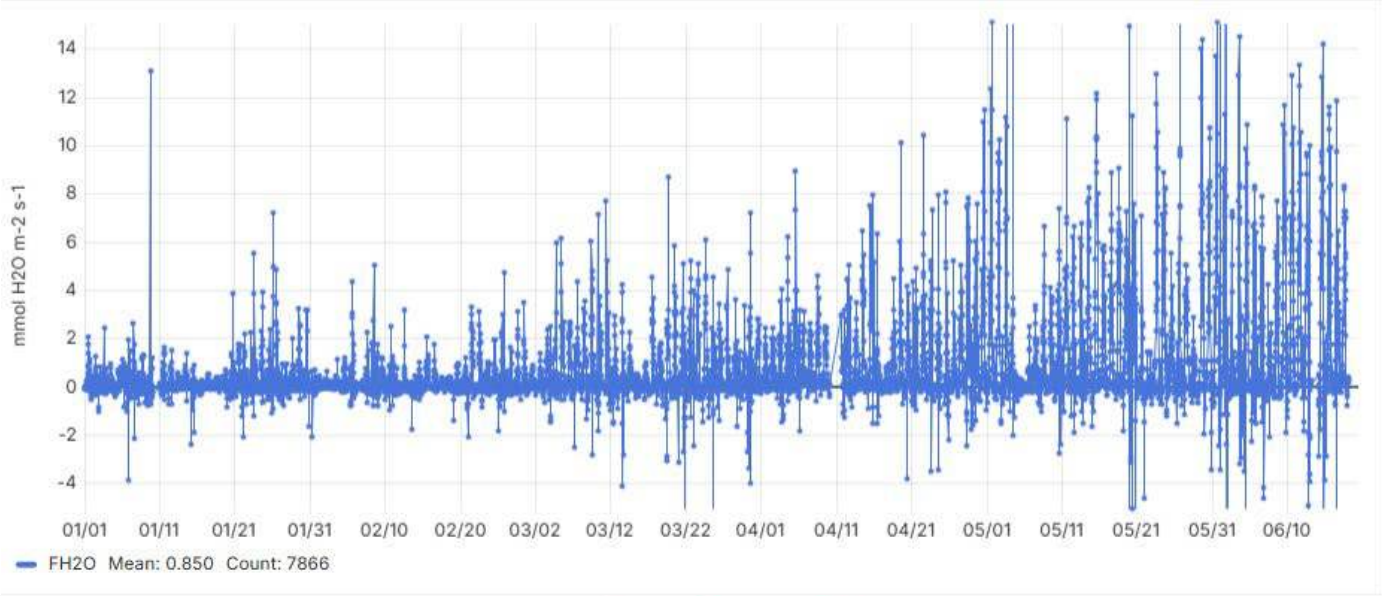


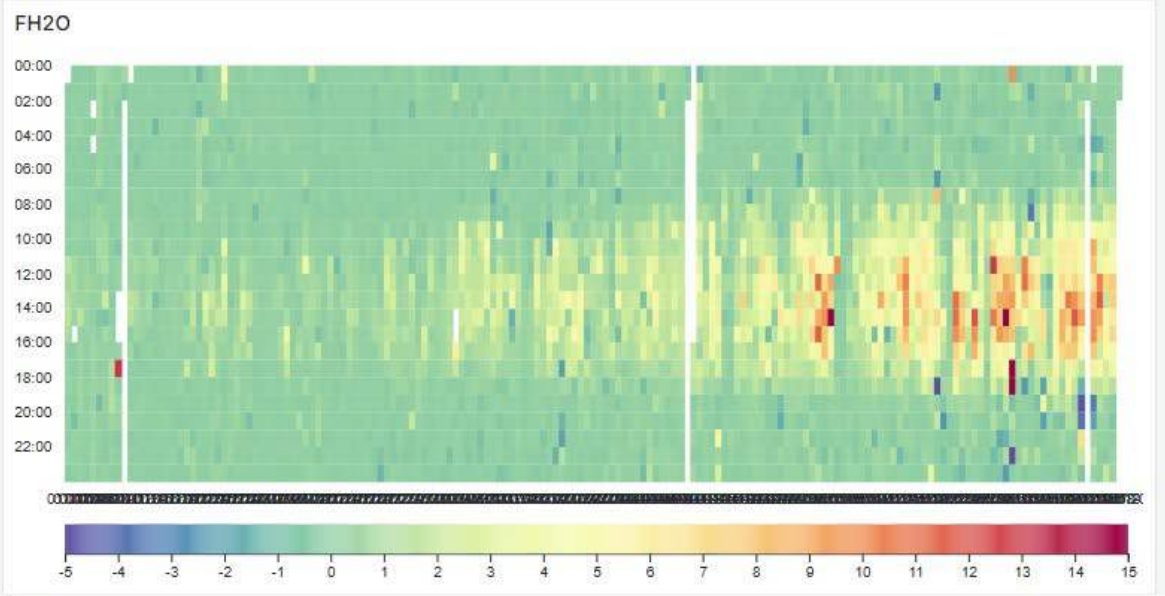


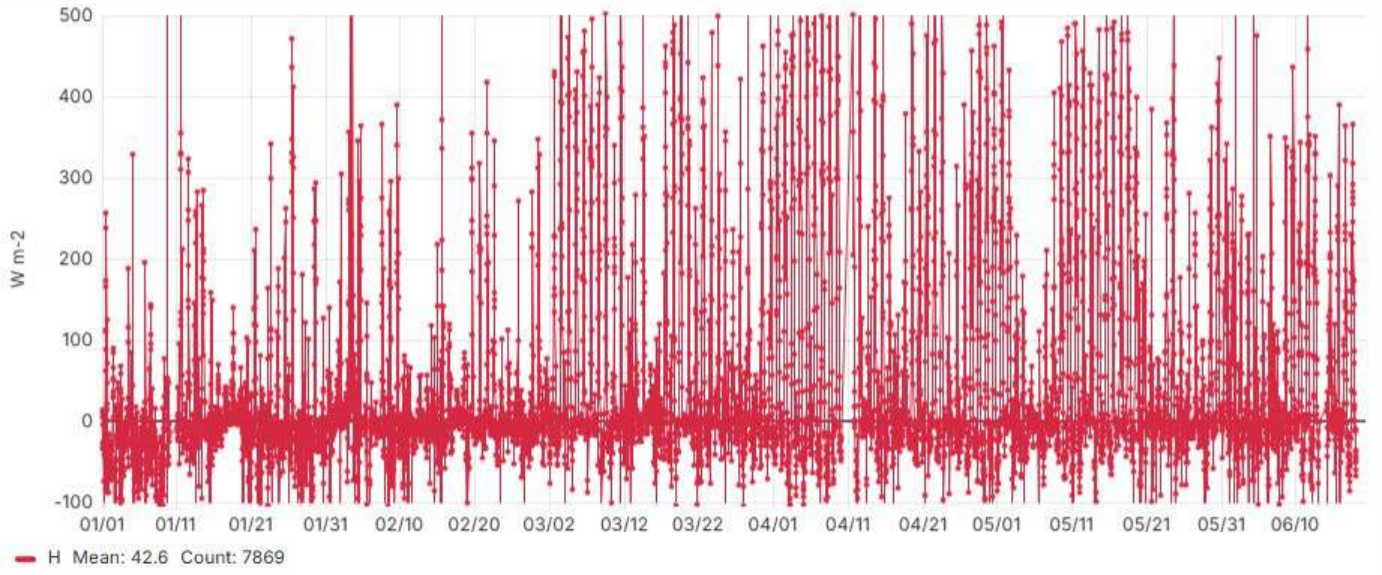
- Hot days max temp ca. 29°C 13-14 June

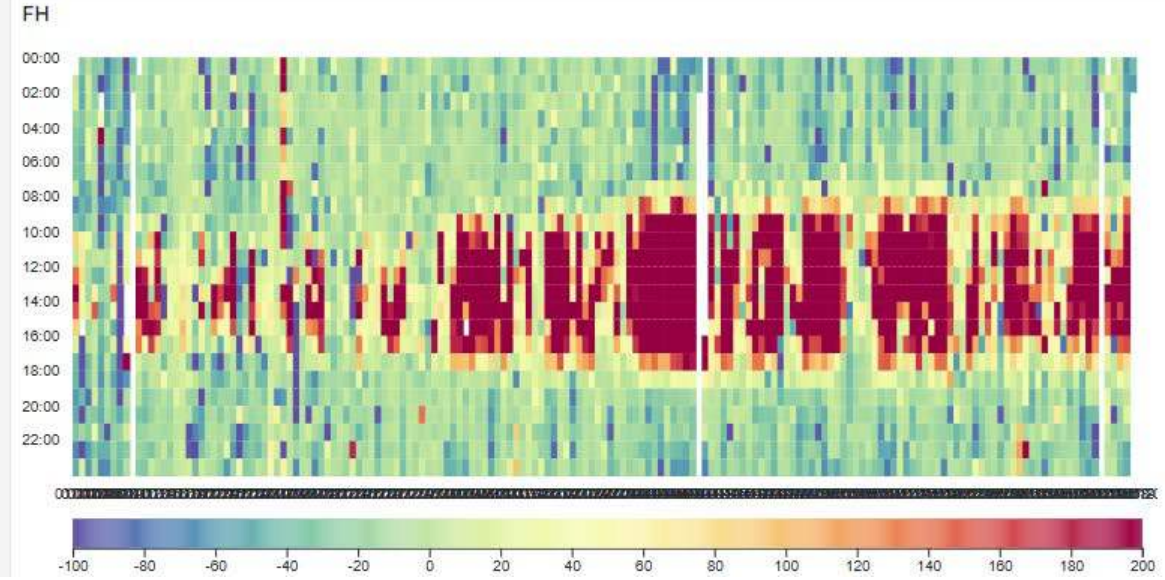
site info

CH-LAE H2O - H







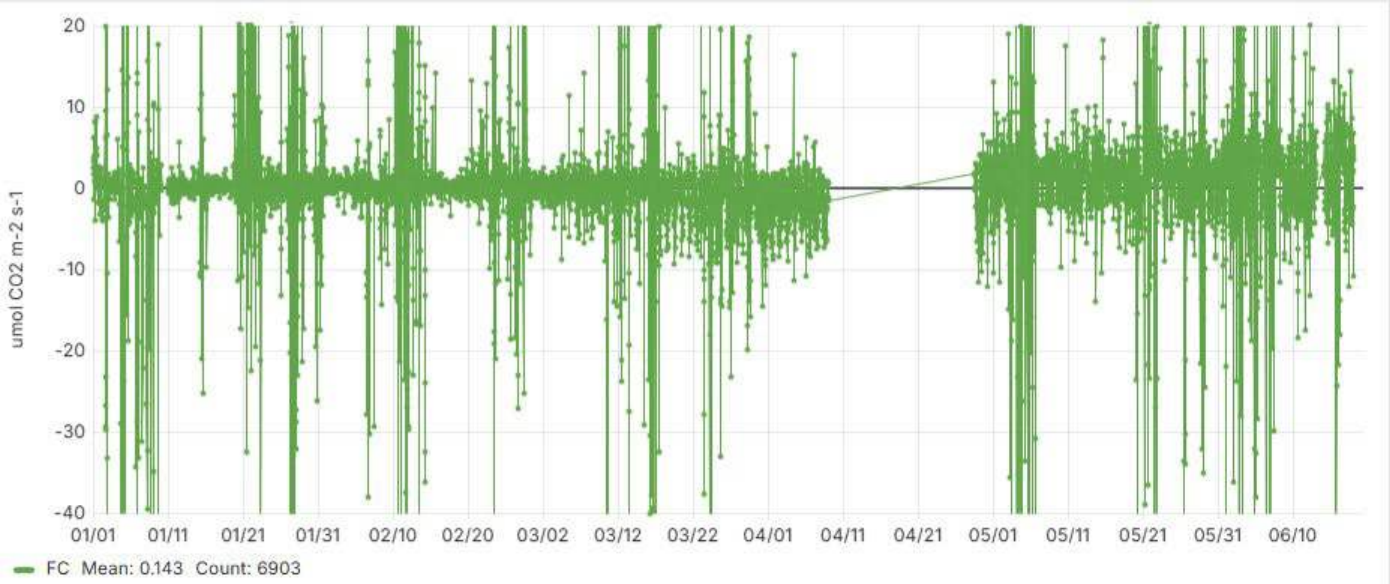


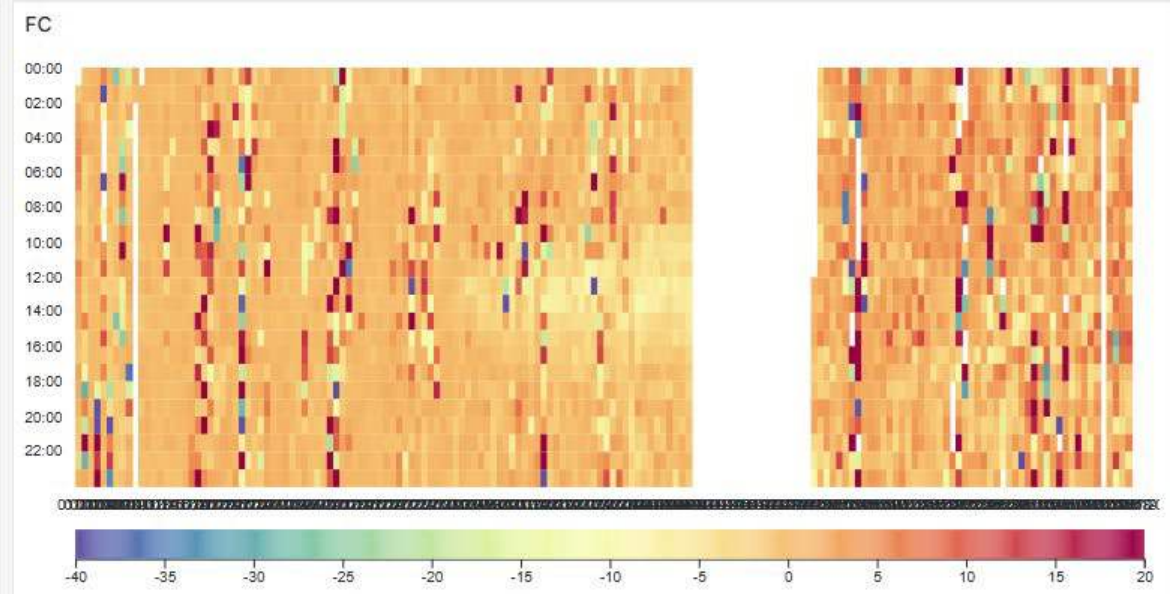
site info

CH-LAS

Photo: Liliana Scapucci

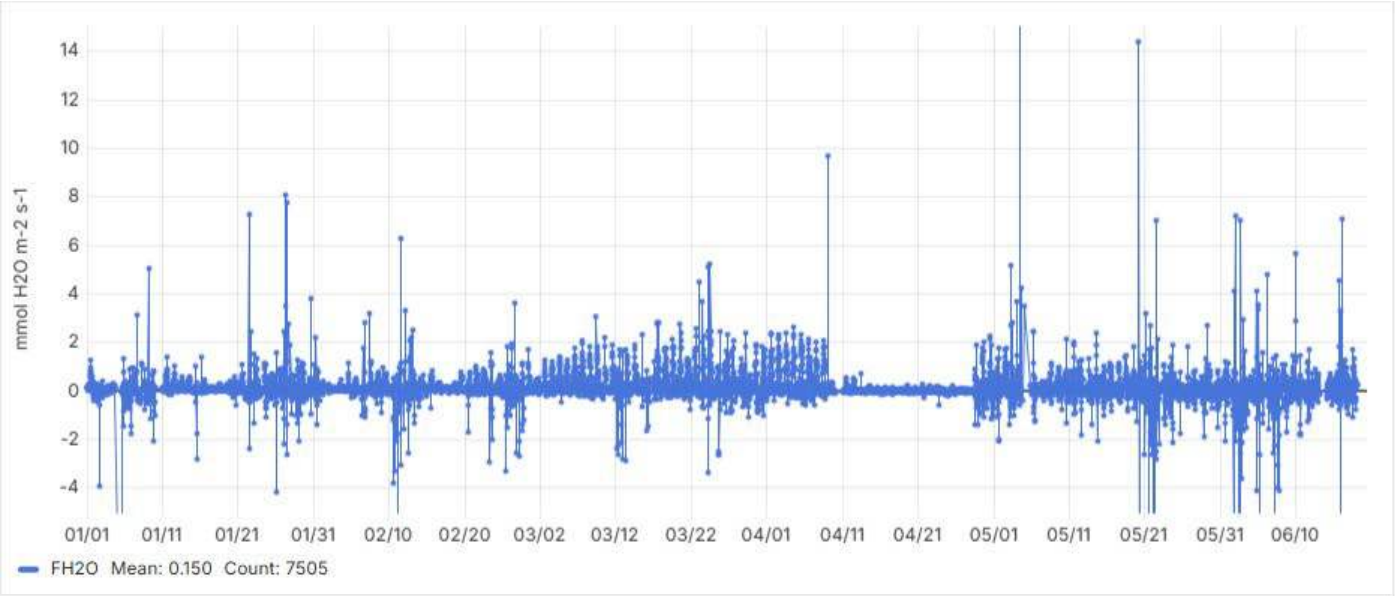
CH-LAS CO2 flux

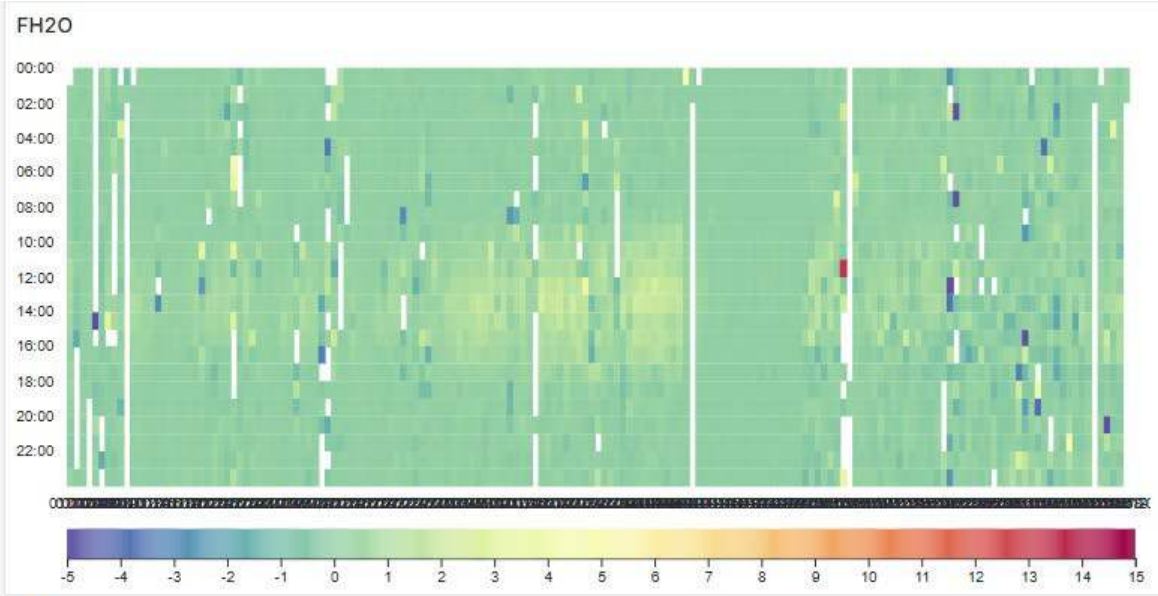


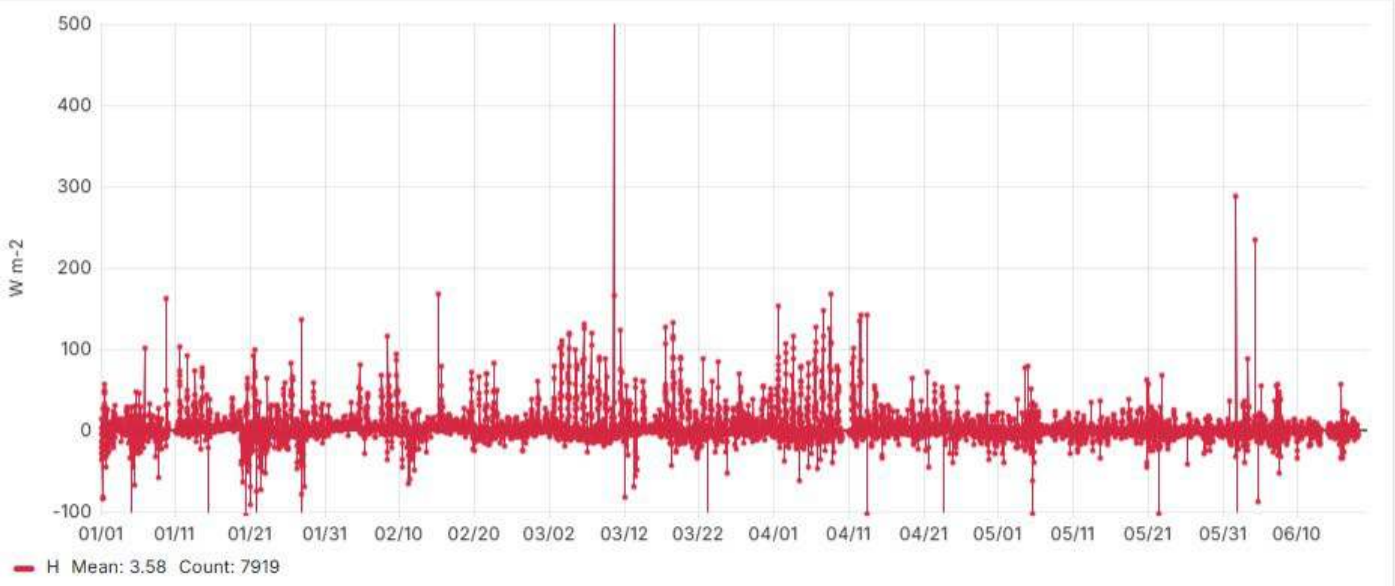


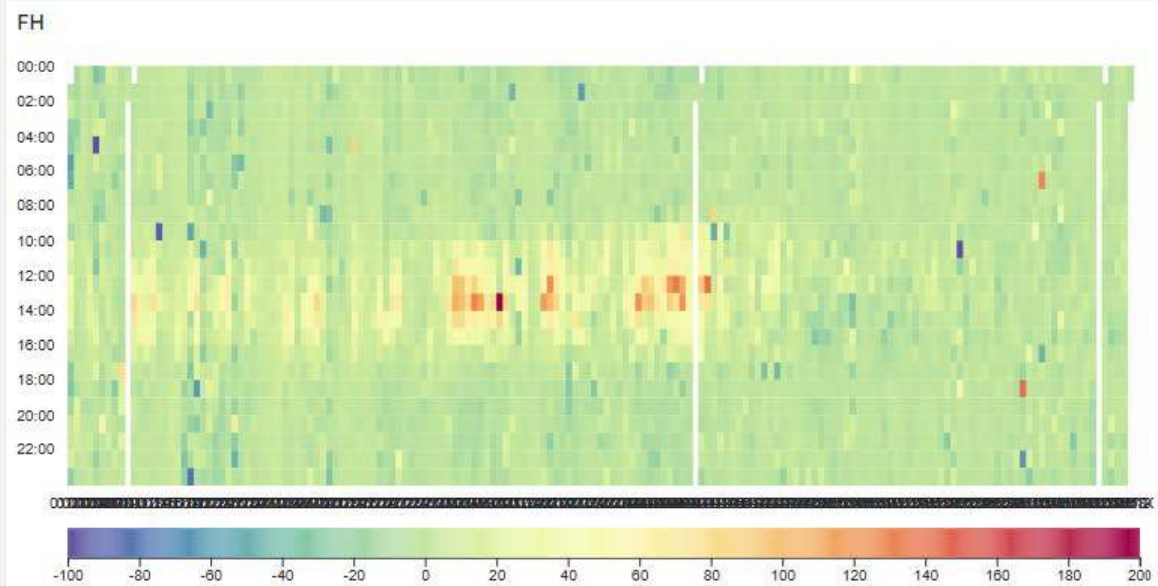
site info

CH-LAS H2O – H flux









site info

CH-OE2

Photo: Regine Maier

CH-OE2

Picture from May 6th

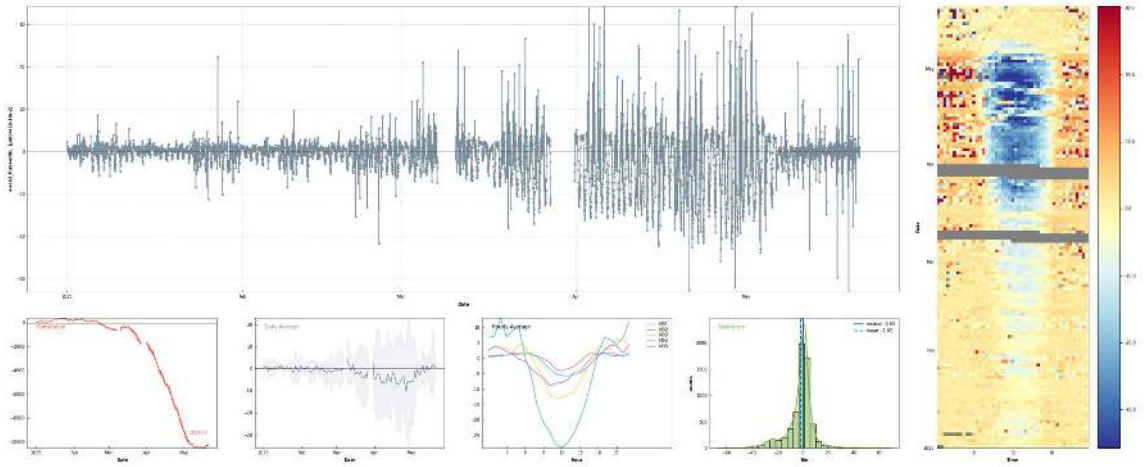
Visiting station for the introduction to how to maintain/clean the instruments

CH-OE2

2 gaps due to IRGA → first we don't know why, the second due to power shortage

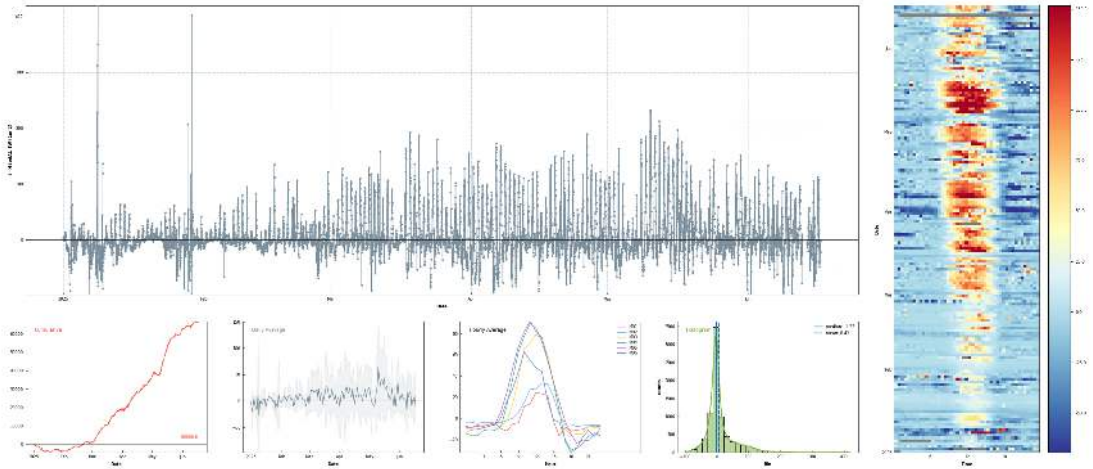
CO2 flux

Abs limits: -70+70



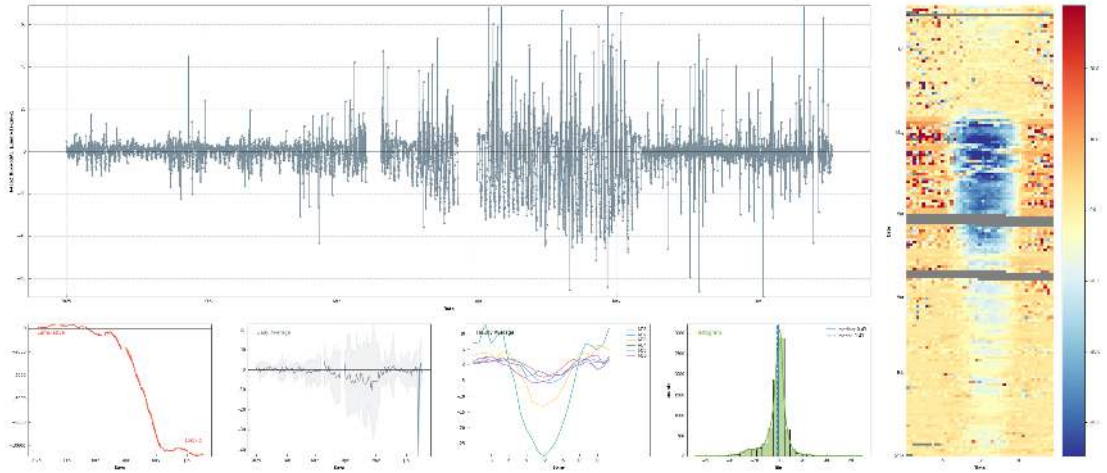
H

Abs limits: -100+450



H2O flux

Abs limits: -2+20



CH-OE2

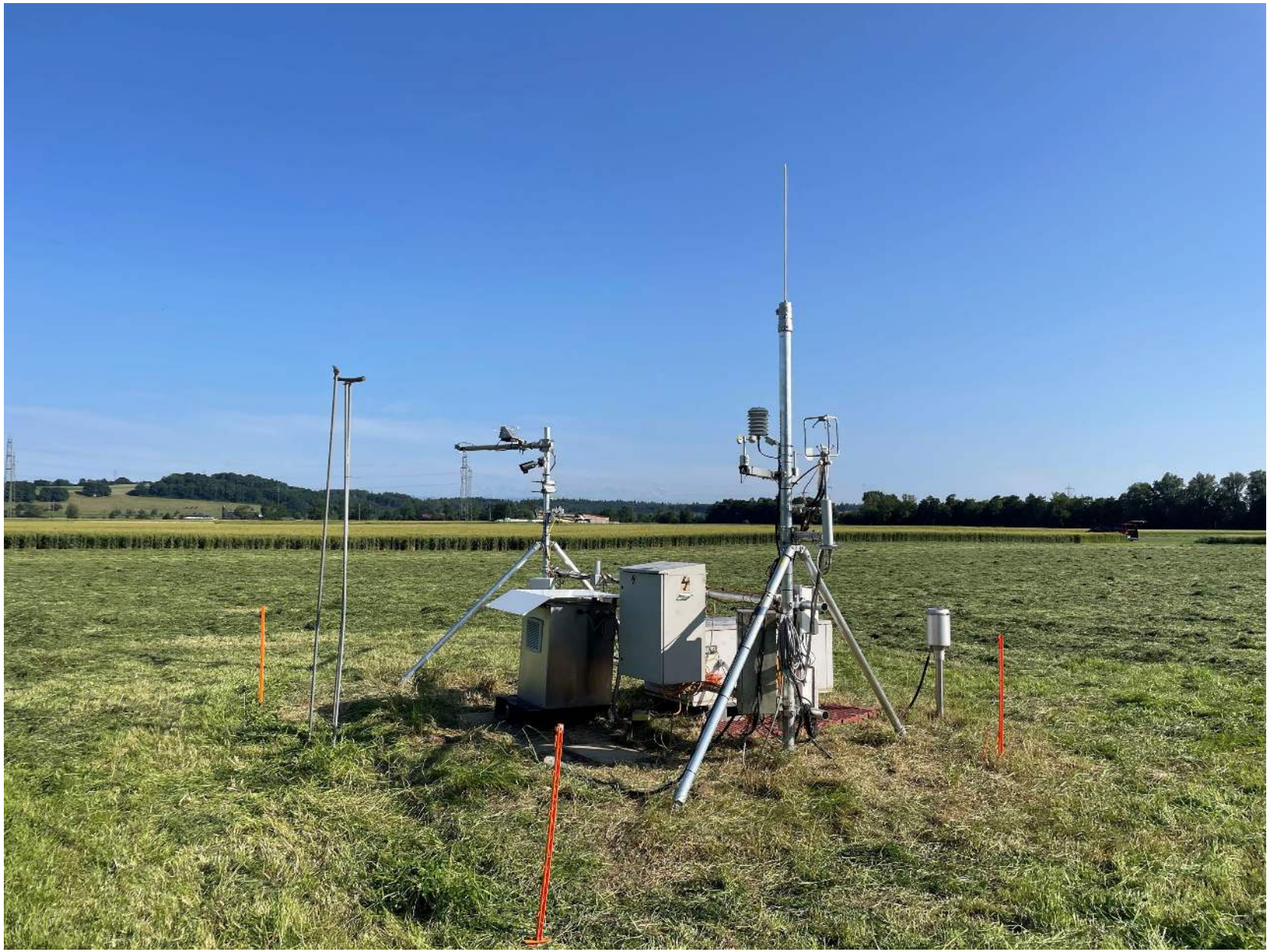
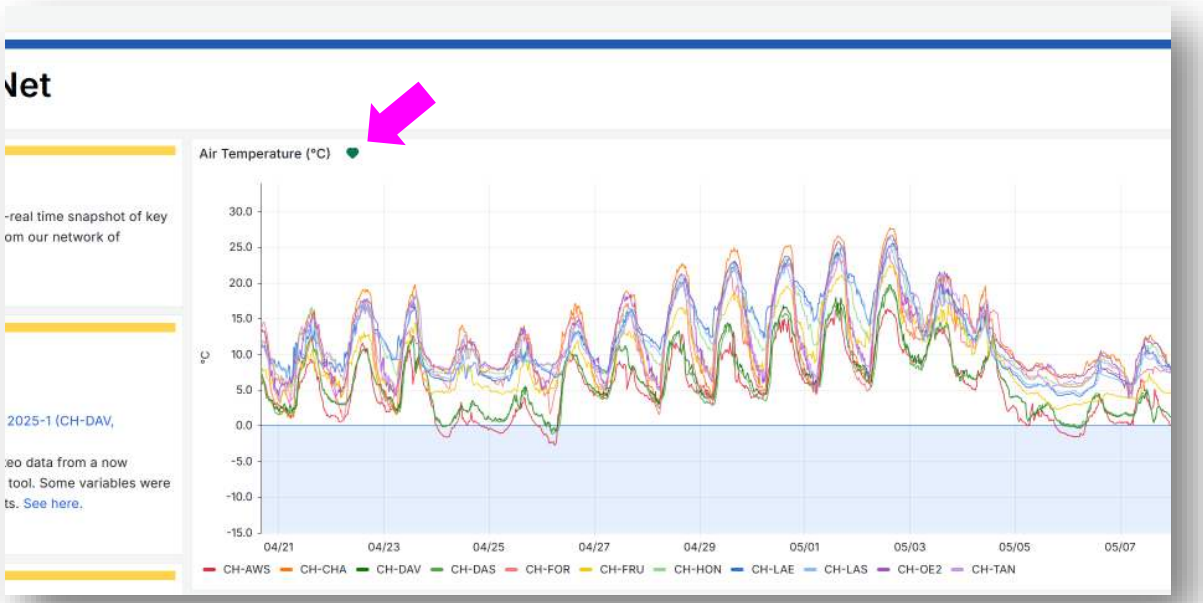


Photo by Martin

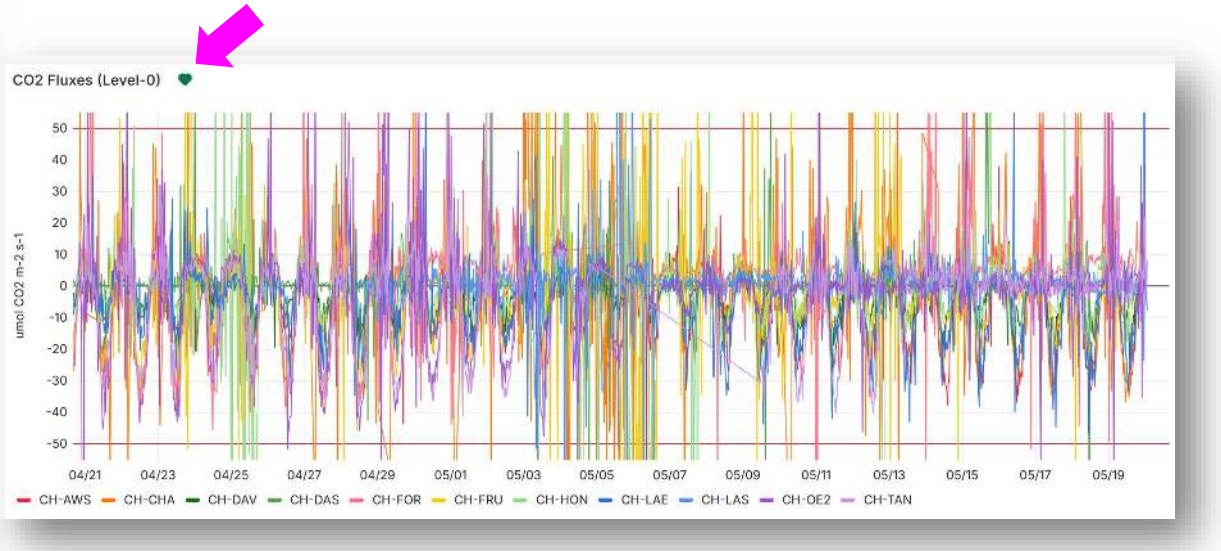
APPENDIX

ALL SITES Updated Grafana Alerts

UPDATED



Green heart means that all 11 sites have more than zero values for the shown air temperature variable over the last **48 hours**.

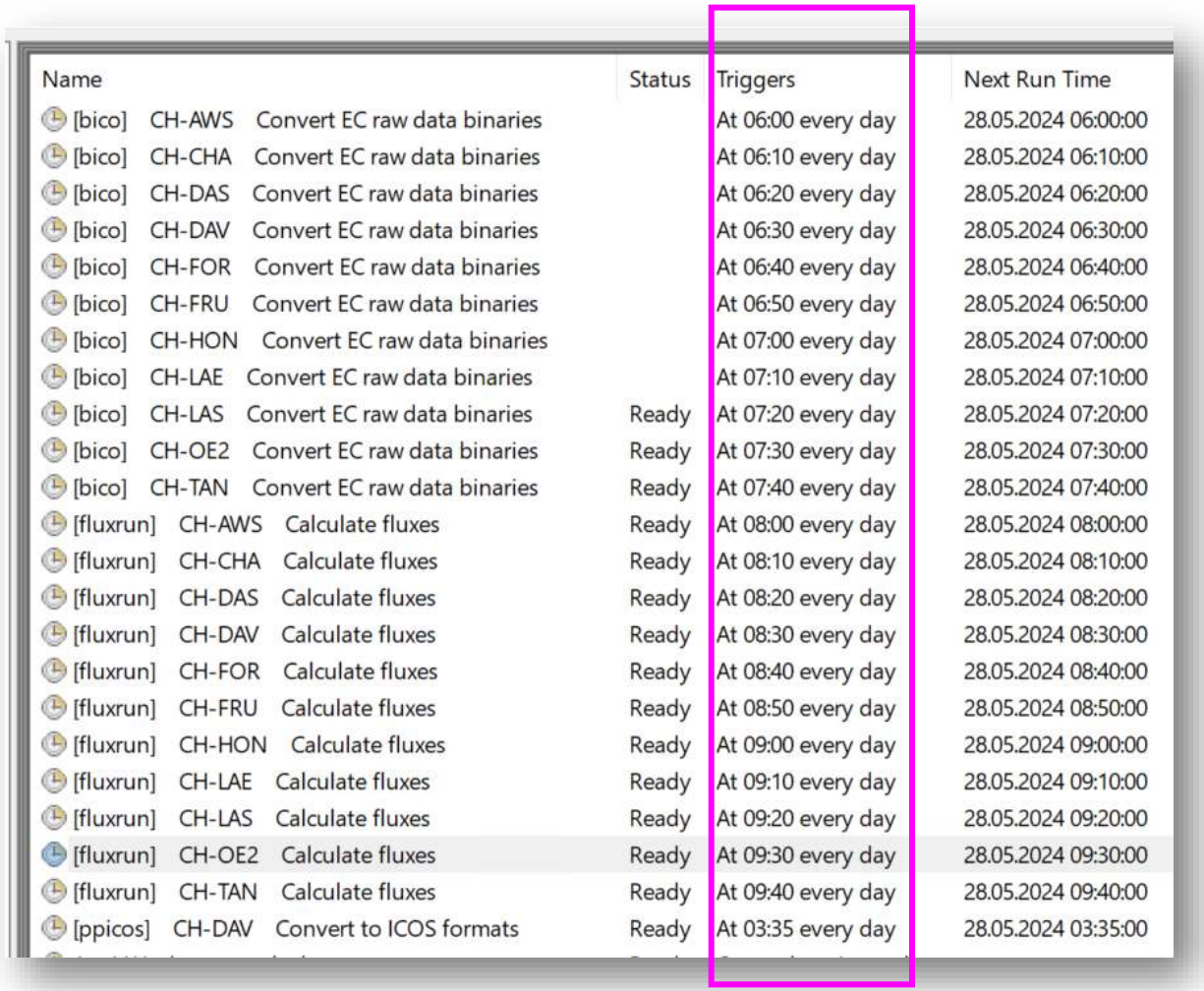


Green heart means that all 11 sites have more than 50% of potential FC fluxes available over the last **72 hours**. Alert is run once every 24 hours, approx. at noon 12:20.

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**.

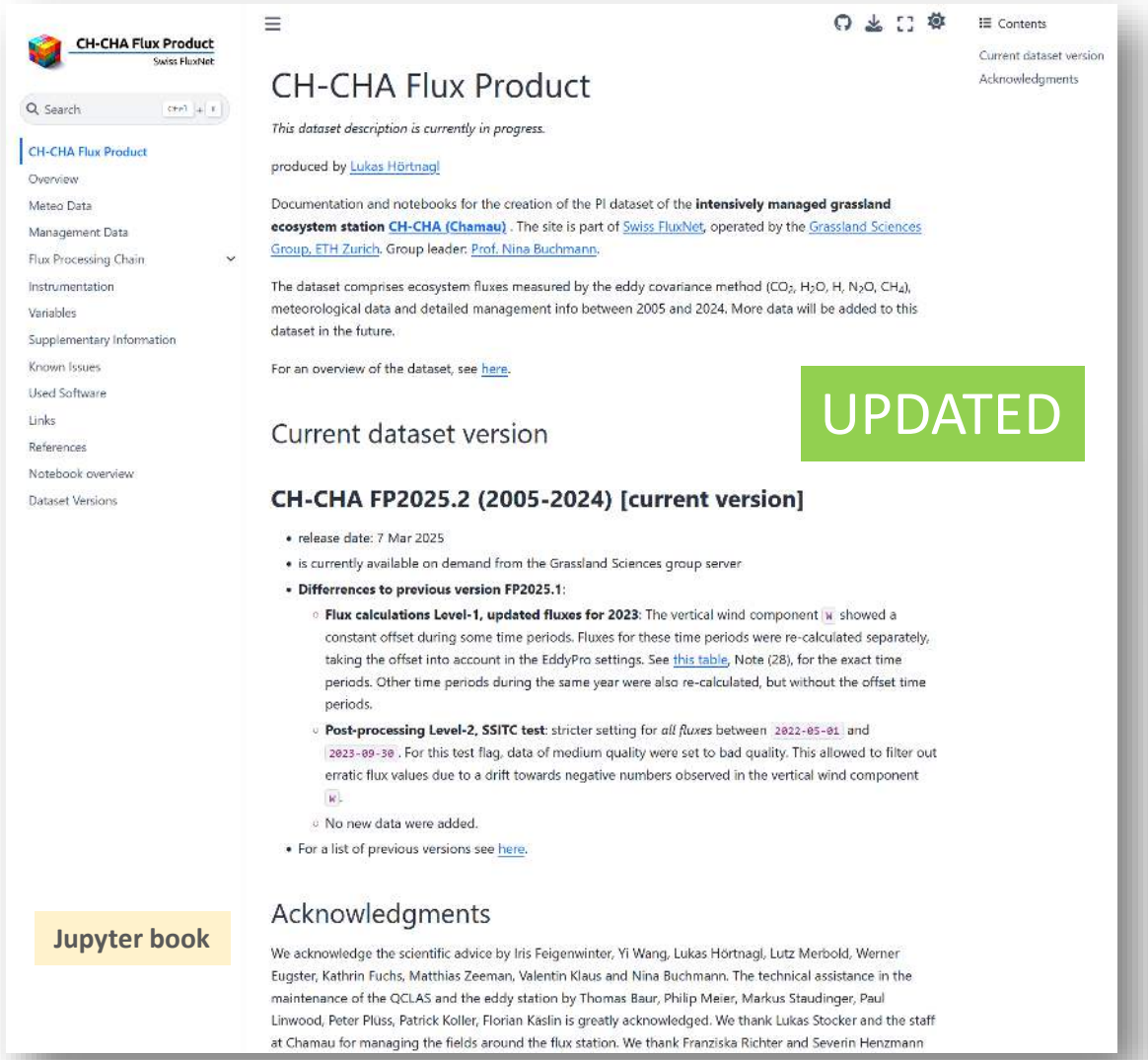
- dataflow uploads data to the database
- Meteo data upload starts between 7:00 (AWS) and 7:46 (TAN)
- Flux data upload starts between 11:00 (first site, AWS) and 11:20 (last site, TAN)
- execution times are defined in the *crontab* file
- after upload, data are immediately available in Grafana
- **all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

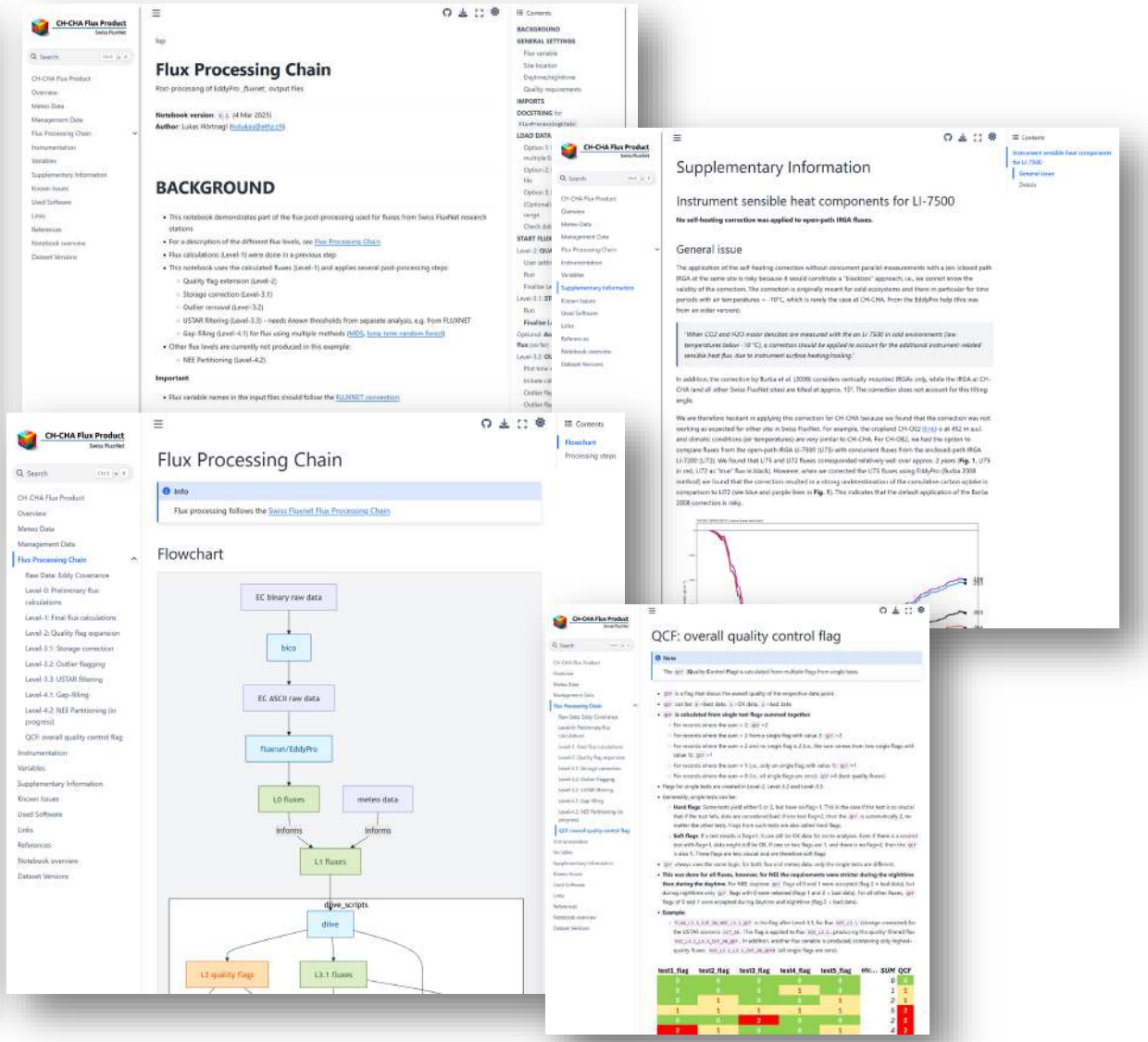
Example AWS during summer/winter local time:

- 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

Processing Docs

Jupyter book about new CH-CHA PI dataset

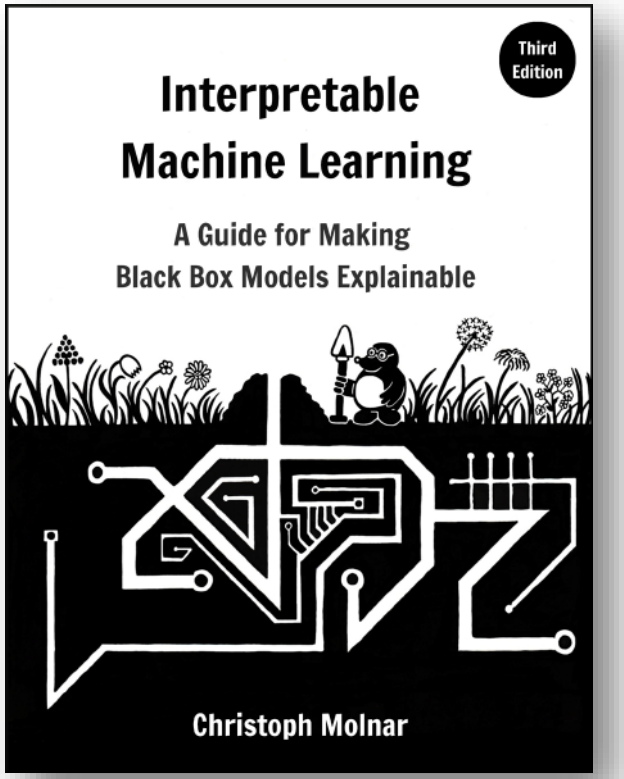




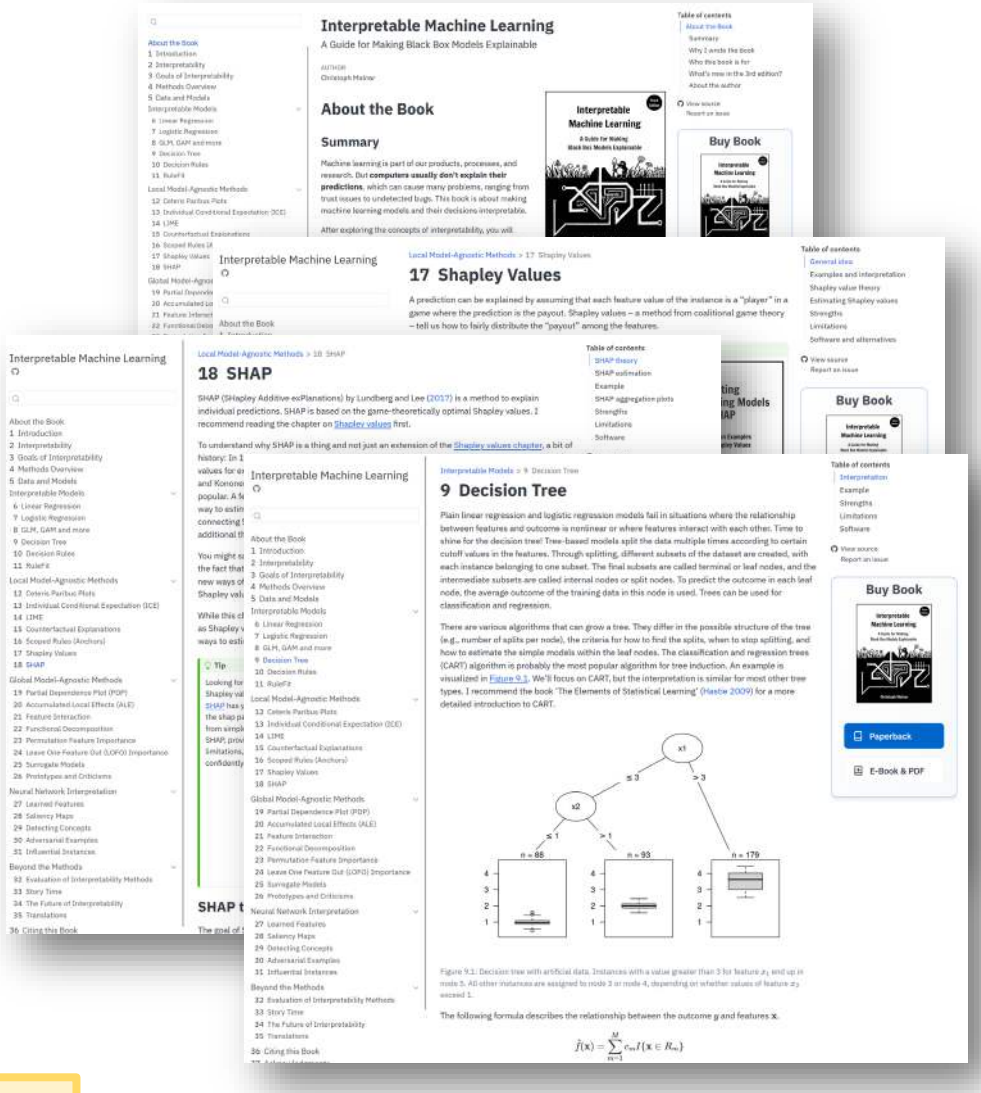
https://holukas.github.io/dataset_ch-cha_flux_product/intro.html

Recommendation

Jupyter book about ML



- Free online version
- Good chapters e.g. about SHAP



- Also: there is an extra book (not free) about [Interpreting Machine Learning Models With SHAP]

https://christophm.github.io/interpretable-ml-book/