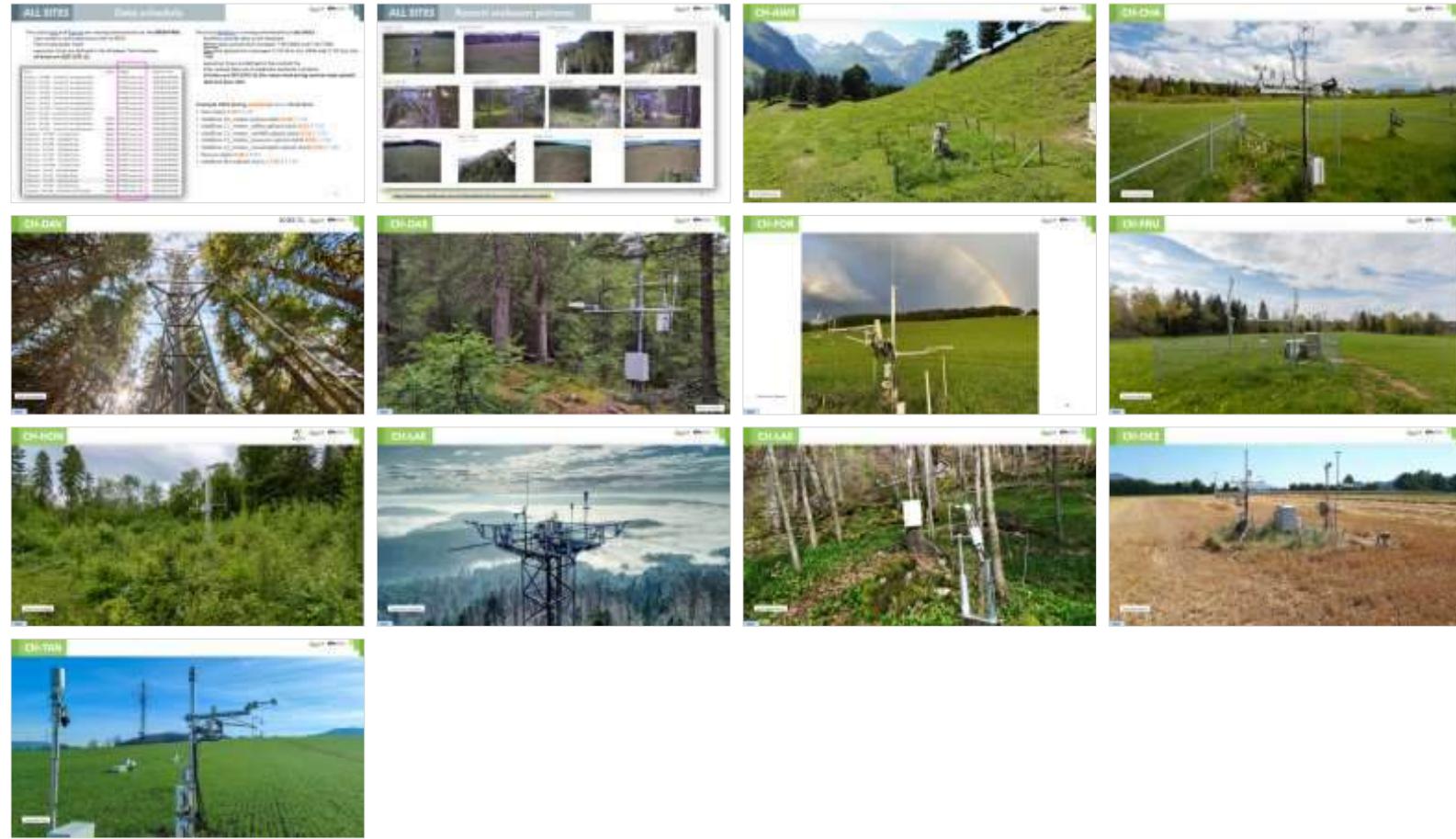


QA/QC Meeting

22 Aug 2024

Participants: LH, IF, YW, LS (4)



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_Chamaus\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](#)

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-DE2



Webcam | CH-TAN

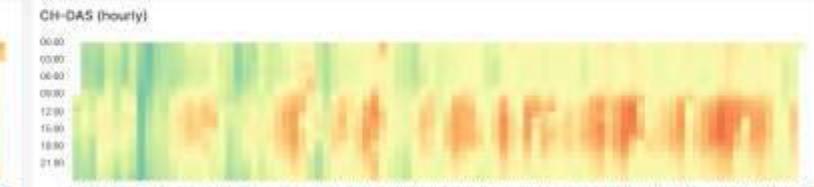
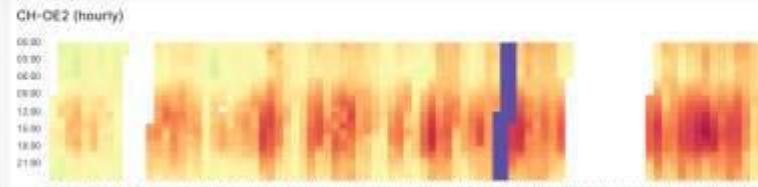
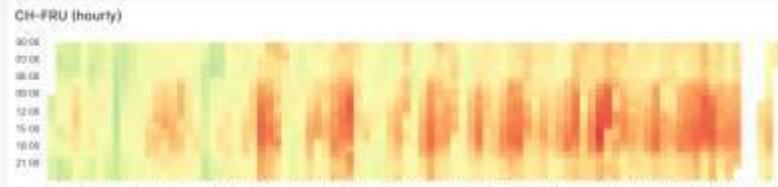
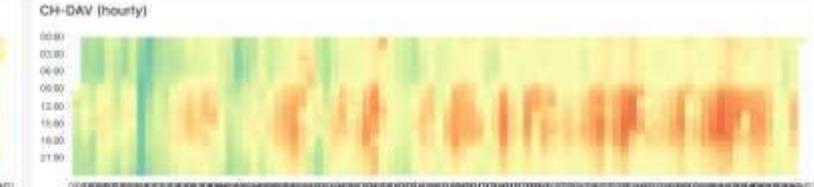
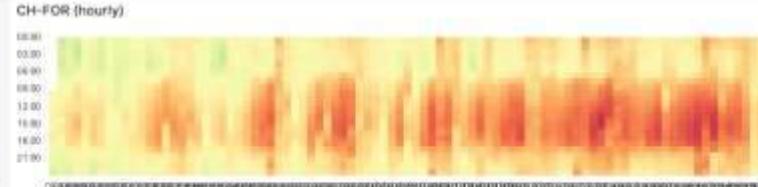
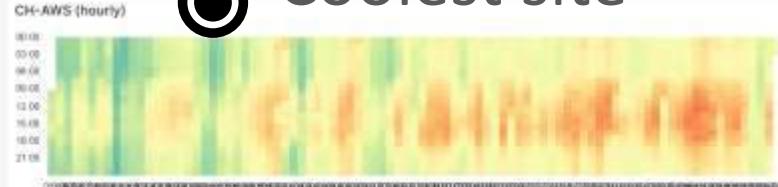




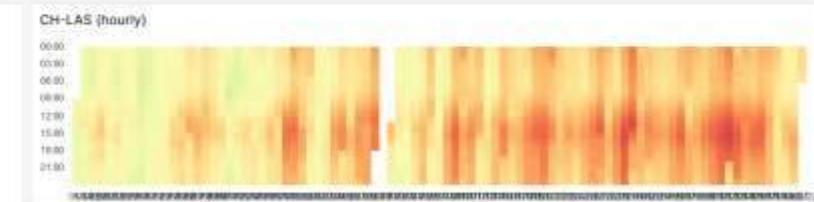
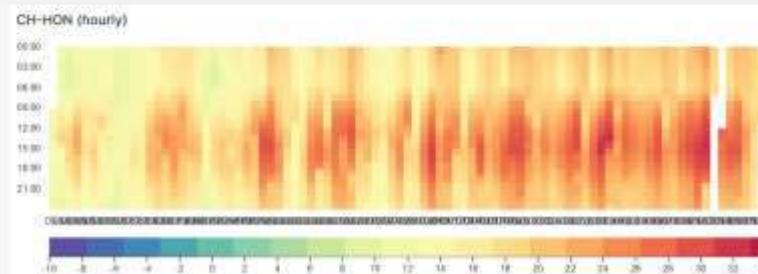
<https://dataviews.swissfluxnet.ethz.ch>



Coolest site



Hottest site



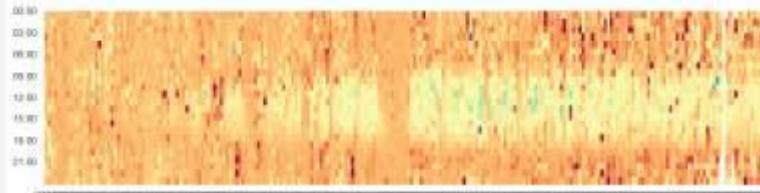
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FC, CO2 flux: This year so far ...

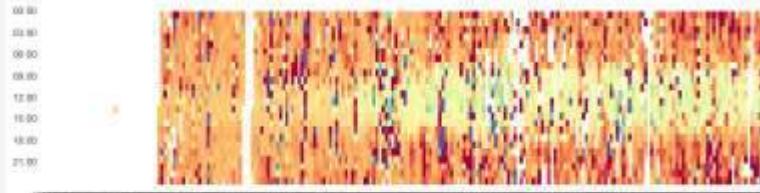
ch-aws_processed: FC (hourly)



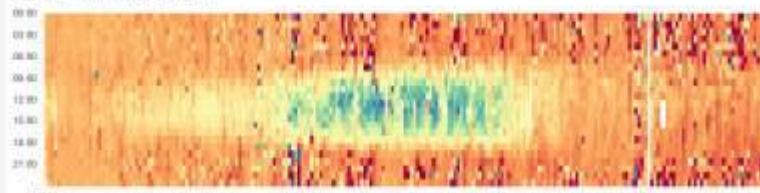
ch-dav_processed: FC (hourly)



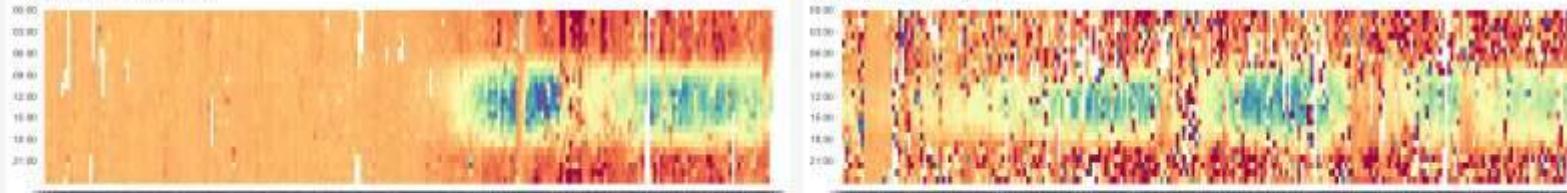
ch-han_processed: FC (hourly)



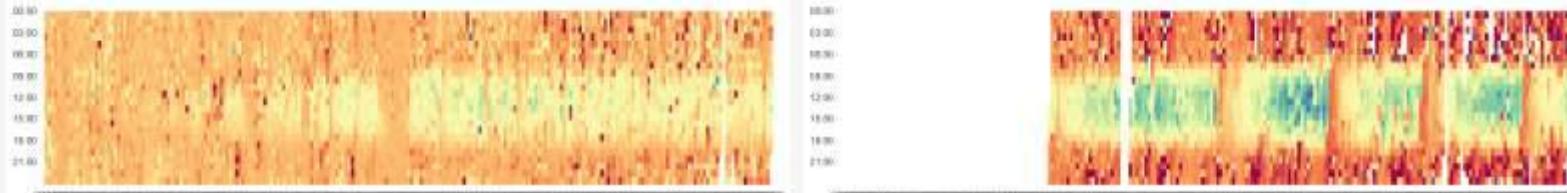
ch-oer2_processed: FC (hourly)



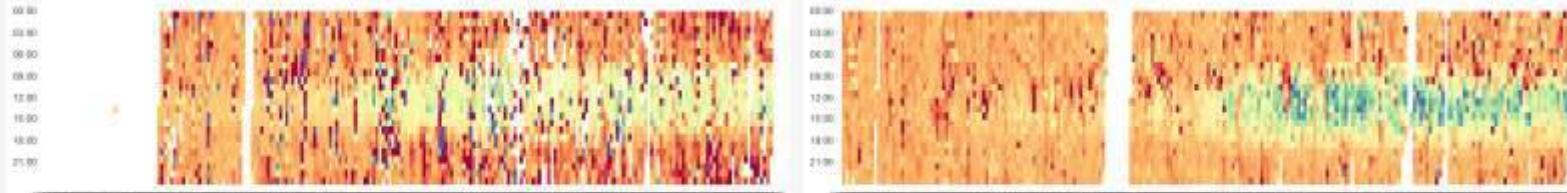
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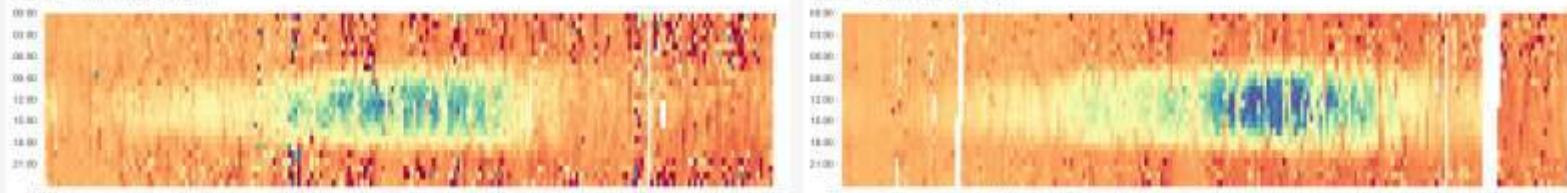
ch-for_processed: FC (hourly)



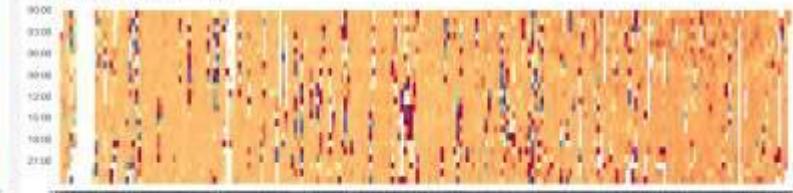
ch-lae_processed: FC (hourly)



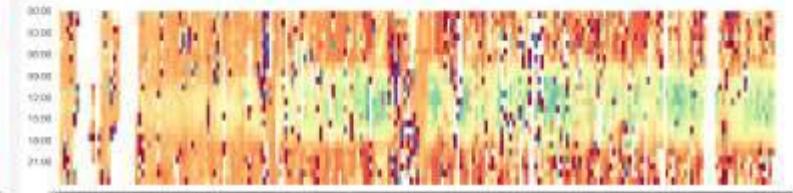
ch-tan_processed: FC (hourly)



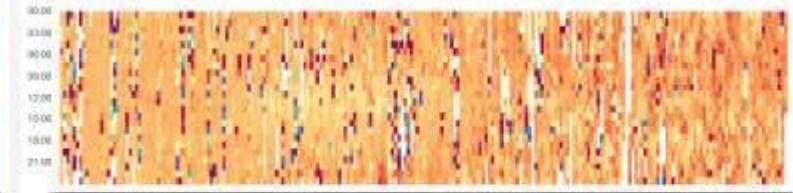
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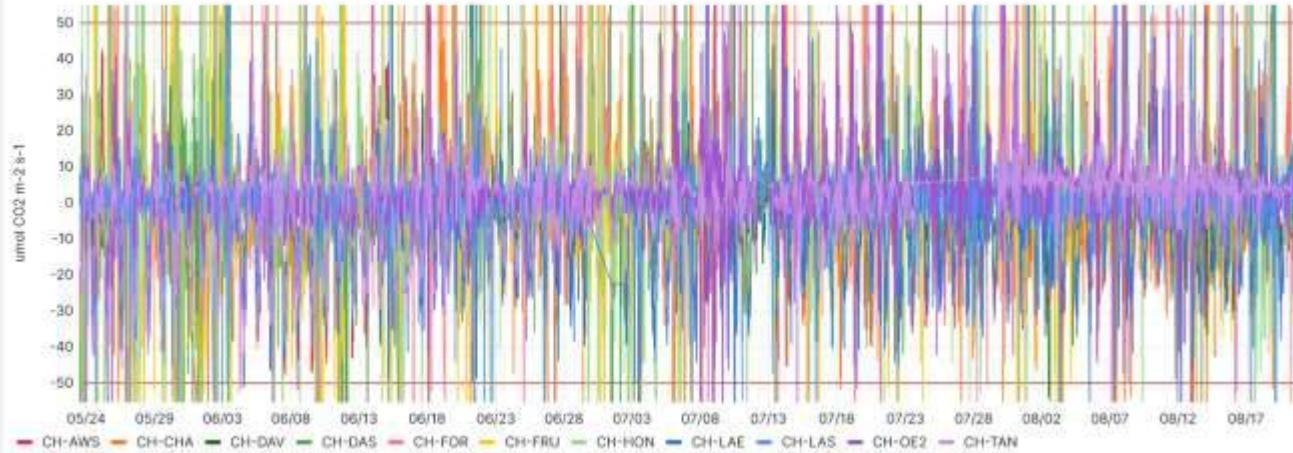
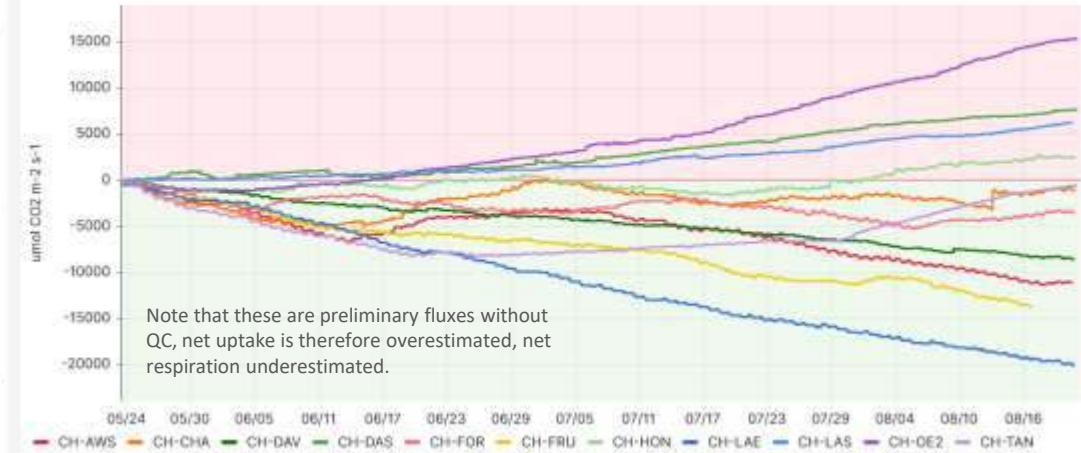
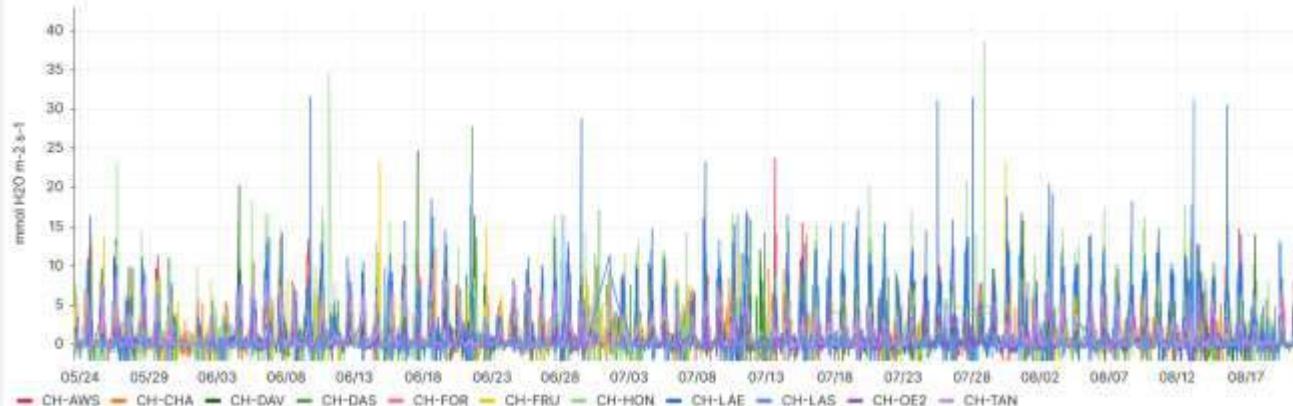
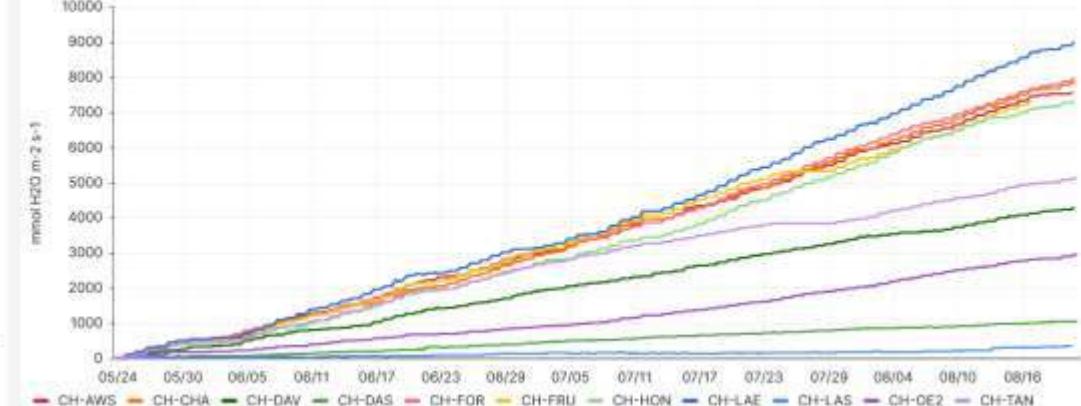
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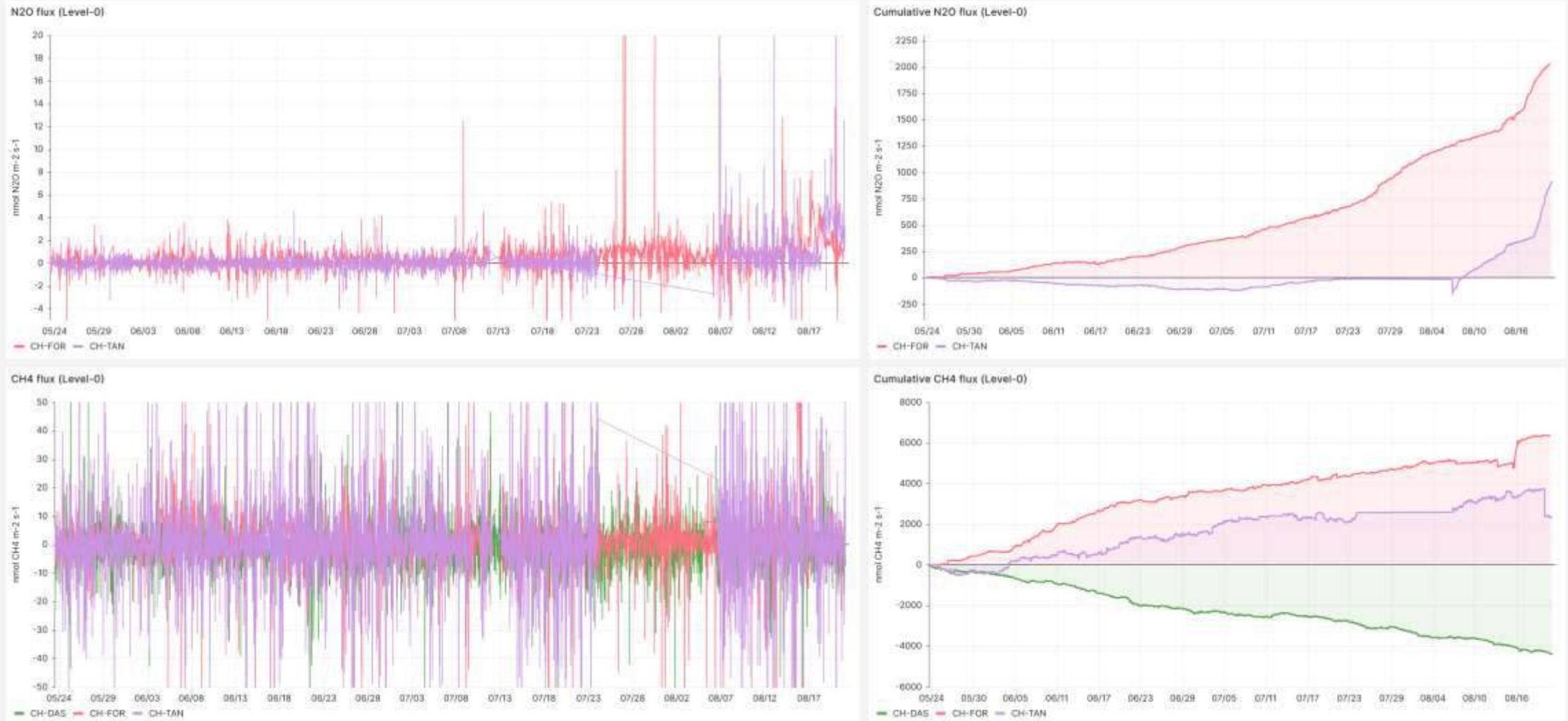
ch-las_processed: FC (hourly)

<https://dataviews.swissfluxnet.ethz.ch>

Last 90 days

CO₂ Fluxes (Level-0)Cumulative CO₂ Fluxes (Level-0)H₂O Fluxes (Level-0)Cumulative H₂O Fluxes (Level-0)
<https://dataviews.swissfluxnet.ethz.ch>

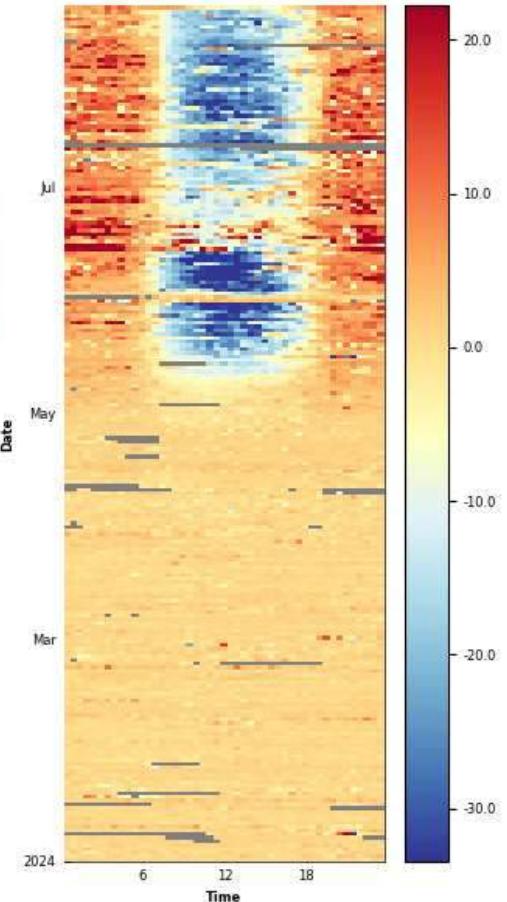
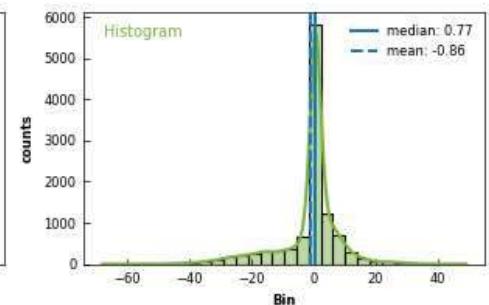
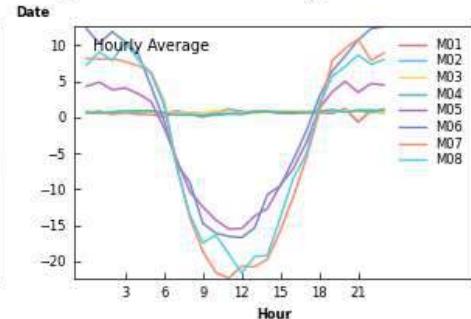
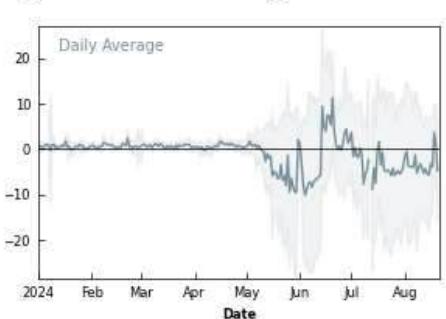
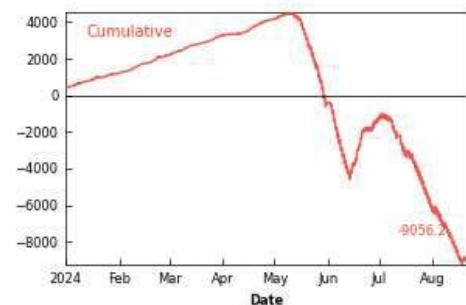
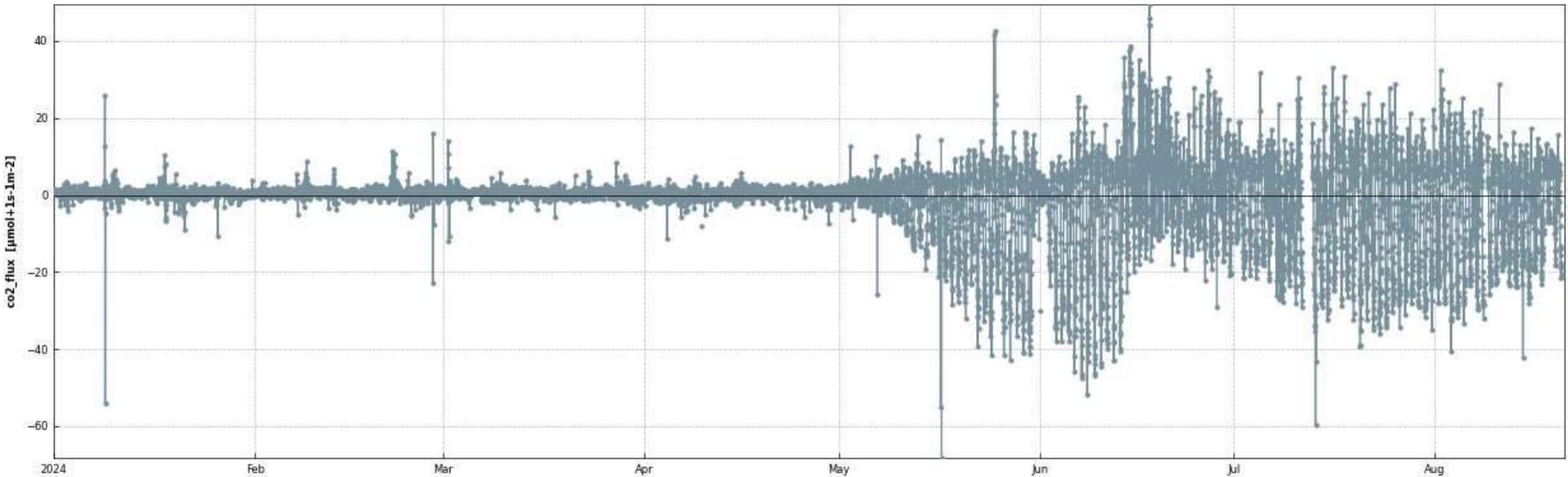
Last 90 days

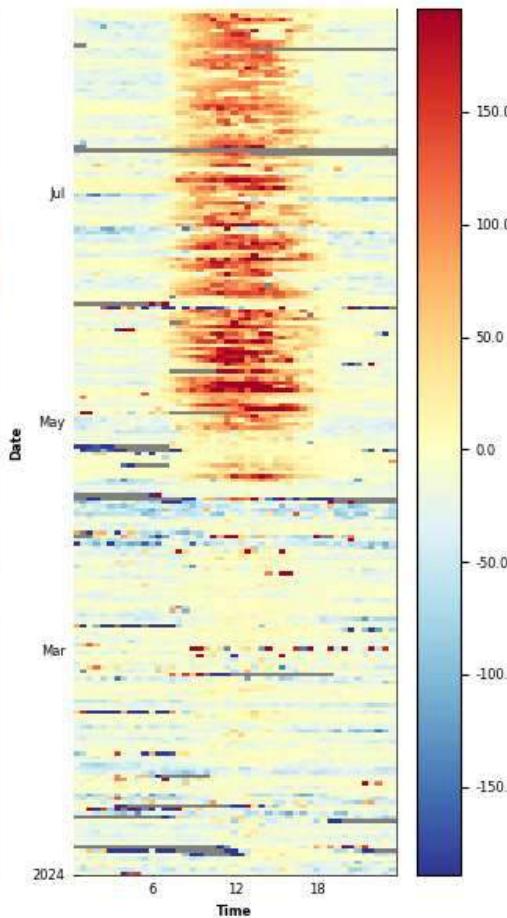
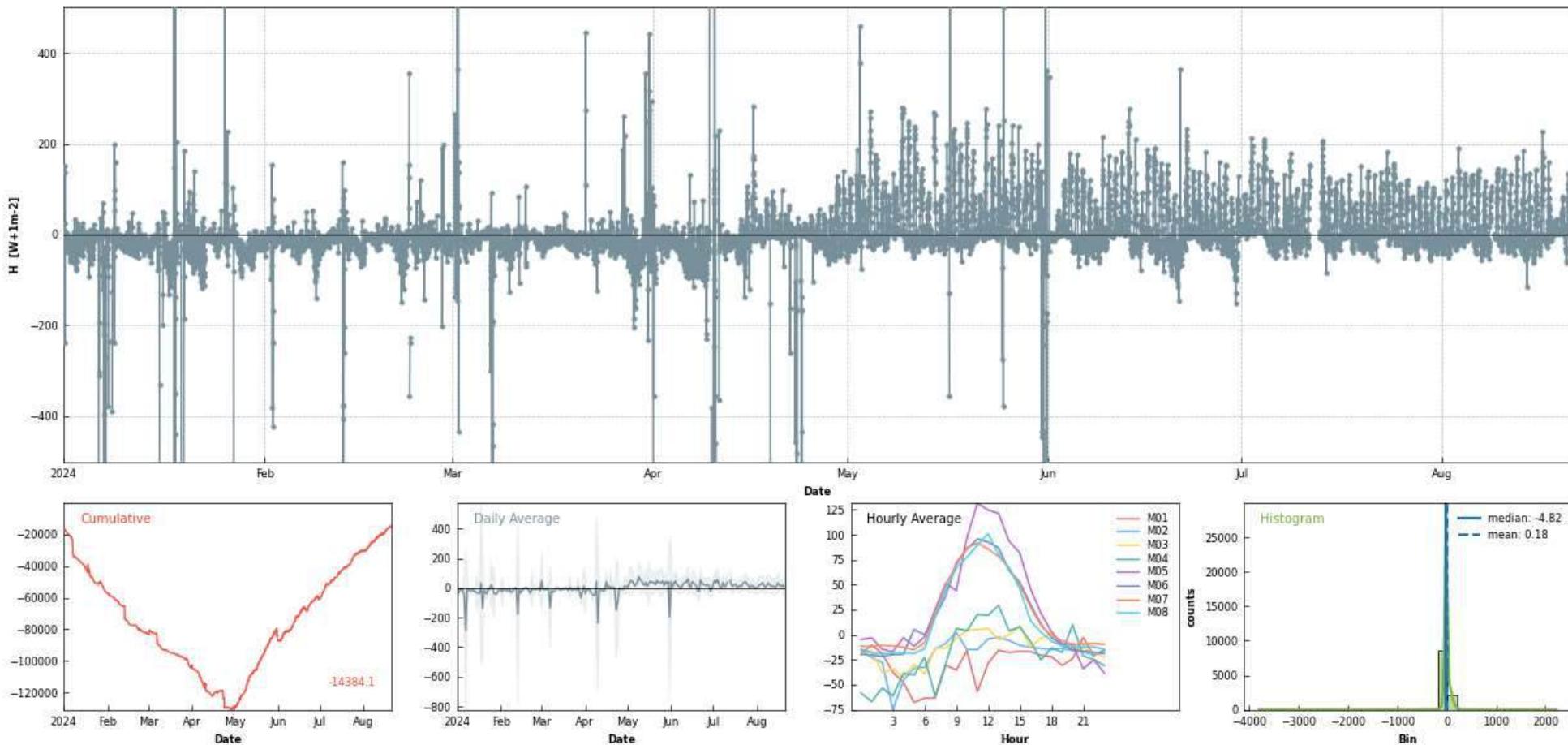
<https://dataviews.swissfluxnet.ethz.ch>





- Snow 30.5-2.6
- Grazing 13.-21.6
- Site visit 28.6
- 18.-20.8 low temperatures and lots of fog -> low fluxes
- AGC at 86.7%, IRGA should be cleaned soonish but not super urgent





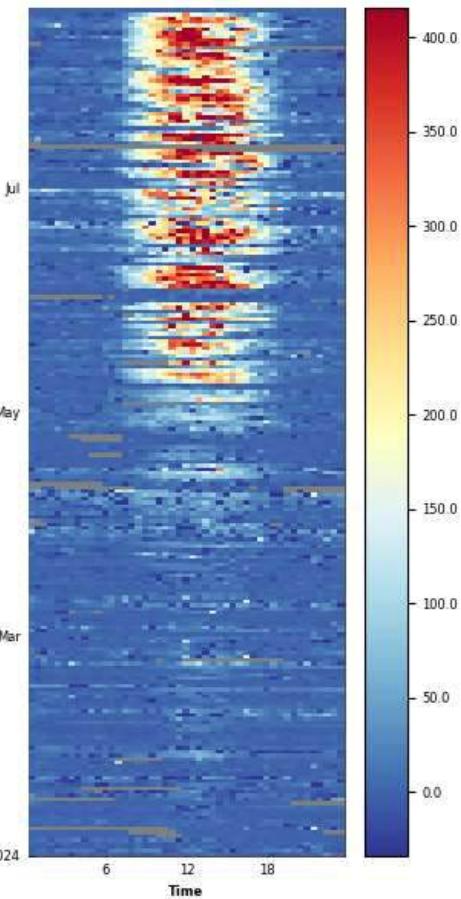
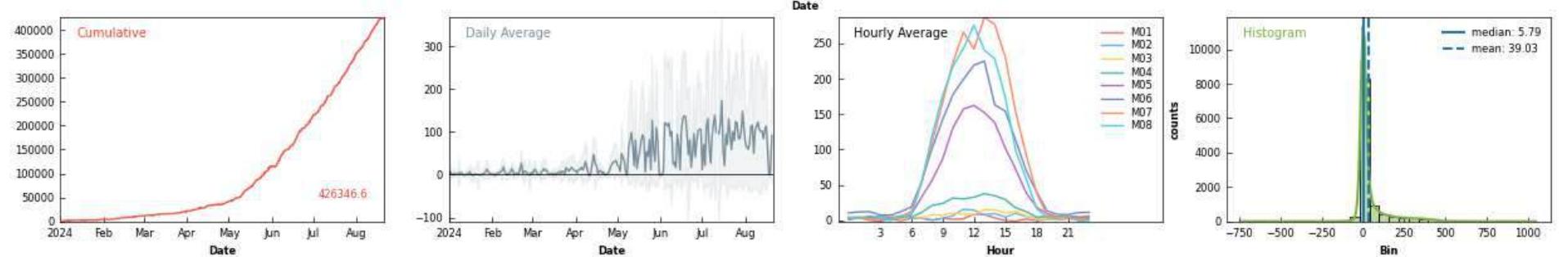
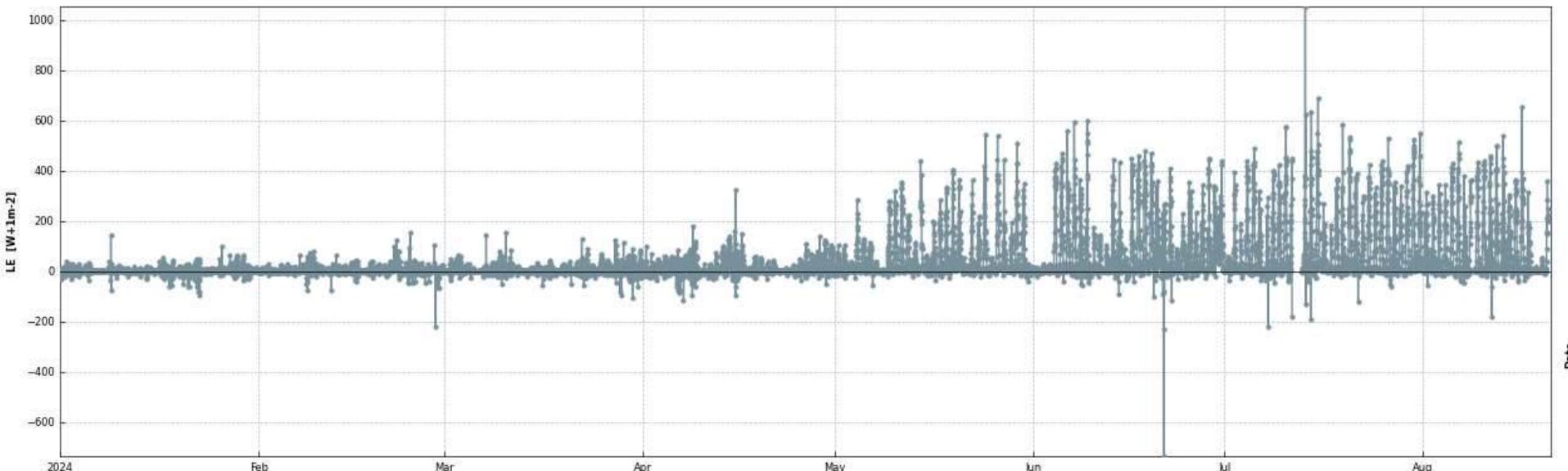
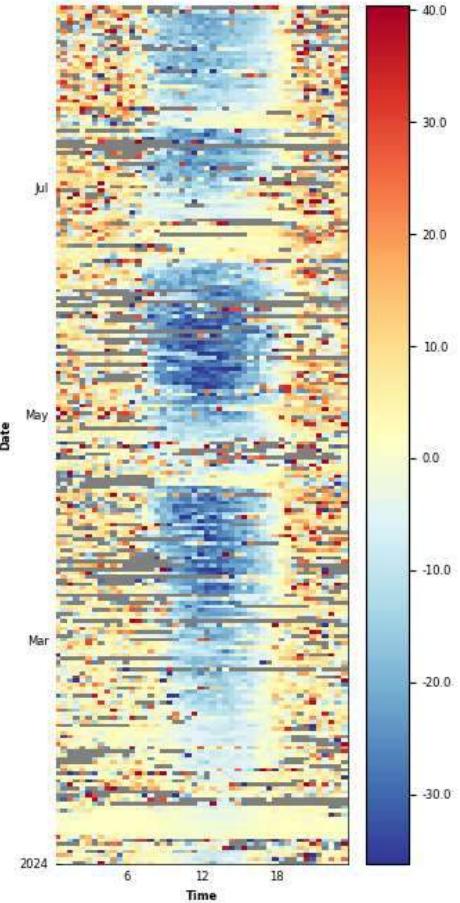
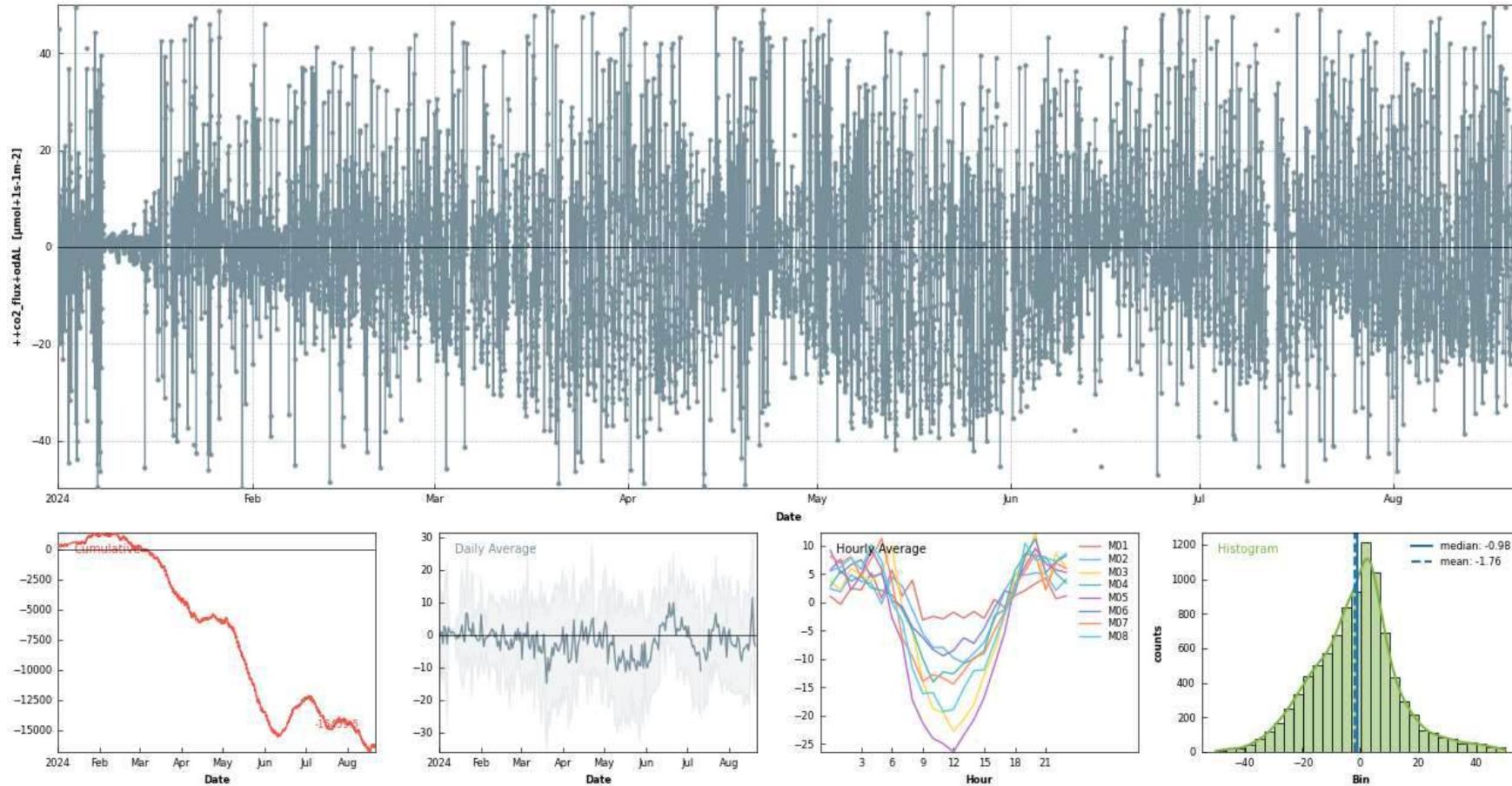


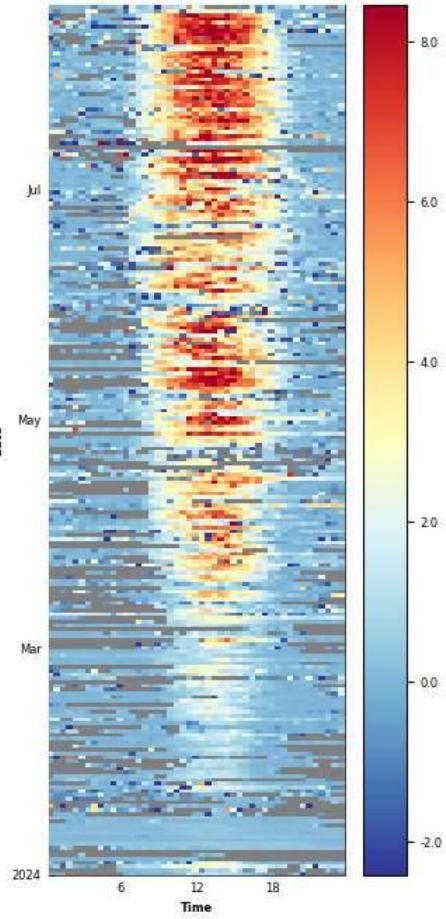
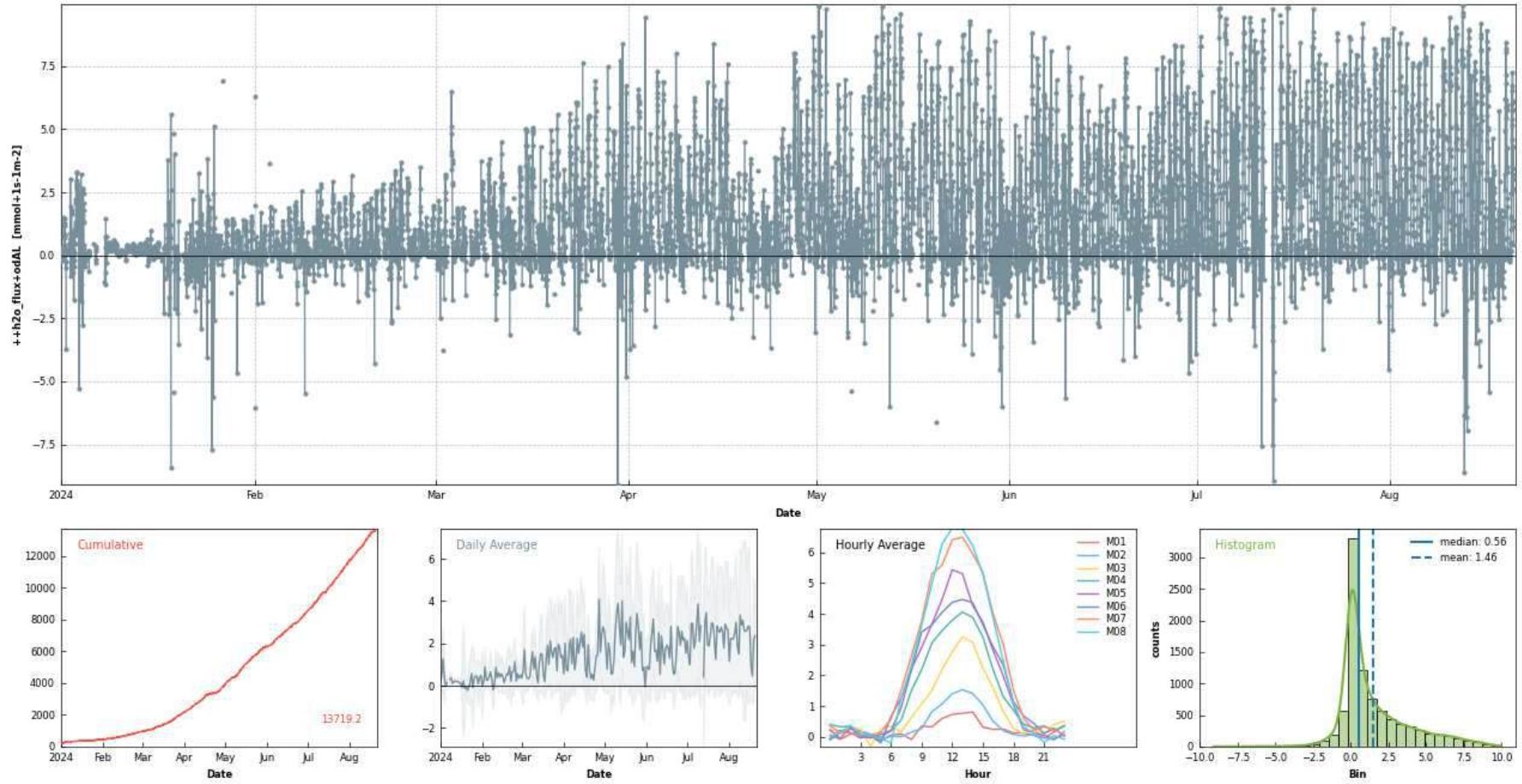


Photo: Lukas Hörtnagl



- 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 (to be done)





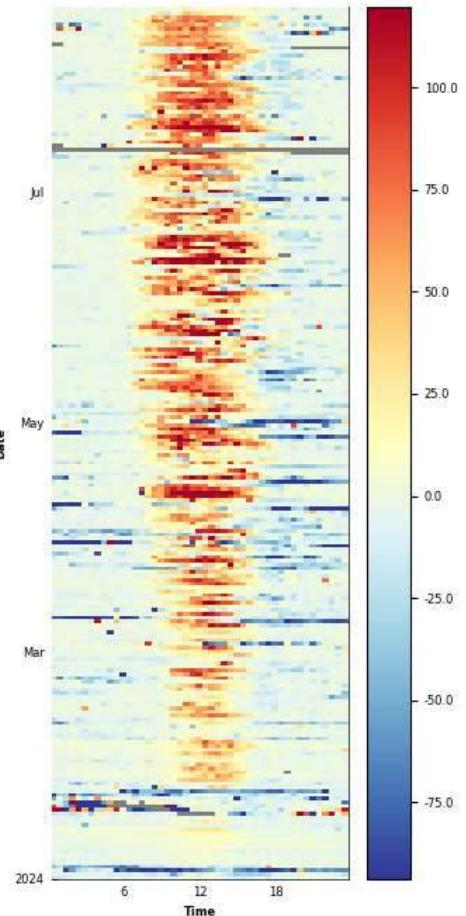
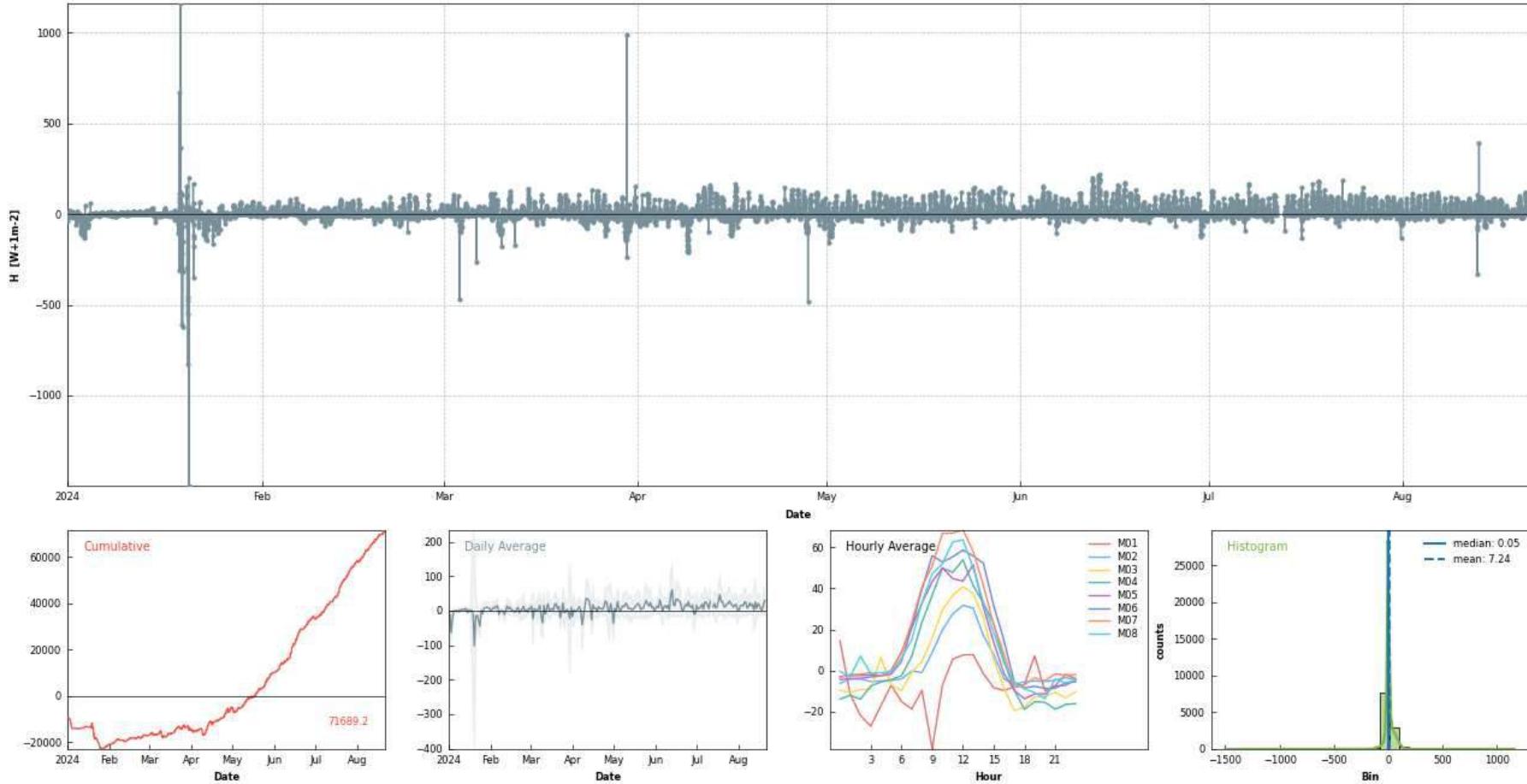
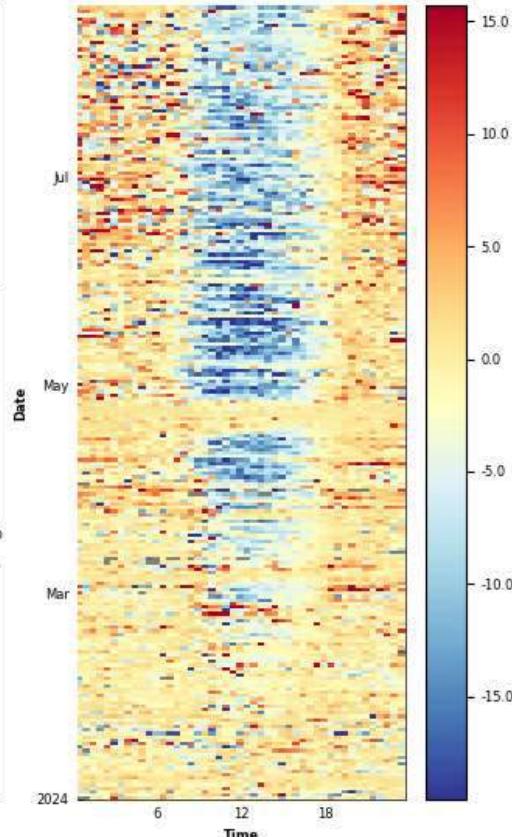
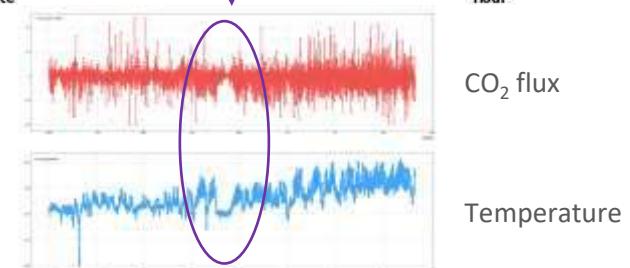
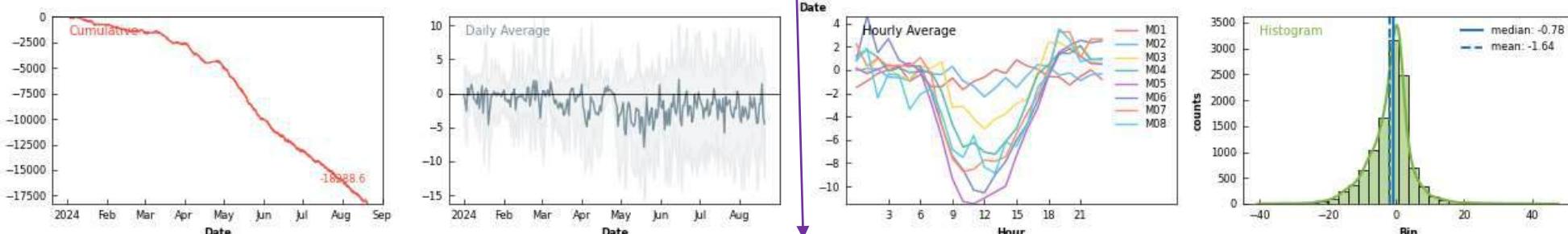
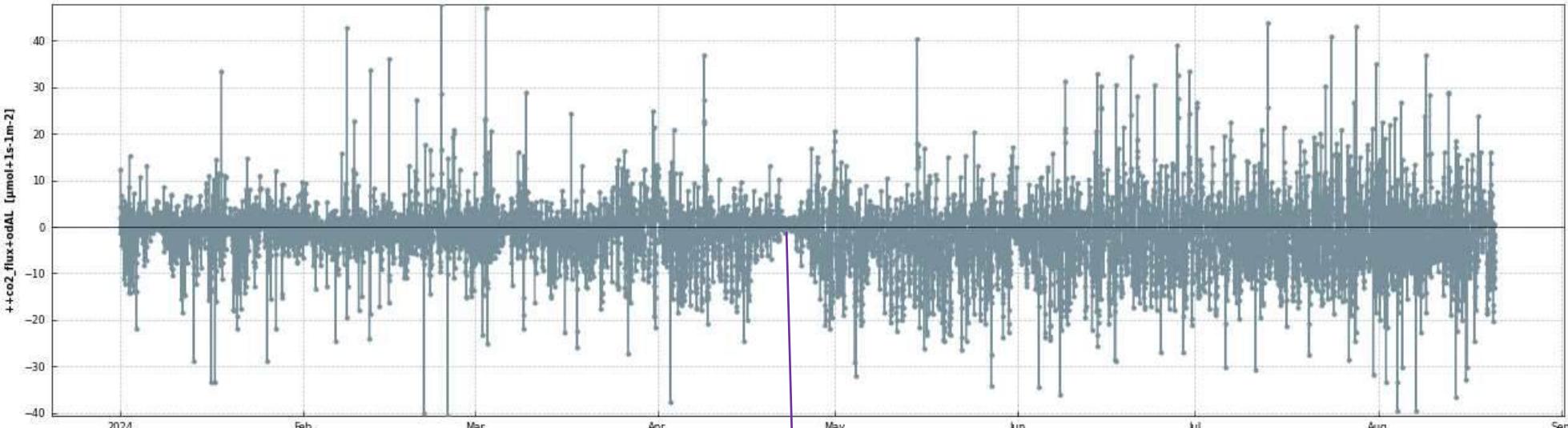
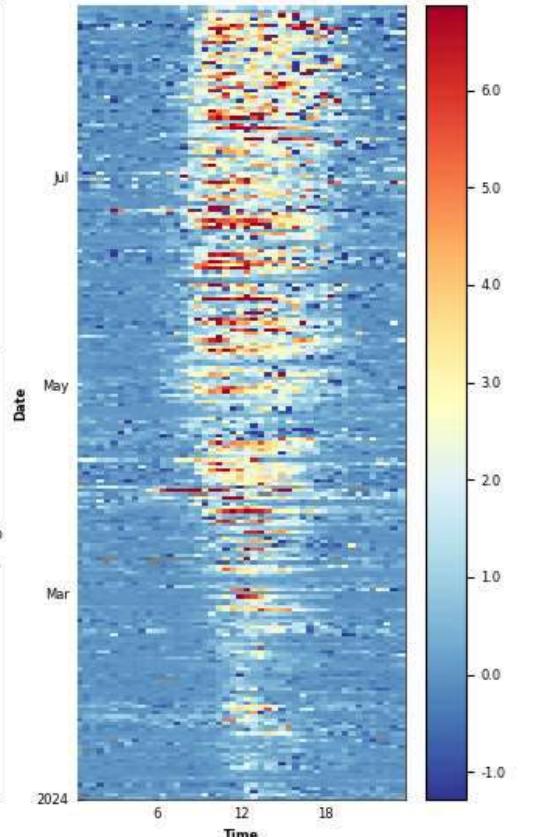
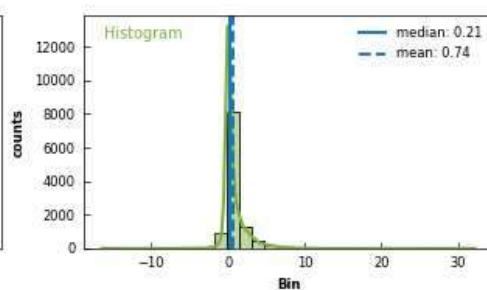
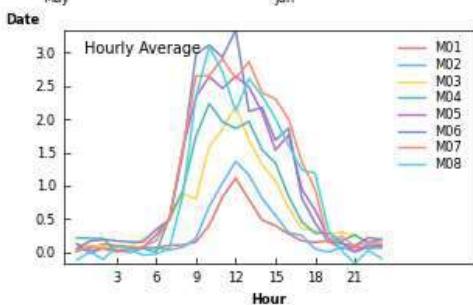
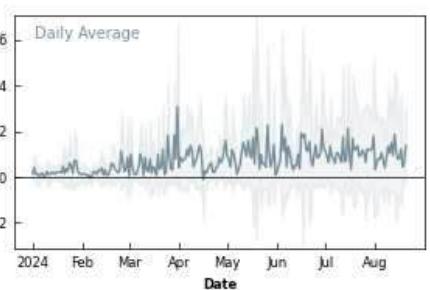
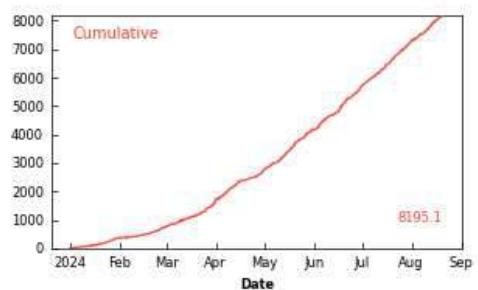
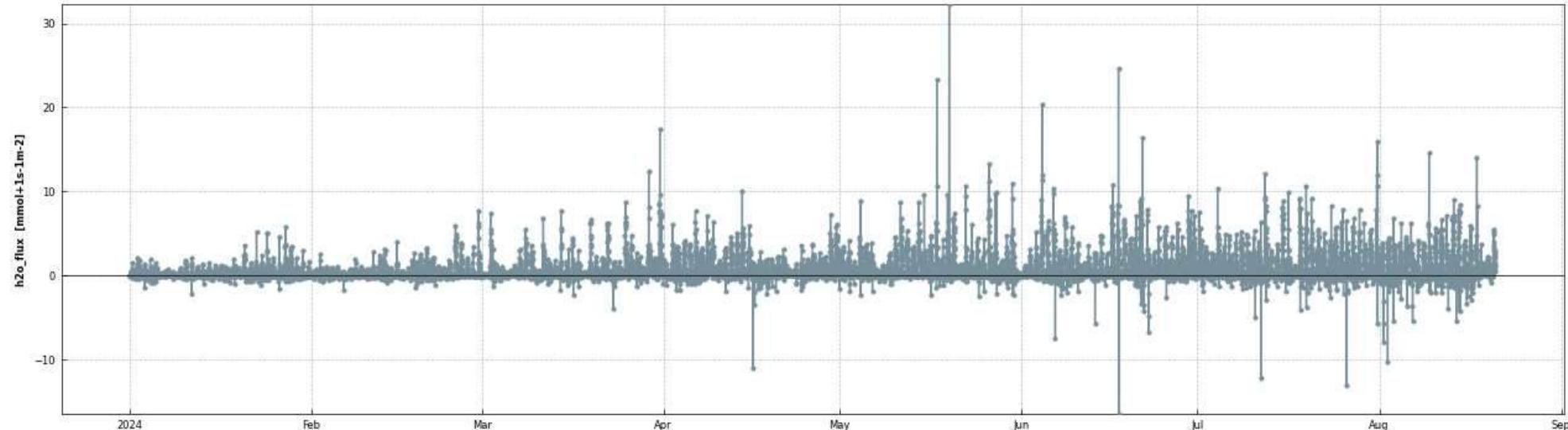


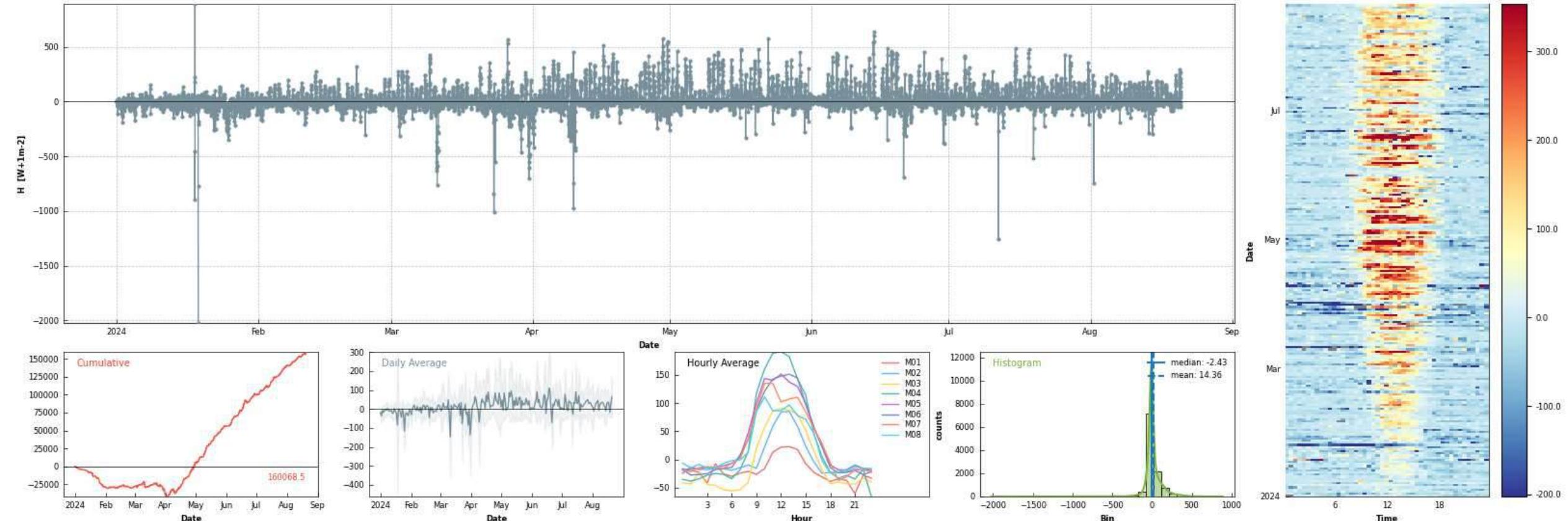


Photo: Lukas Hörtnagl

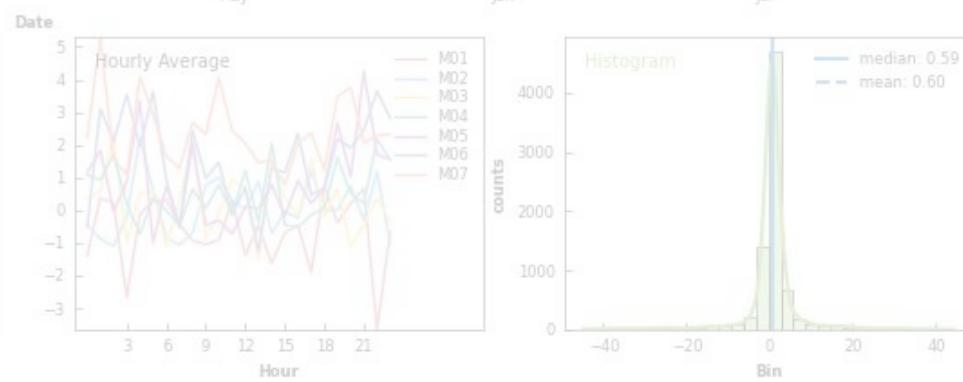
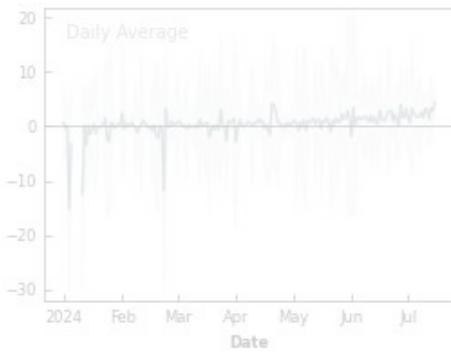
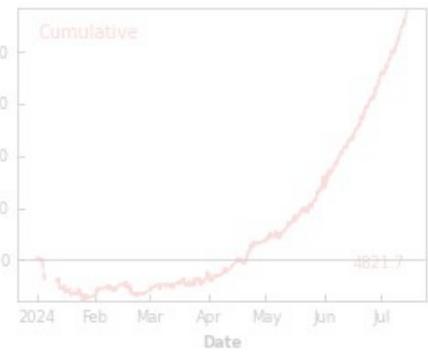
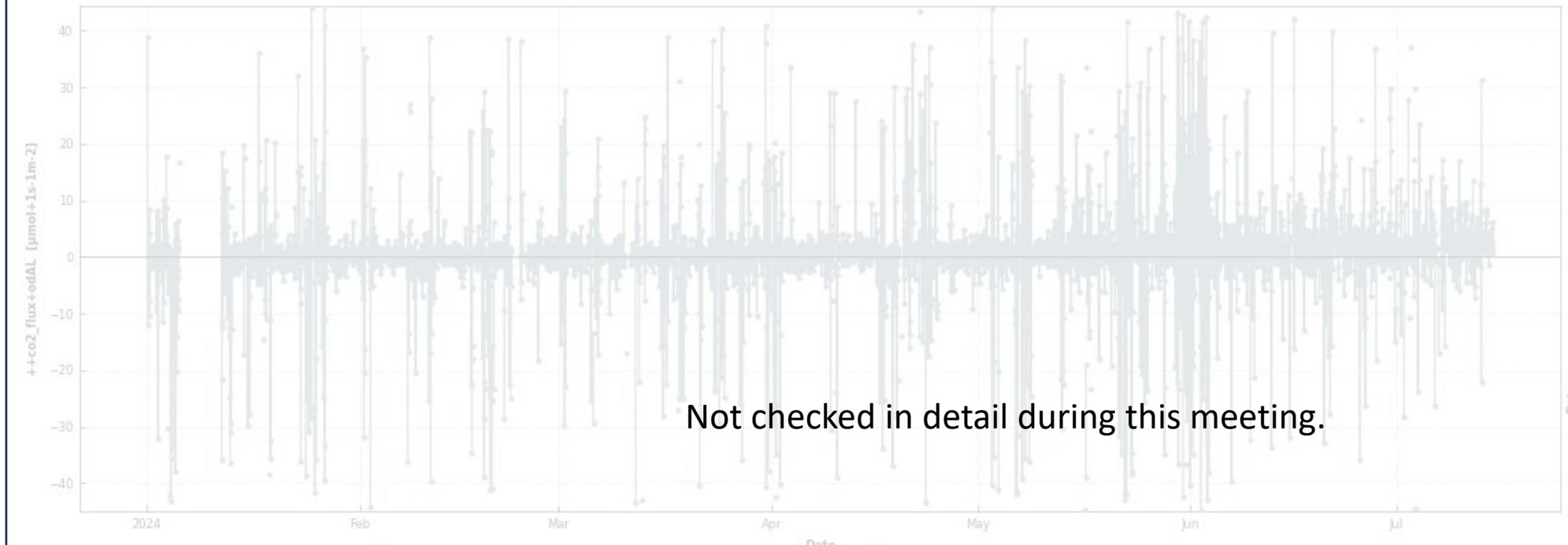
- Cold period mid-April caused an interruption in CO₂ uptake
- Highest uptake in May
- No major gaps











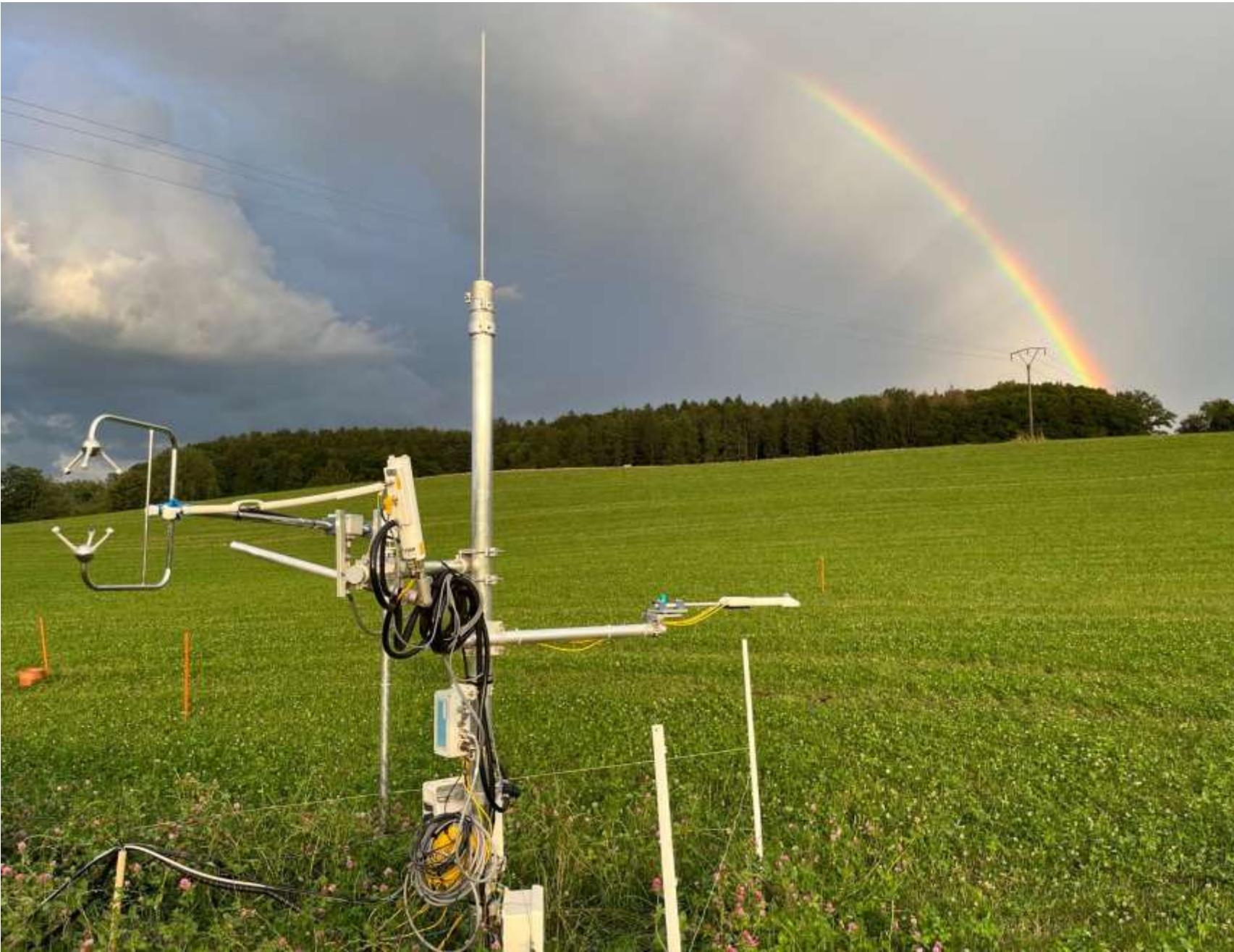
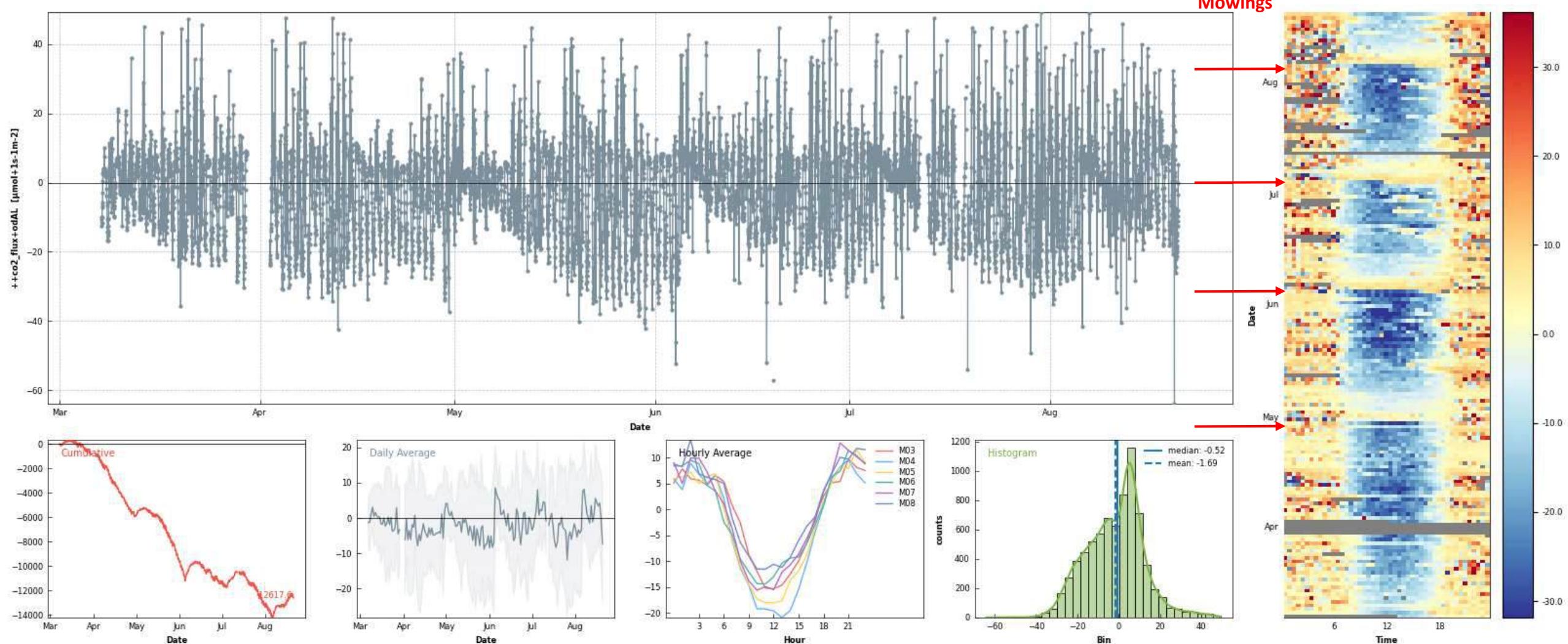


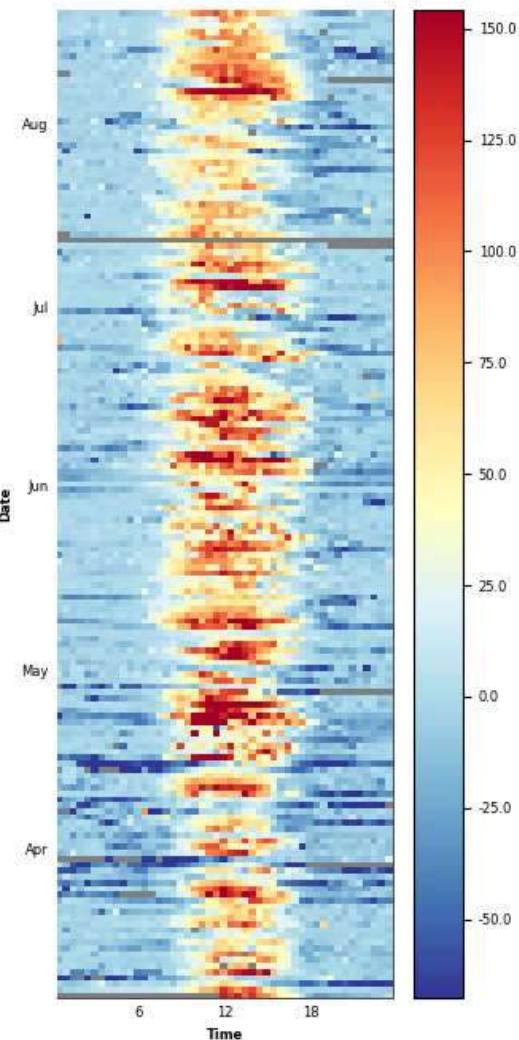
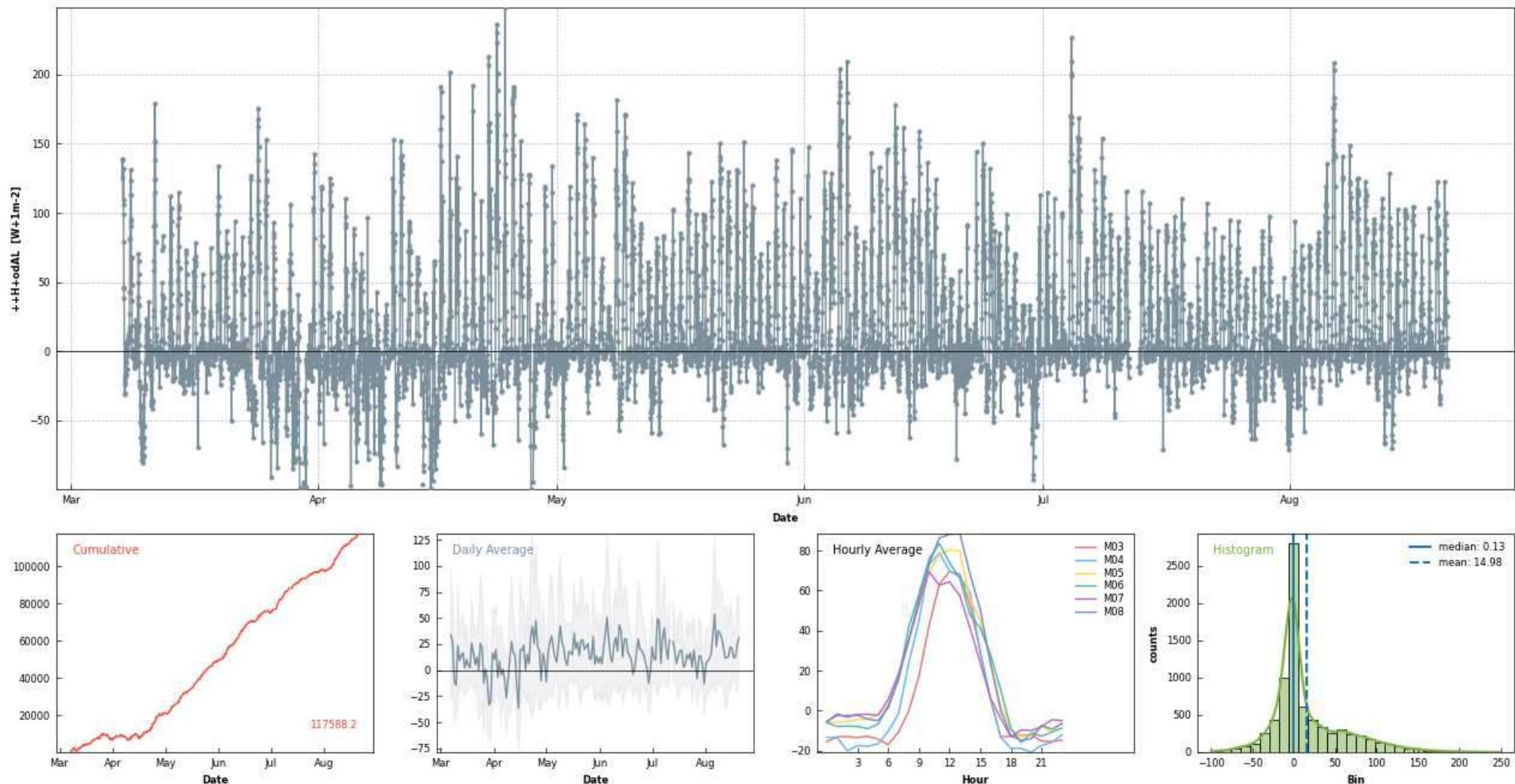
Photo: Lorenz Allemann

- 1st mowing: 29.04
- 2nd mowing: 4.6
- 3rd mowing: 4.7
- 4th mowing: 5.8
- Fertilization: 8.3, 13.5 and 15.8



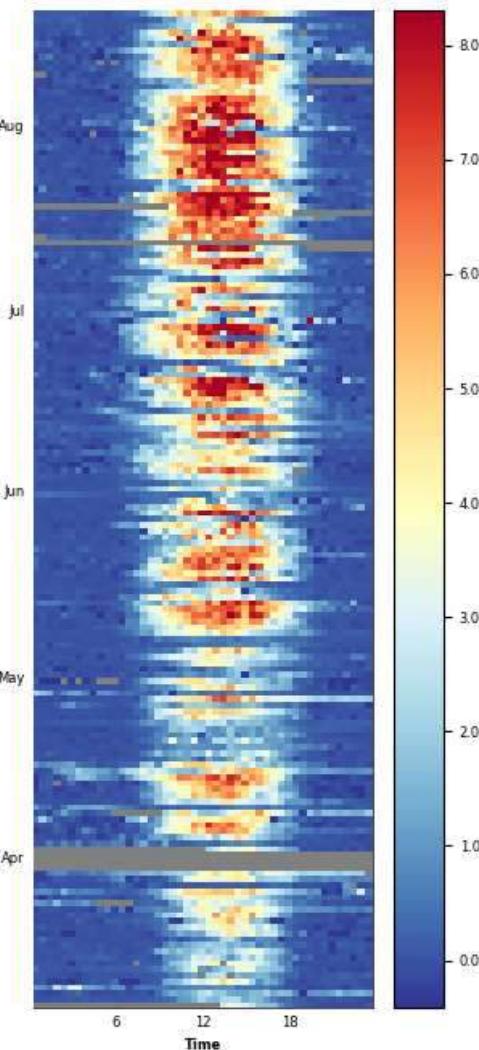
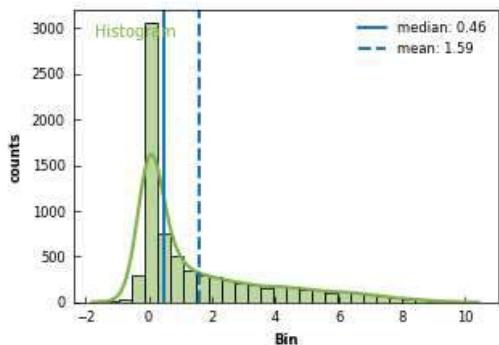
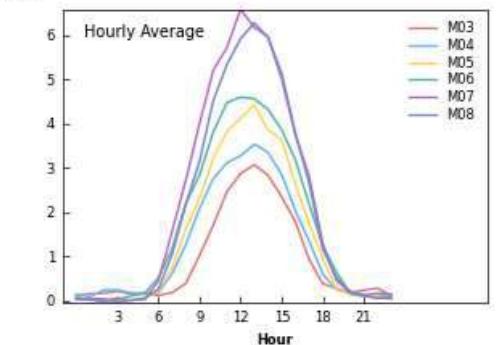
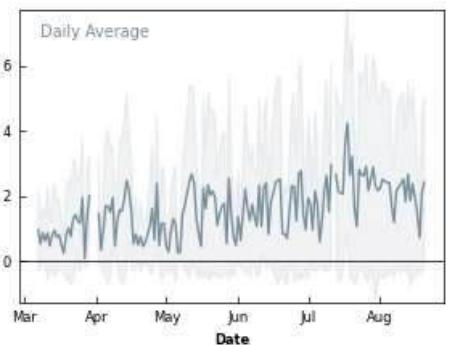
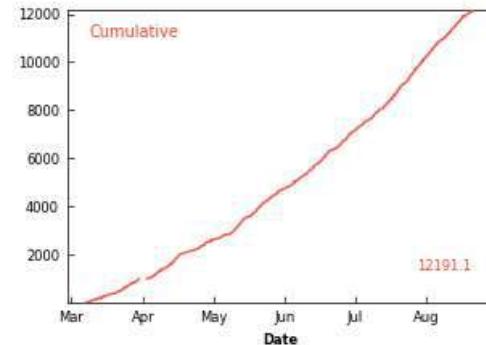
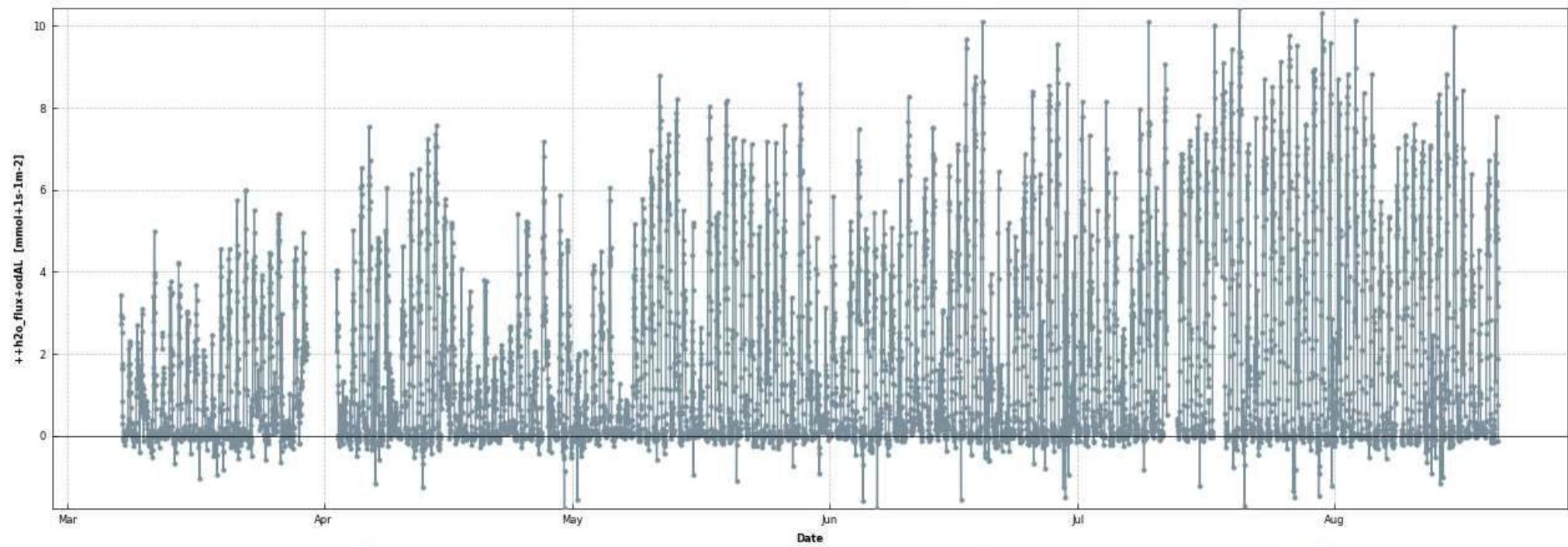
Everything looks fine.

- 1st mowing: 29.04
- 2nd mowing: 4.6
- 3rd mowing: 4.7
- 4th mowing: 5.8
- Fertilization: 8.3, 13.5 and 15.8



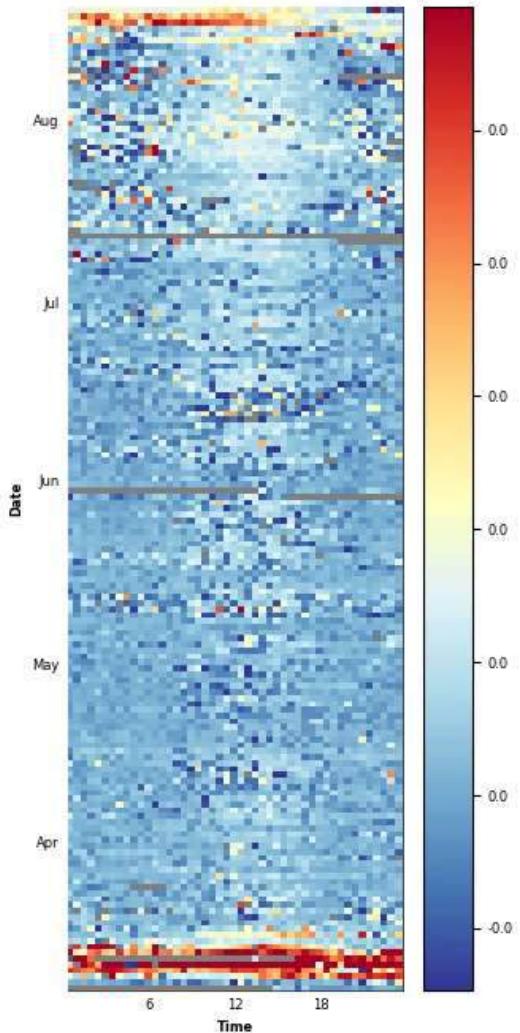
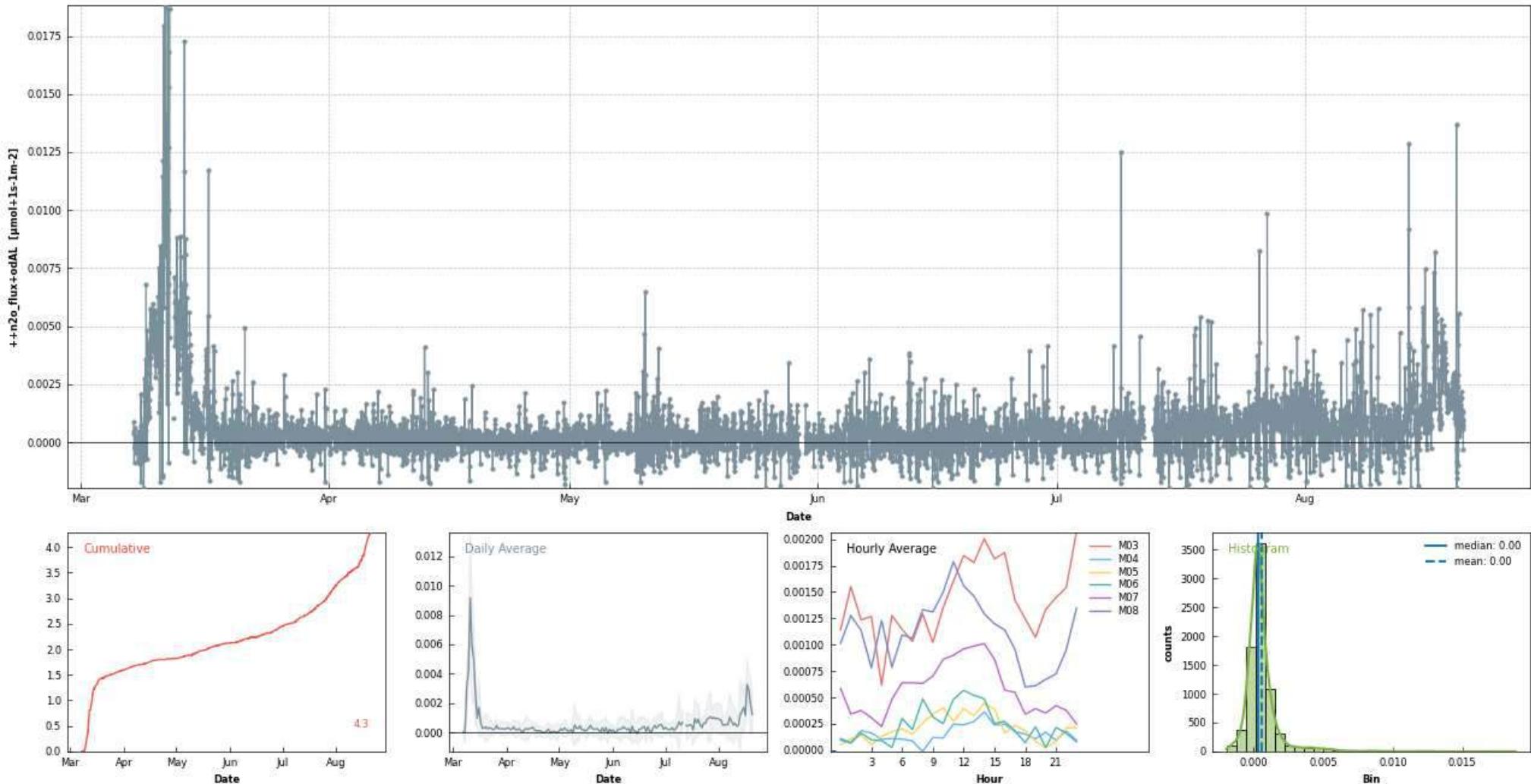
Everything looks fine.

- 1st mowing: 29.04
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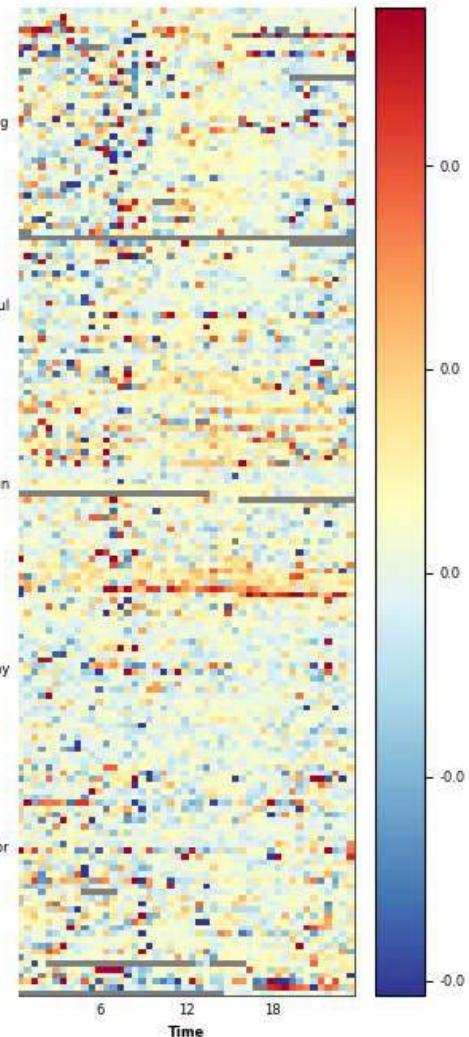
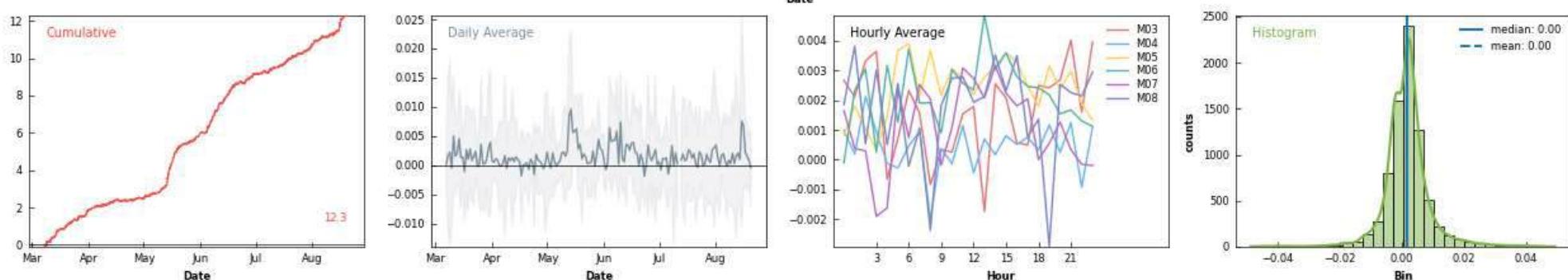
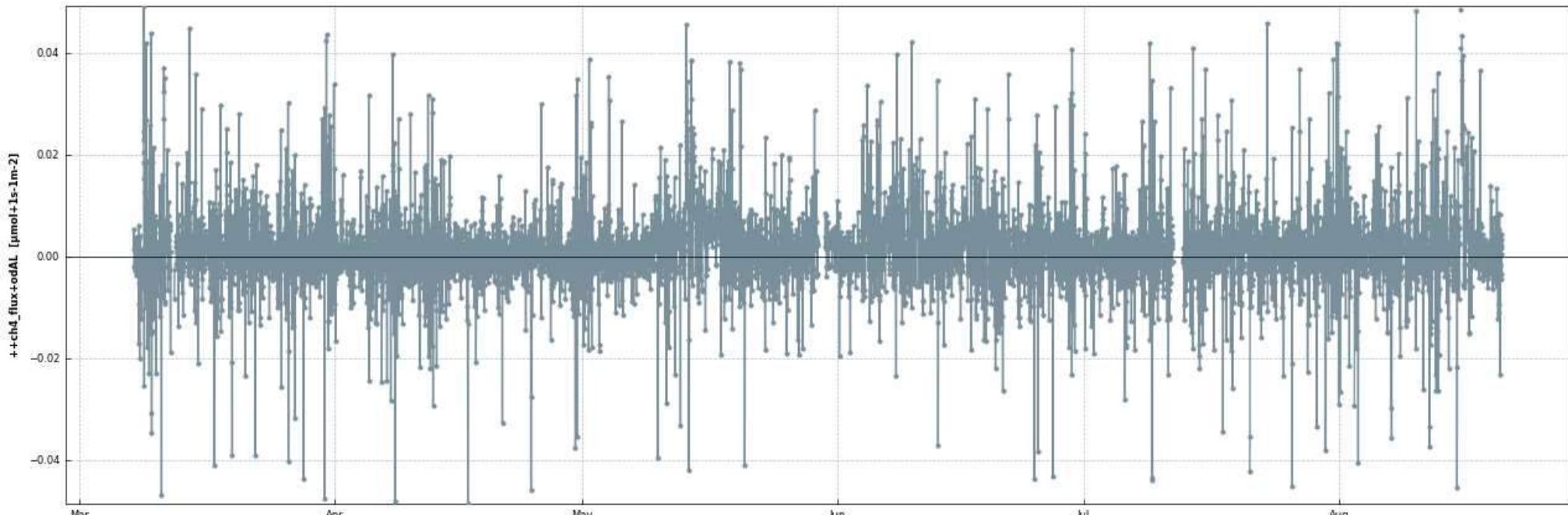
Everything looks fine.

- 1st mowing: 29.04
- 2nd mowing: 4.6
- 3rd mowing: 4.7
- 4th mowing: 5.8
- Fertilization: 8.3, 13.5 and 15.8



New peak after 3rd fertilization 15.8. Combination of fertilization and rewetting.

- 1st mowing: 29.04
- 2nd mowing: 4.6
- 3rd mowing: 4.7
- 4th mowing: 5.8
- Fertilization: 8.3, 13.5 and 15.8



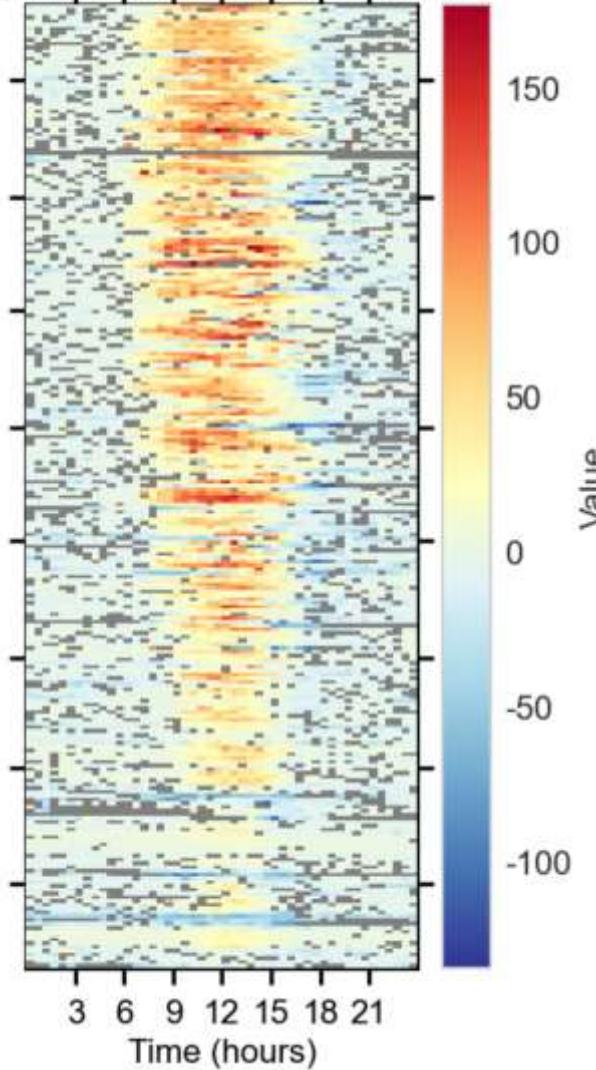
Everything looks fine. Small peak after fertilization at 15.8



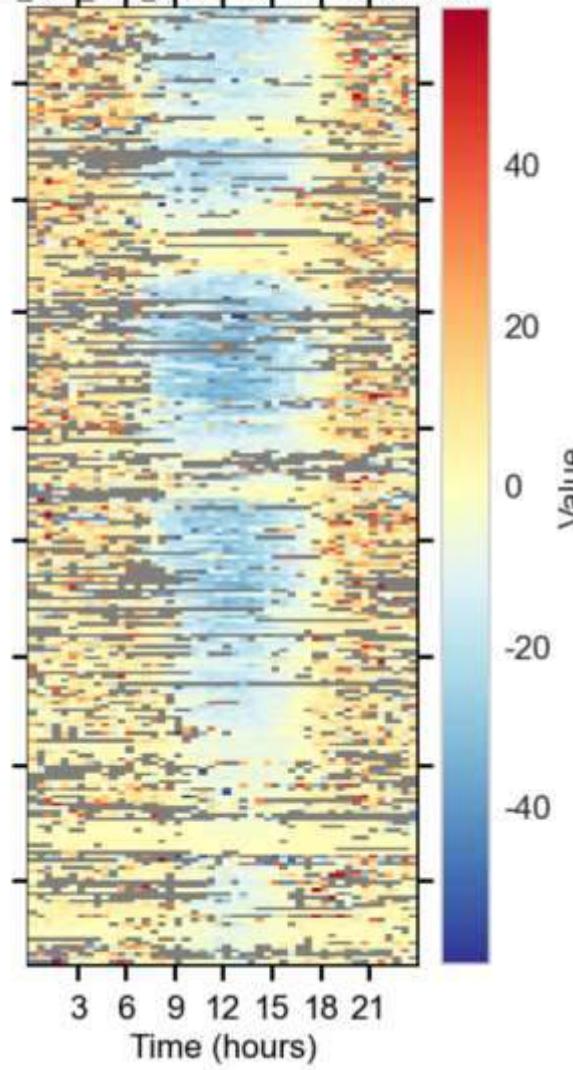
Photo: Lukas Hörnagl

H

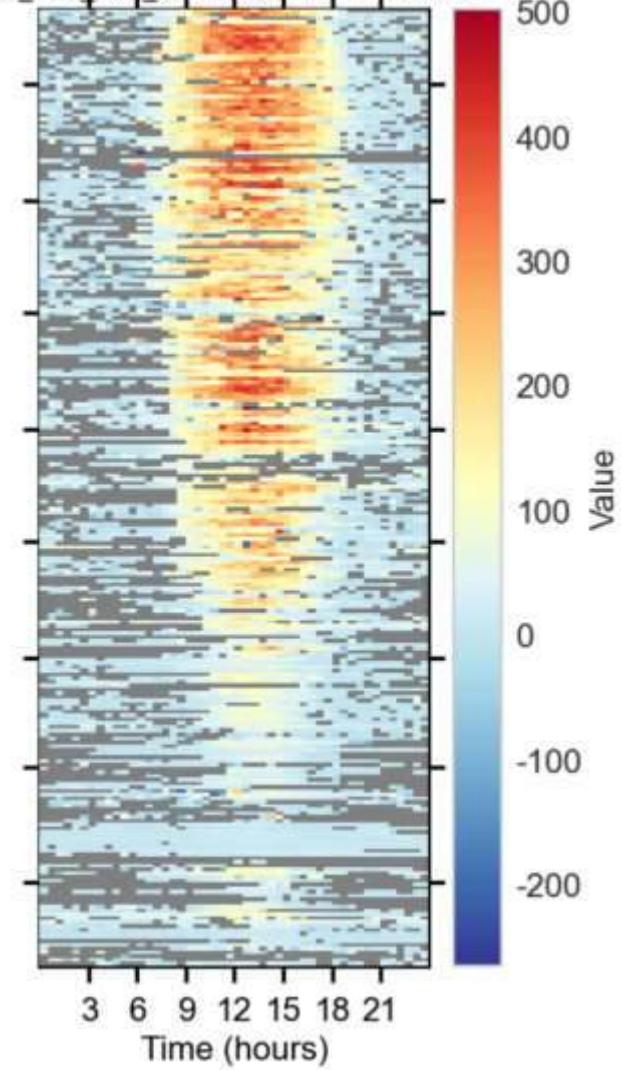
H_L3.1_L3.2_QCF in 30min time resolution

**CO2 flux**

NEE_L3.1_L3.2_QCF in 30min time resolution

**LE**

LE_L3.1_L3.2_QCF in 30min time resolution



This year so far

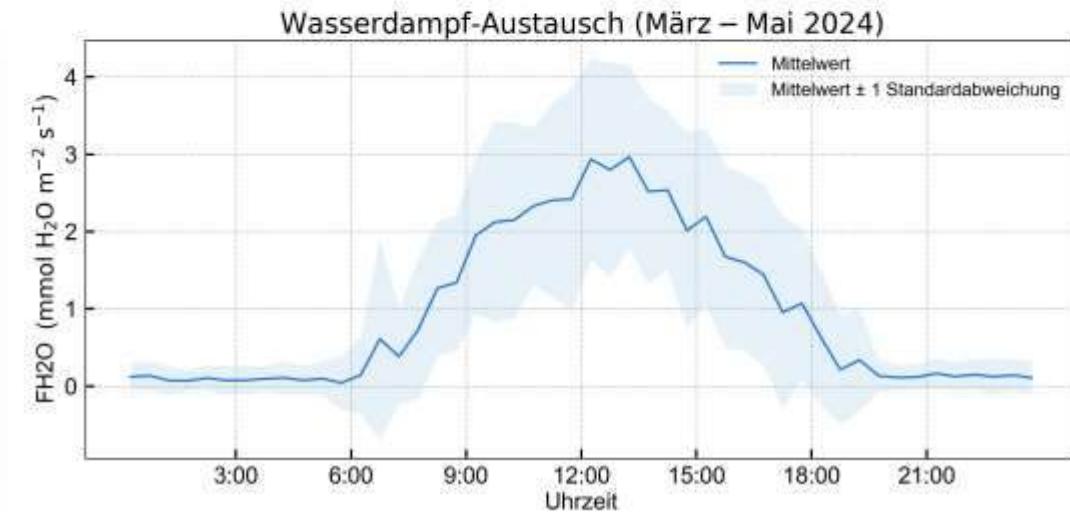
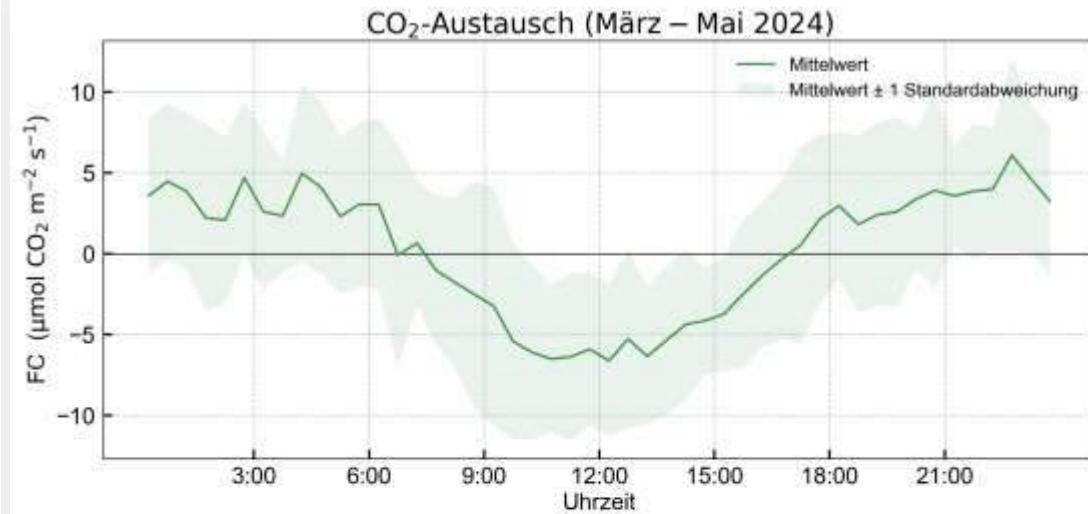
- With preliminary QCF using the diive notebook notebooks/FluxProcessingChain/QuickFluxProcessingChain.ipynb

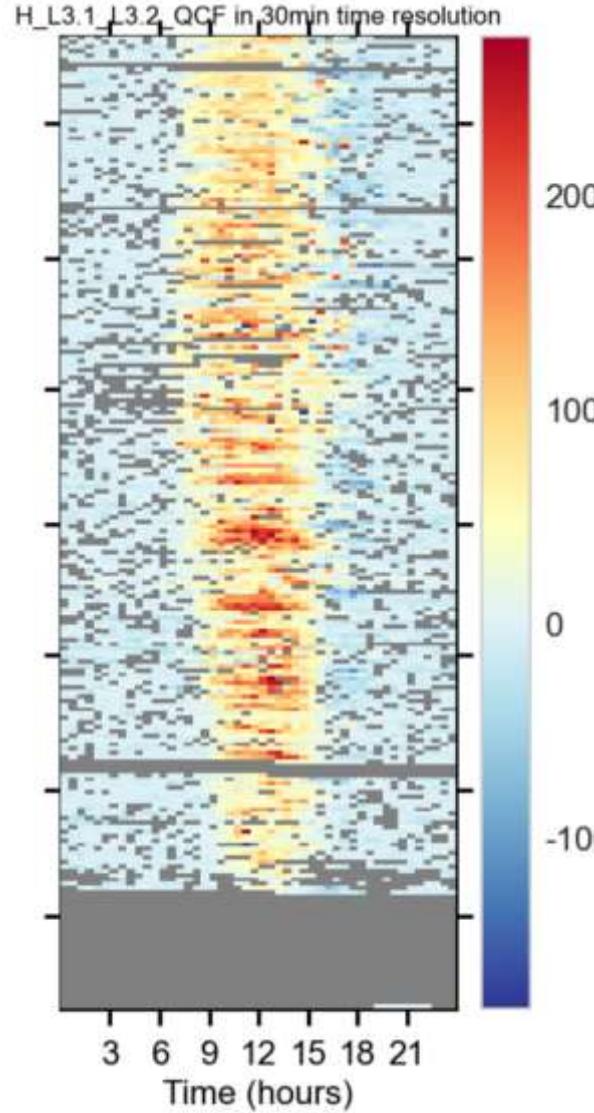
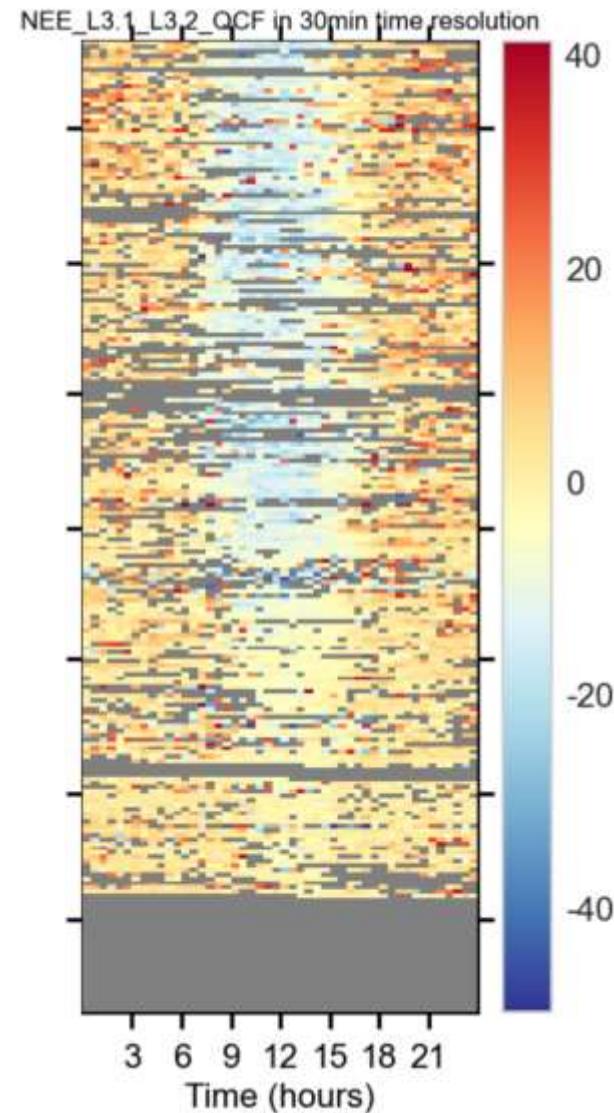
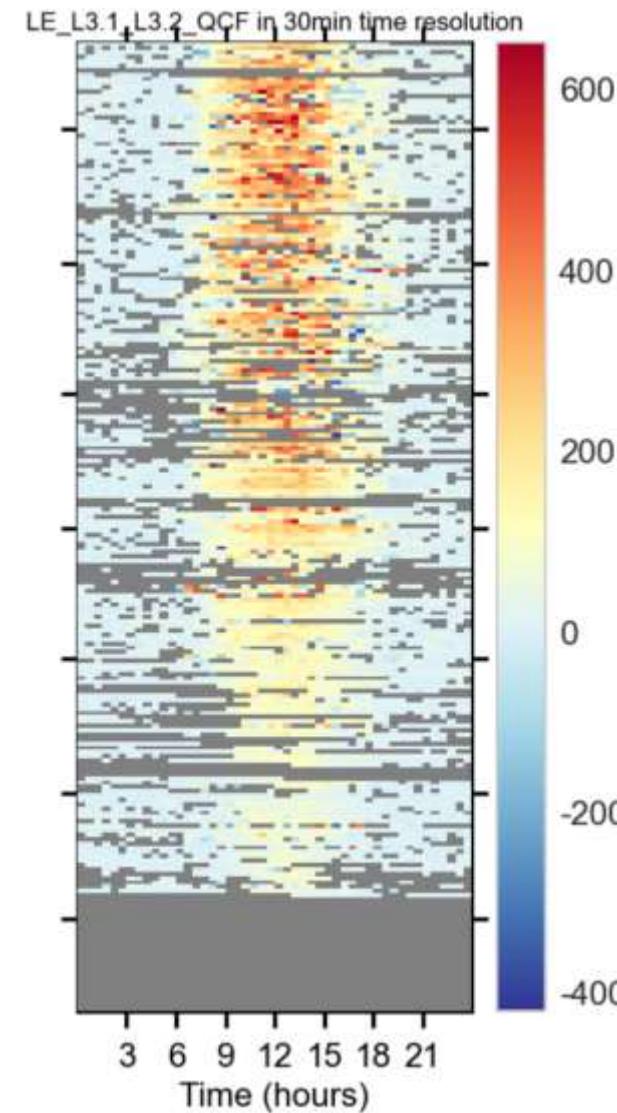


Photo: Lukas Hörtnagl

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](#).



H**CO2 flux****LE**

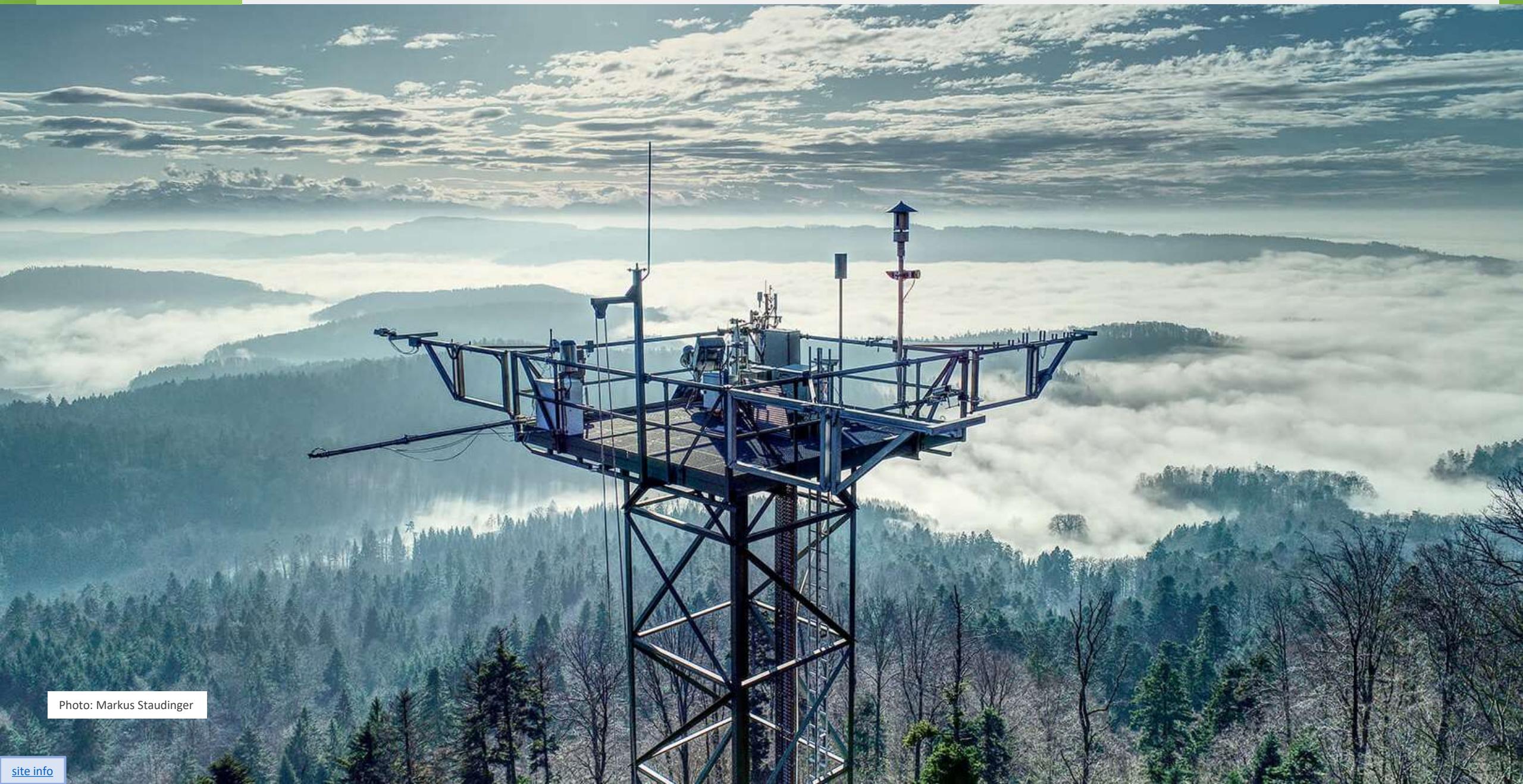
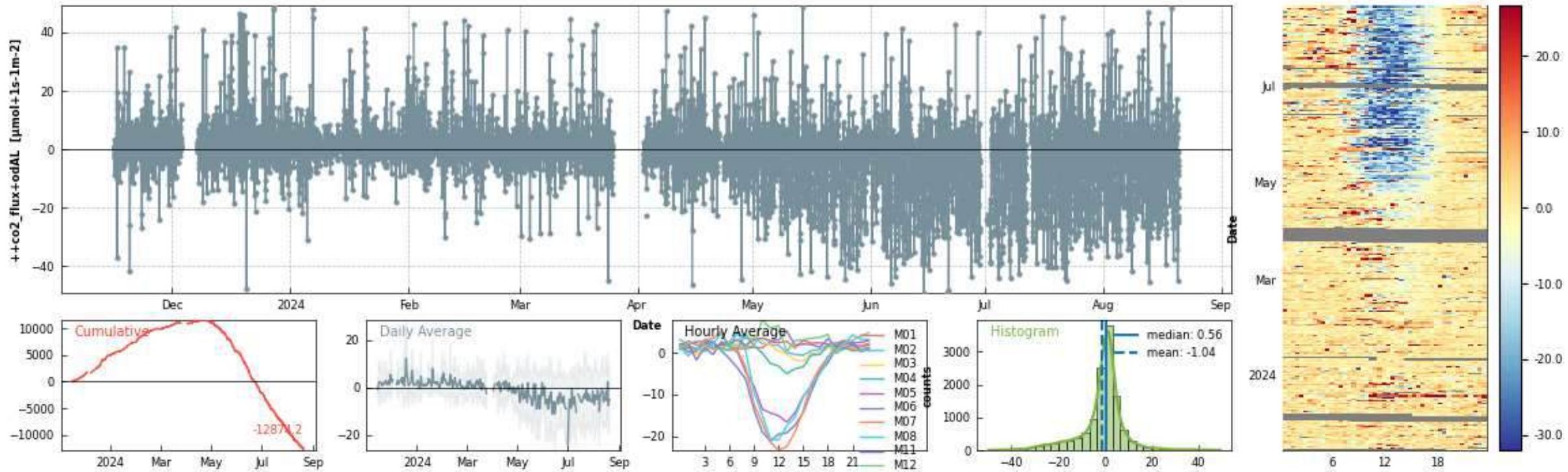
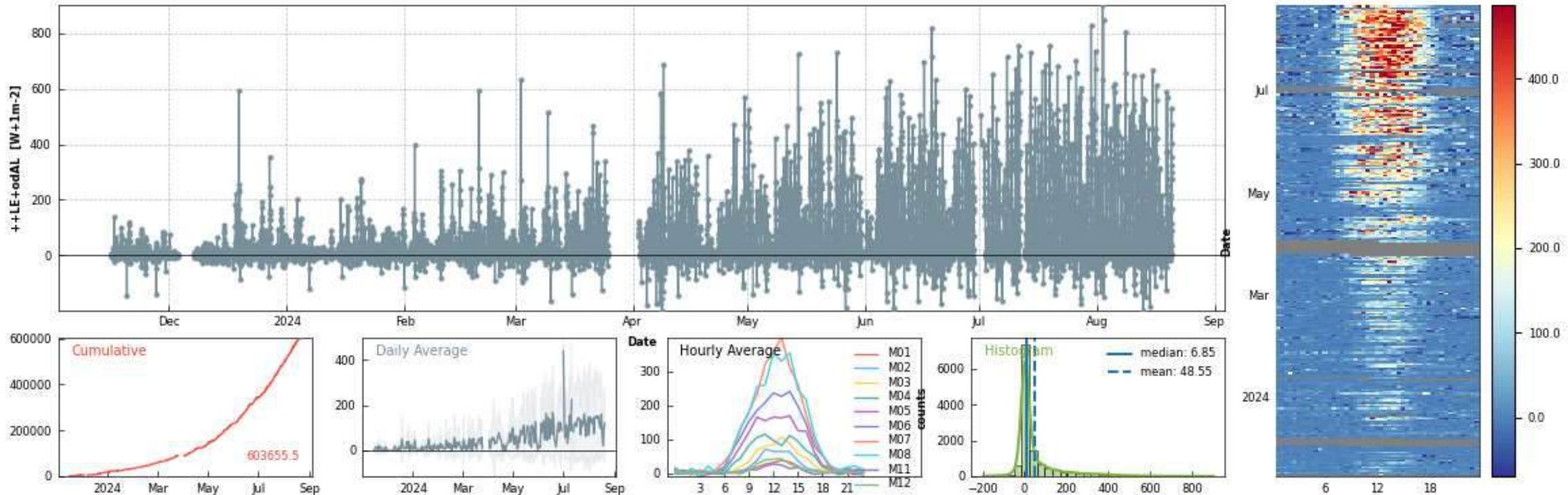


Photo: Markus Staudinger

Outlier removed CO2 flux. Lägeren is still doing awesome stuff (pretty decent CO2 uptake).



Outlier removed LE flux.



Outlier removed H flux. Transition from high H flux to low H flux with increase in LE flux (in previous slides from May onwards)

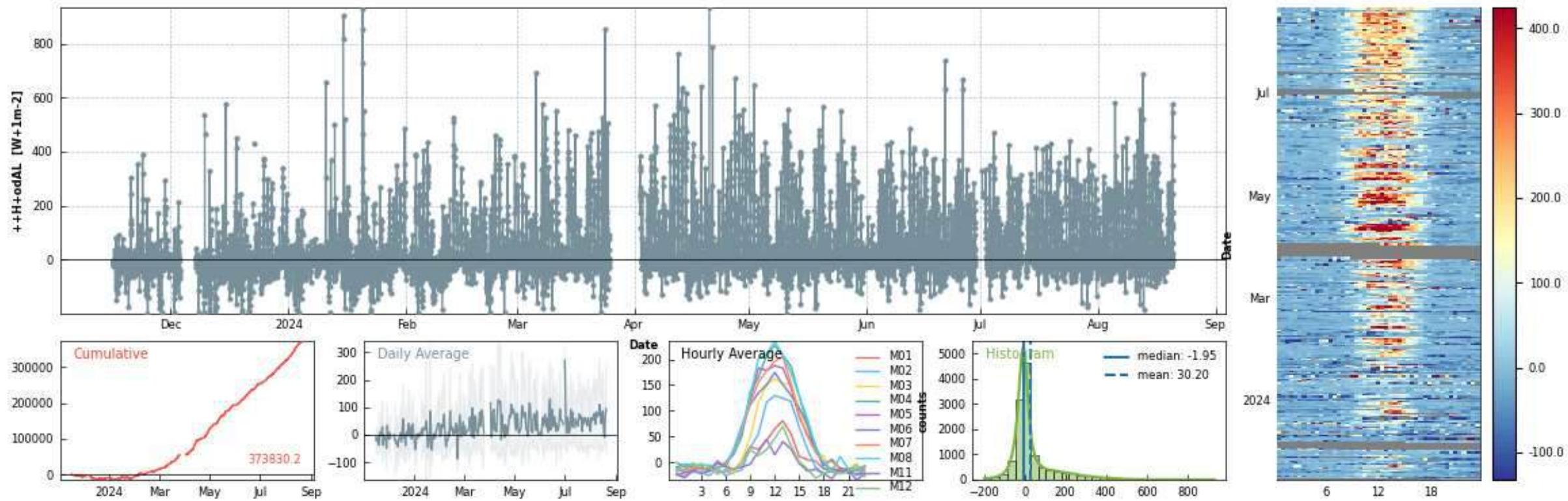
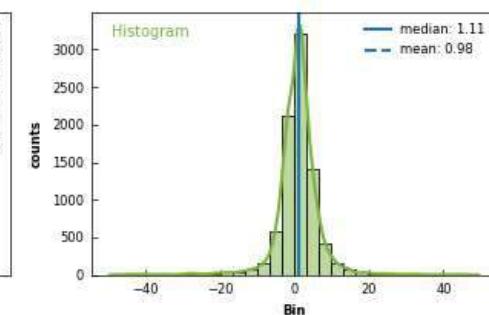
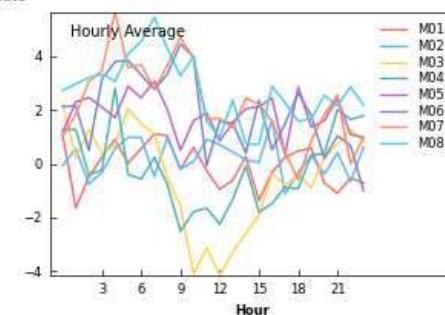
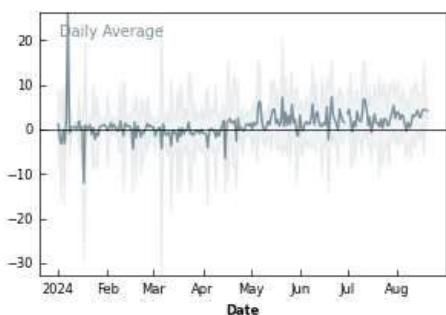
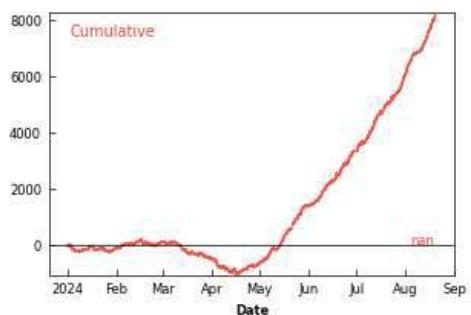
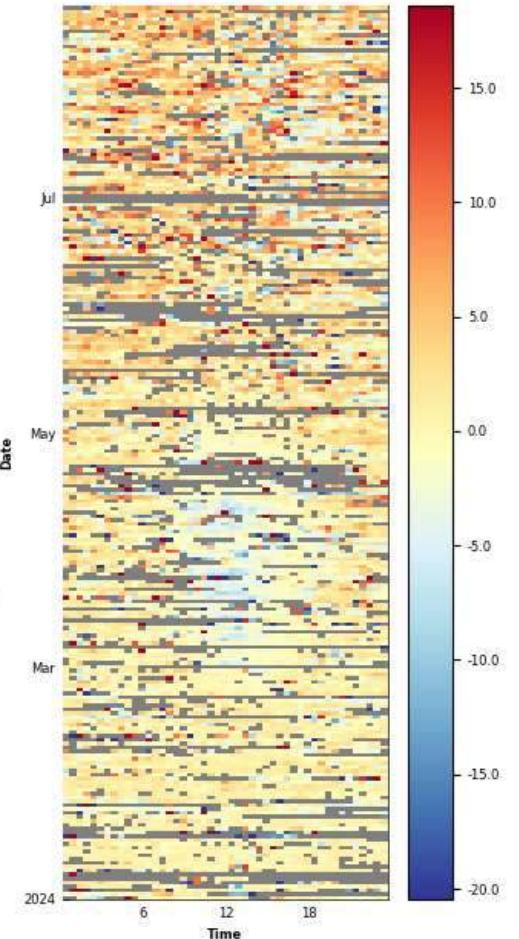
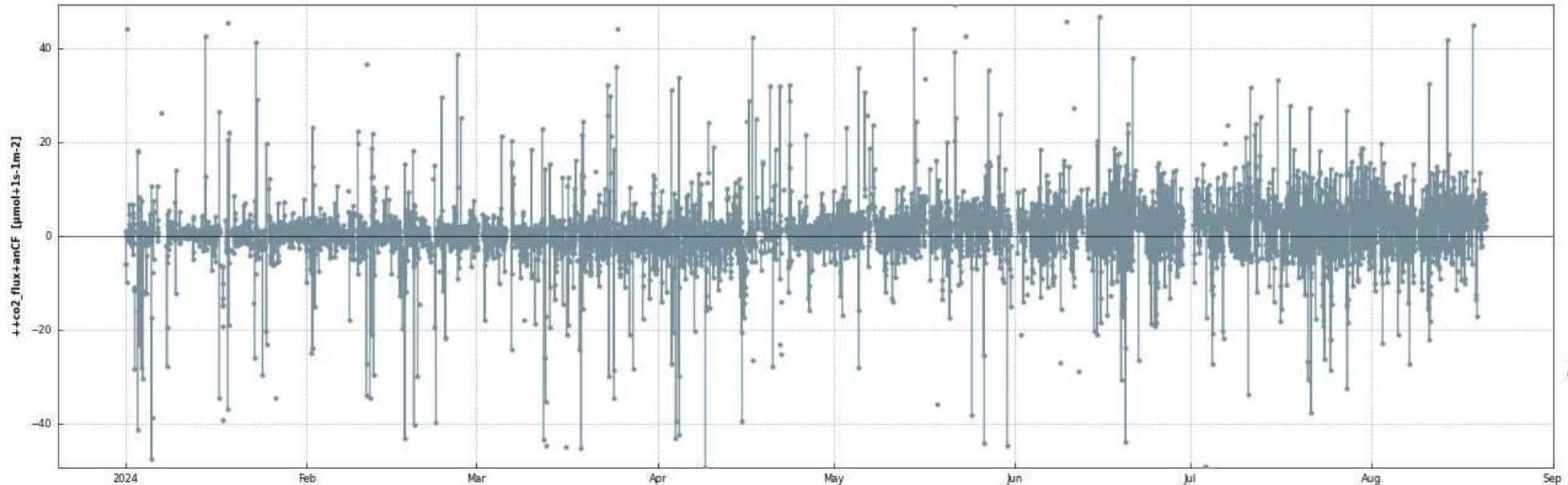


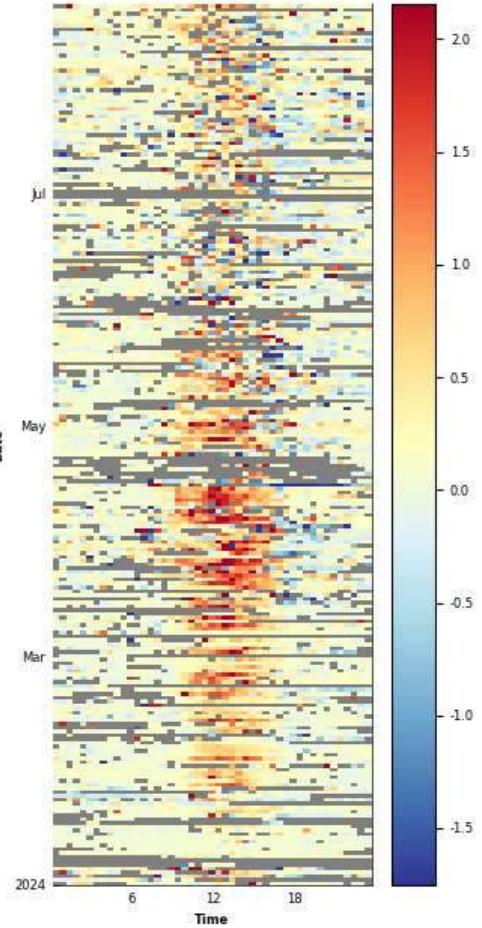
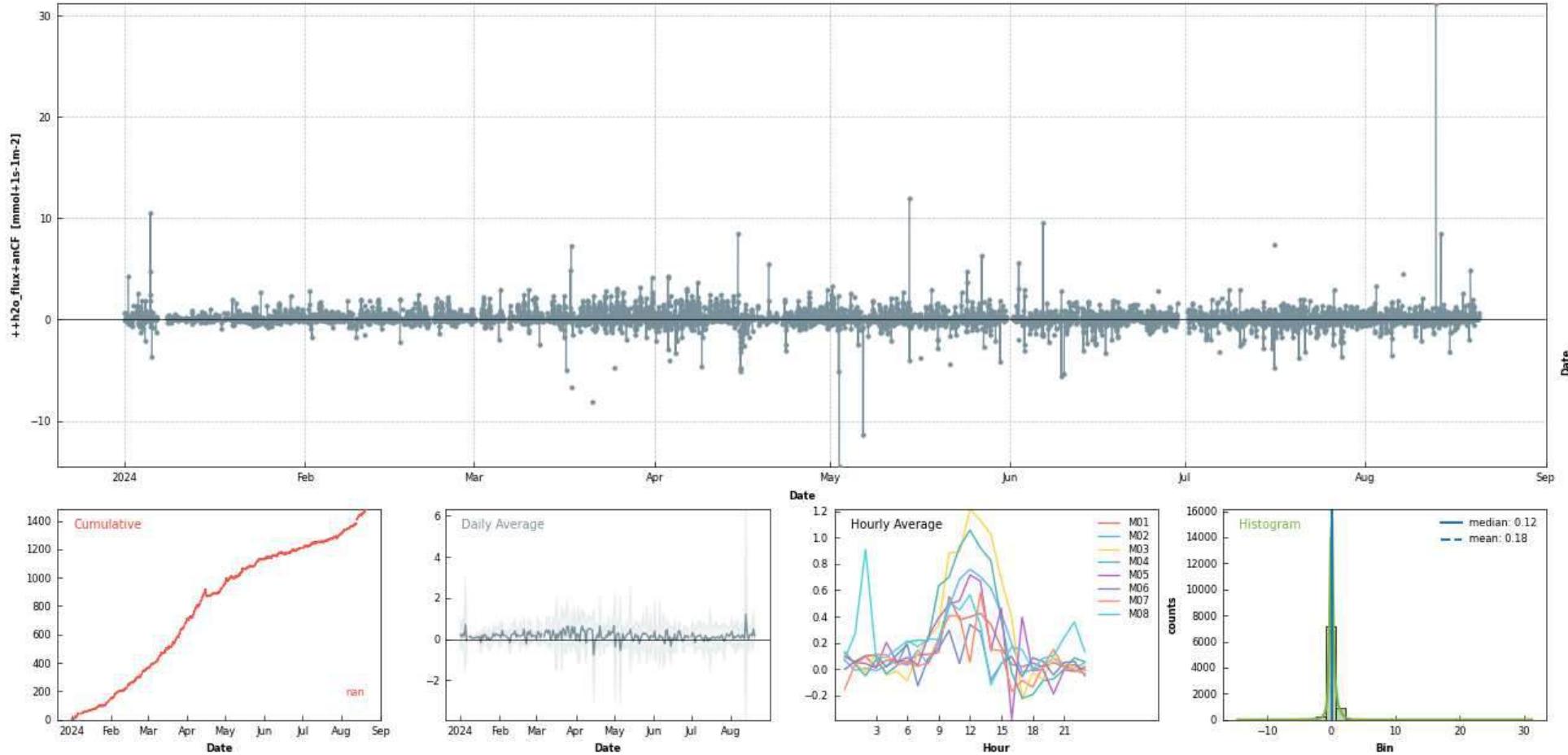


Photo: Liliana Scapucci

Quality checked



Quality checked



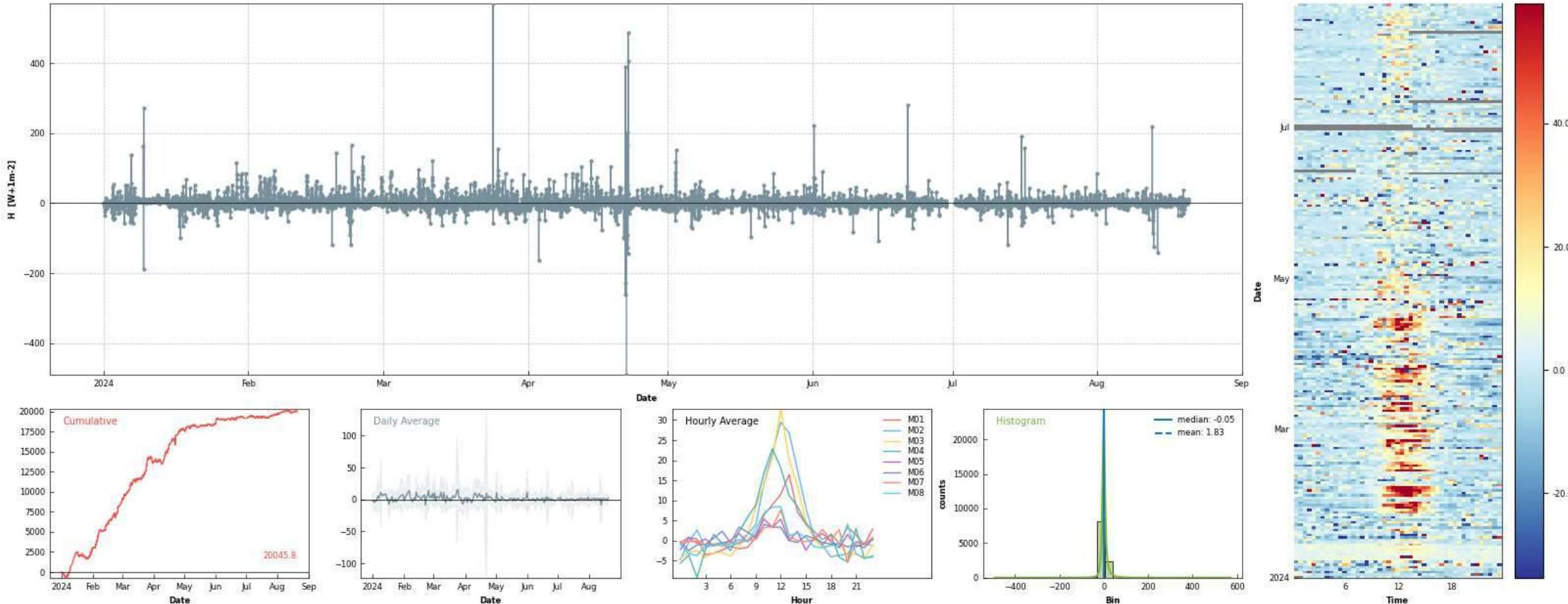


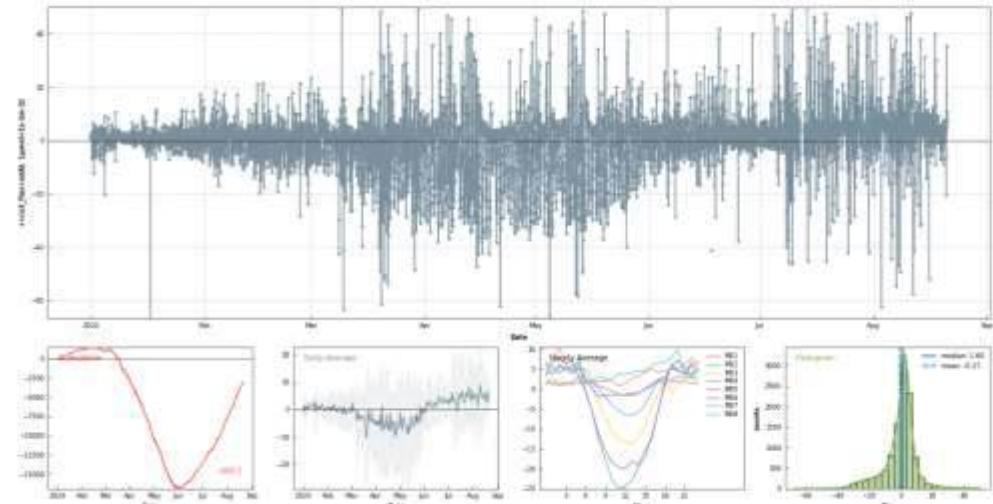


Photo: Regine Maier

- All good!

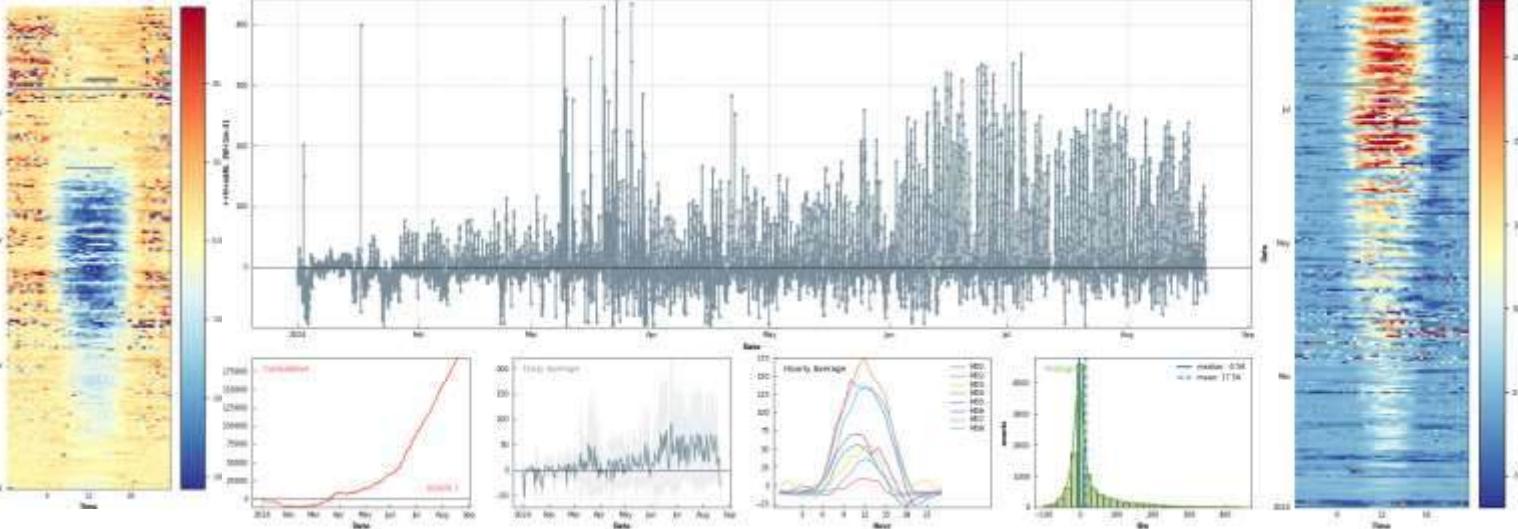
CO2 flux

Abs limits: -70+50



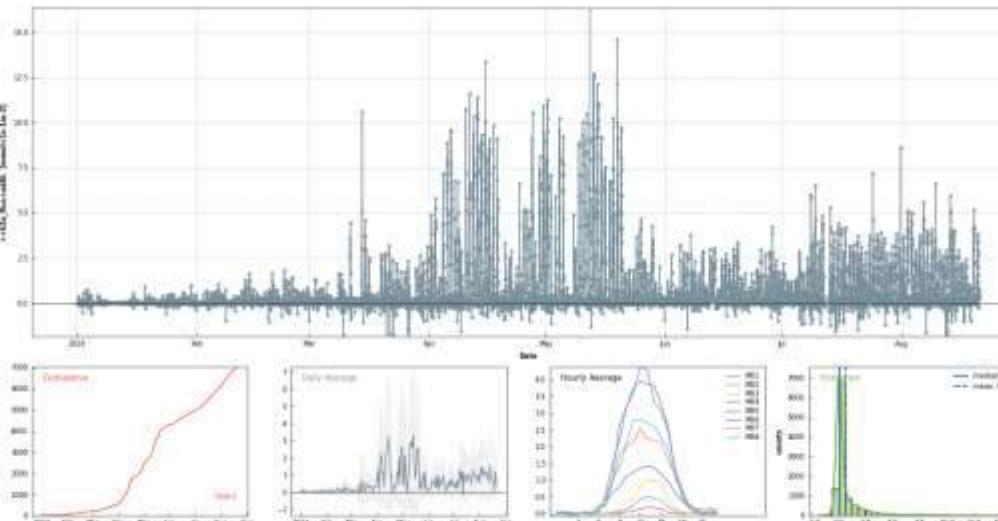
H

Abs limits: -100+450



H2O flux

Abs limits: -2+20



w_rot

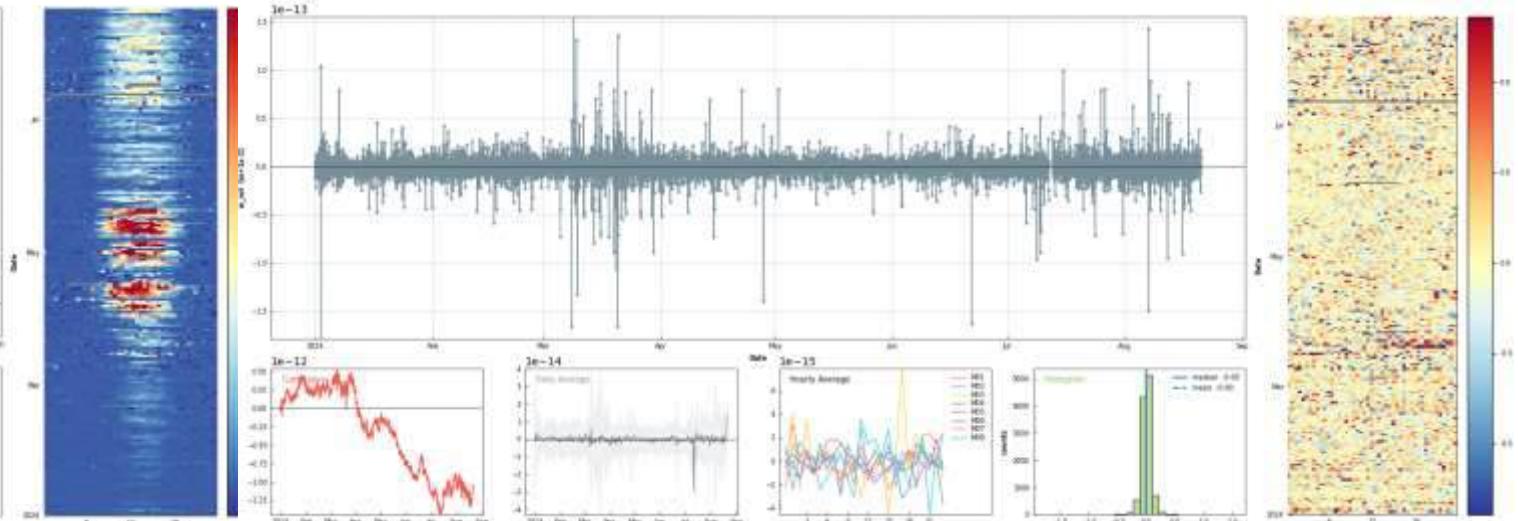


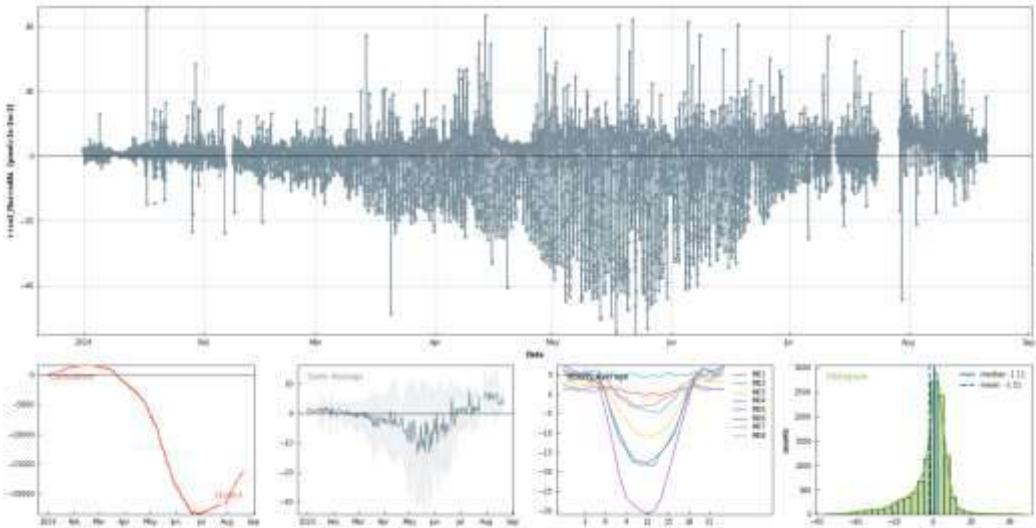


Photo: Fabio Turco

- 25.07 wheat harvest
- Few days later disk harrowing → N₂O peak!
- 24.07 -29.07 station was off because we had to remove the power cable from the field
- 29.07-07.08 LGR issue with LGR → gap

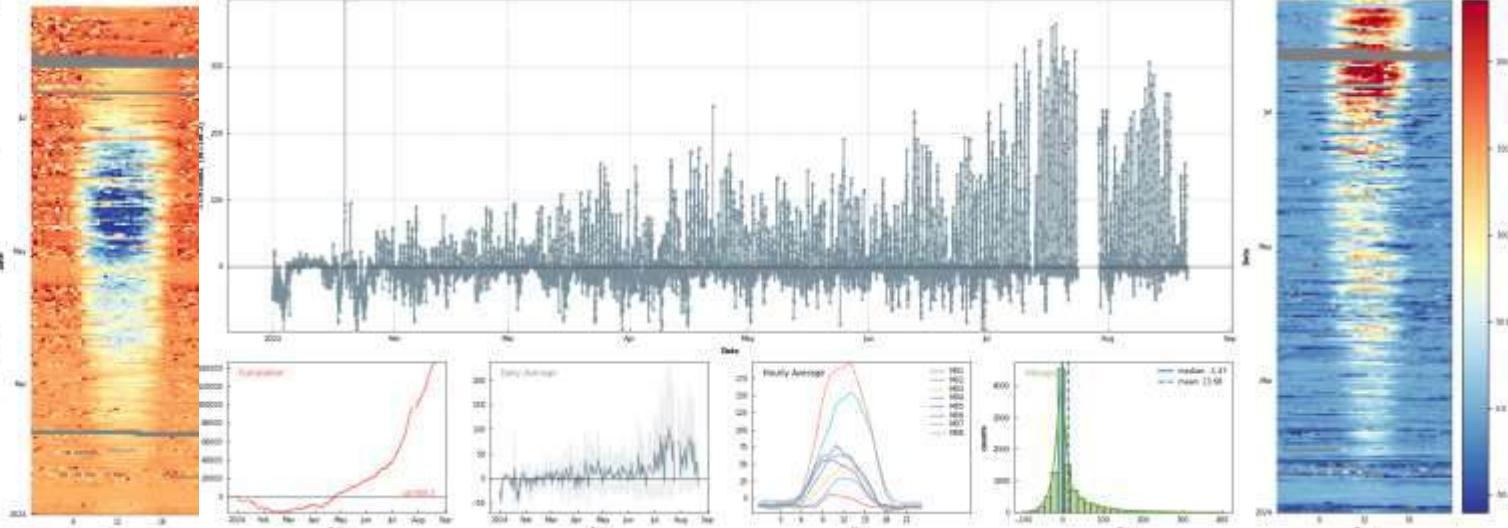
CO₂ flux

Abs limits: -70+50

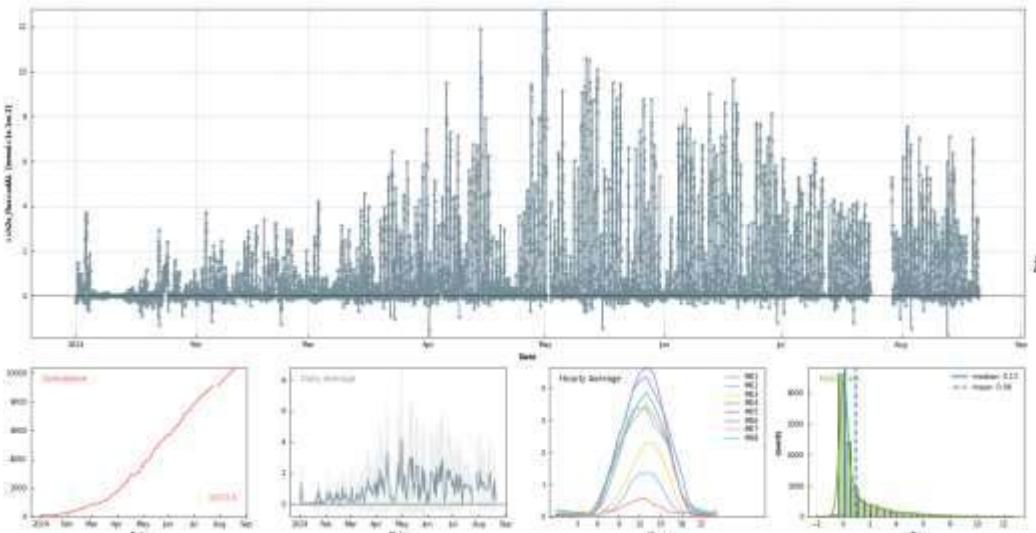


H

Abs limits: -100+450

H₂O flux

Abs limits: -2+20

N₂O

Abs limits: -0.002+0.015

