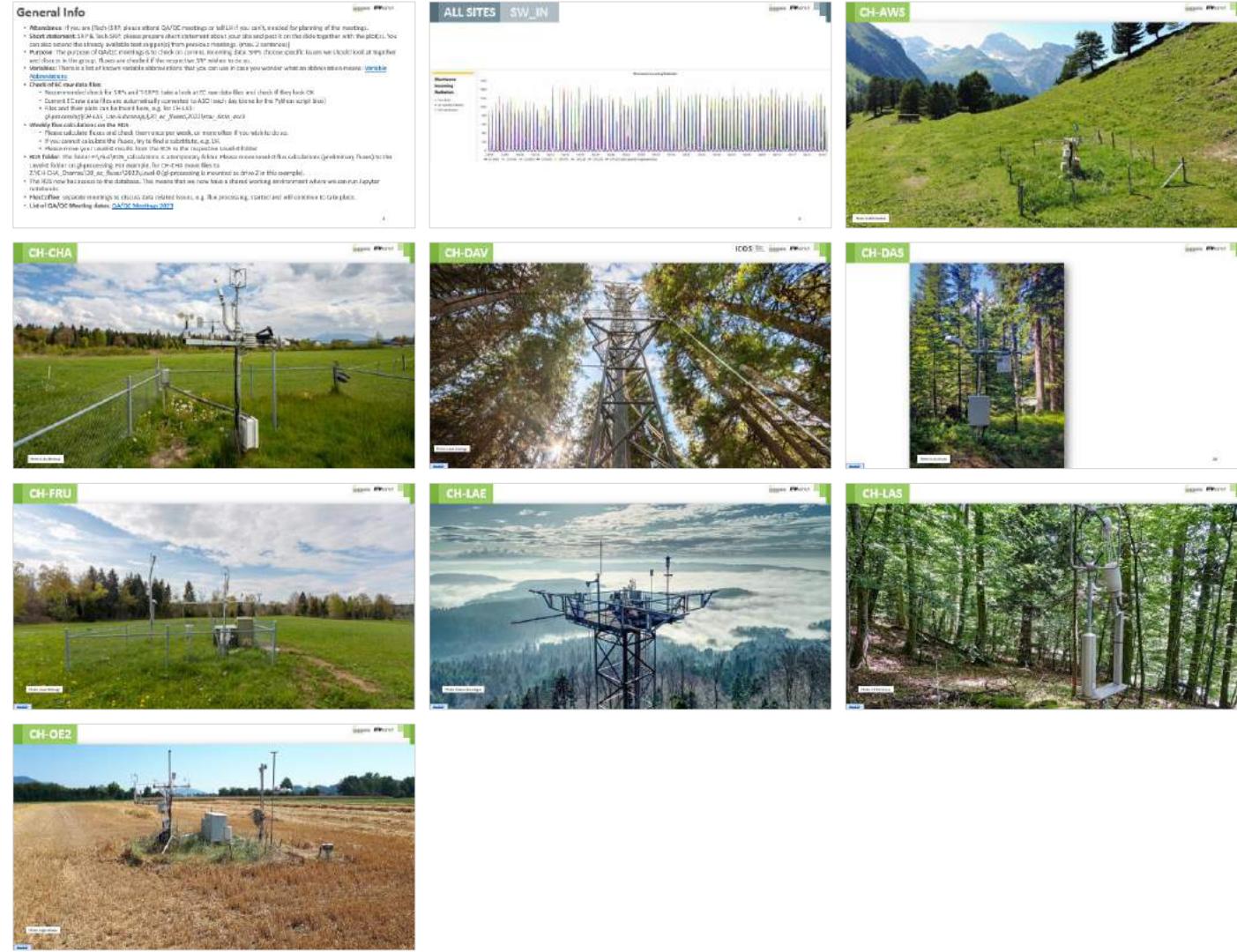


# QA/QC Meeting

## 29 June 2023

Participants: LH, LS, AS, IF, KMK, LA, LK, MR, YW, FT (10)



# 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, started and will continue to take place.
- **List of QA/QC Meeting dates:** [QA/QC Meetings 2023](#)

# Talking Points

- Make sure to check the plots of a random EC raw data file from time to time
- Checking SW\_IN, VPD and TA, site overview
- Checking recent fluxes
- The wind component w shows an offset during some time periods at some sites, maybe we can correct this directly in EddyPro (see next slide)



File View Run Help

New Open Save Save As Close Welcome Project Creation Basic Settings Advanced Settings Run Output Run Express Mode Advanced Mode Stop

**Processing Options** (highlighted with a red box)

**Raw data processing**

Wind speed measurement offsets: U: 0.000 [m/s], V: 0.000 [m/s], W: 0.000 [m/s]

Fix 'w boost' bug (Gill WindMaster and WindMaster Pro only)  Angle-of-attack correction for wind components (Gill's only)  Axis rotations for tilt correction

Turbulent fluctuations: Method: Select automatically, Rotation method: Double rotation, Detrend method: Block average, Time constant: 150.0 [s], Time lag detection method: Covariance maximization with default, Time Lag Optimization Settings

Time lags compensation

Compensation of density fluctuations:  Compensate density fluctuations (WPL terms)  Add instrument sensible heat components, only for LI-7500

Surface temperature estimation: Simple linear regressions (radio button selected), Multiple regressions, Day time, Night time

Bottom:  $T_{bottom} = 0.944 + T_d \cdot 2.57$ , Top:  $T_{top} = 0.005 + T_d \cdot 0.24$ , Spar:  $T_{spar} = 0.010 + T_d \cdot 0.36$

**Other options**

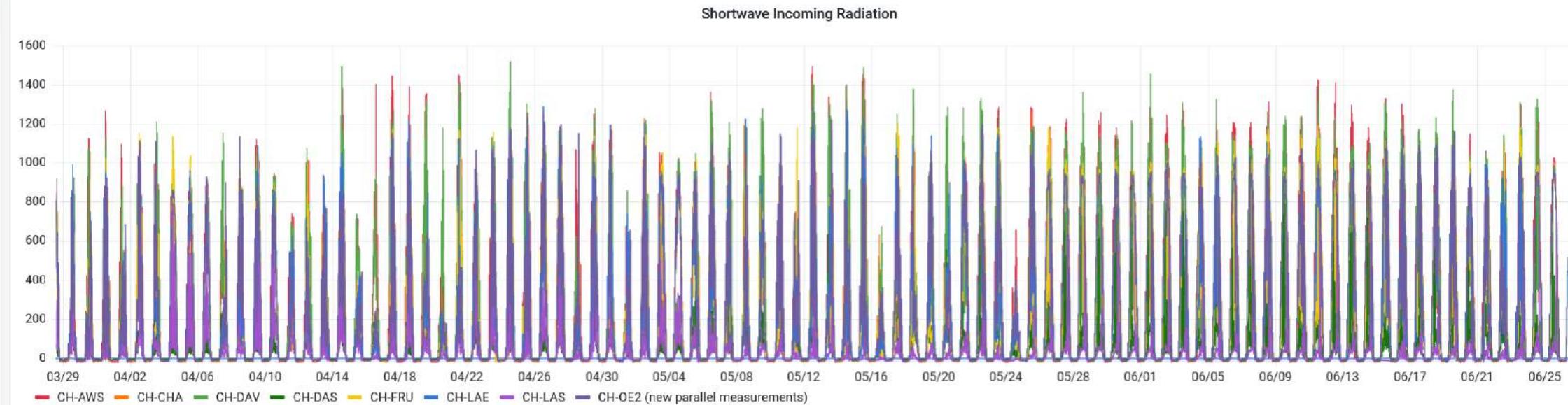
Quality check, Flagging policy: Mauder and Foken (2004) (0-1-2 system), Footprint estimation, Footprint method: Kijun et al. (2004)

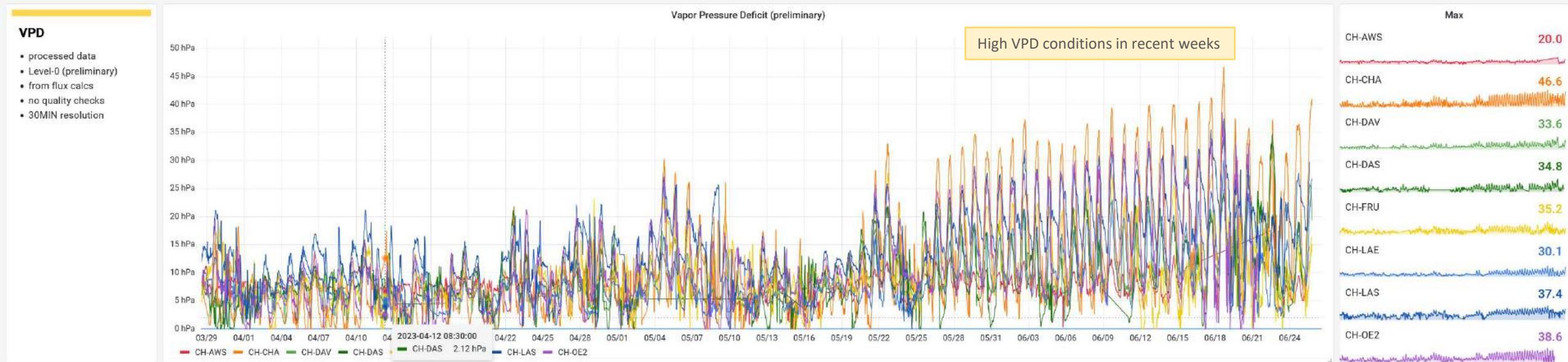
Restore Default Values

Maybe we can correct the the w offset issue during the affected time periods with this setting here?

**Shortwave  
Incoming  
Radiation**

- raw data
- no quality checks
- full resolution

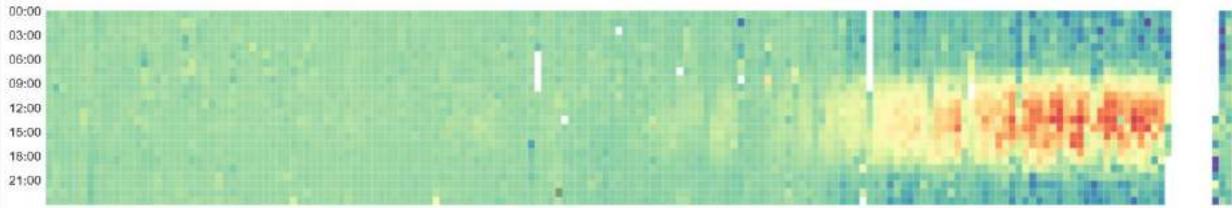




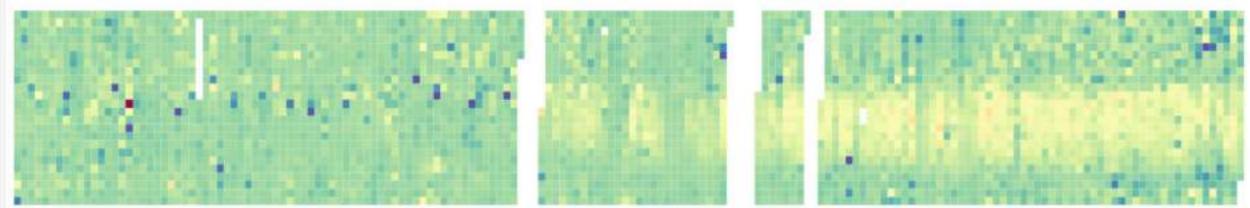


CO2 flux: This year so far ...

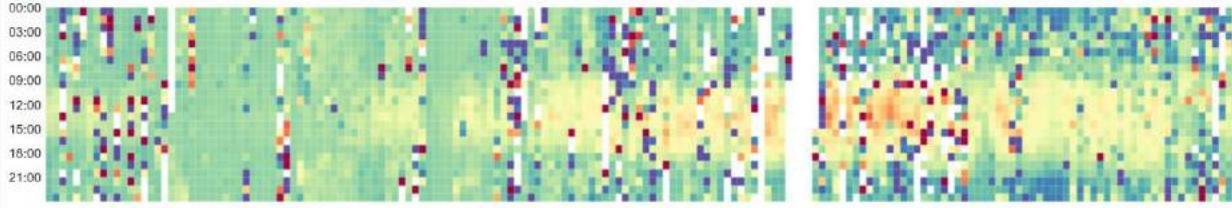
CH-AWS (hourly)



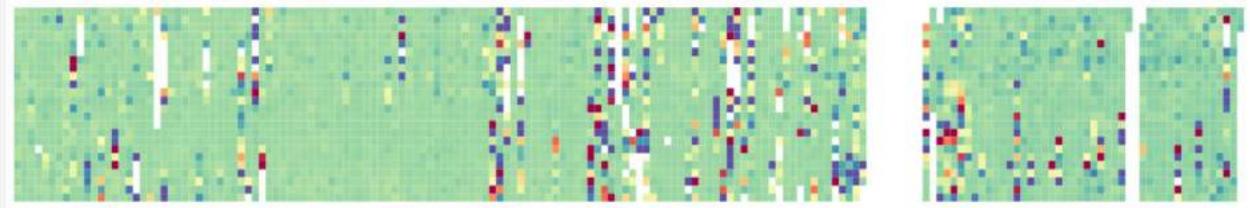
CH-DAV (hourly)



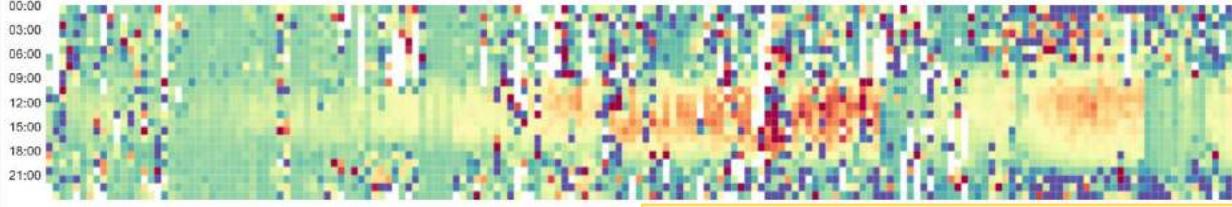
CH-FRU (hourly)



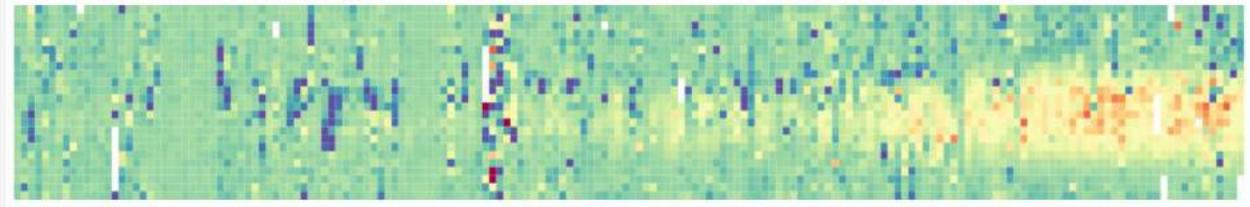
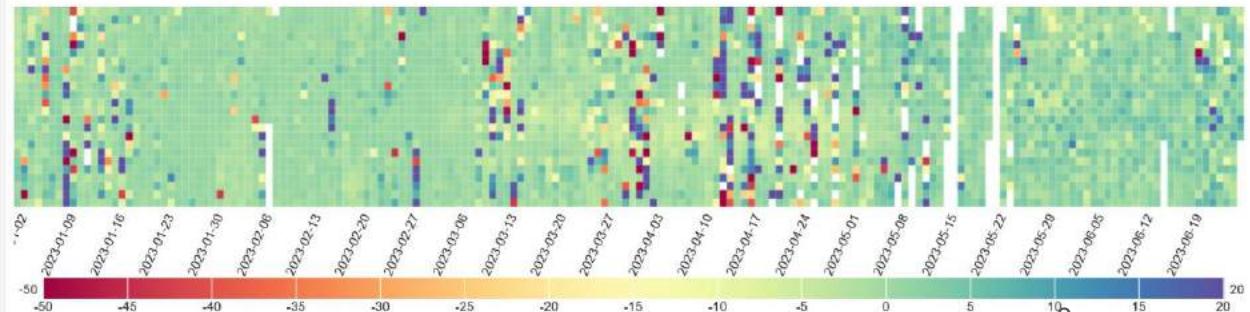
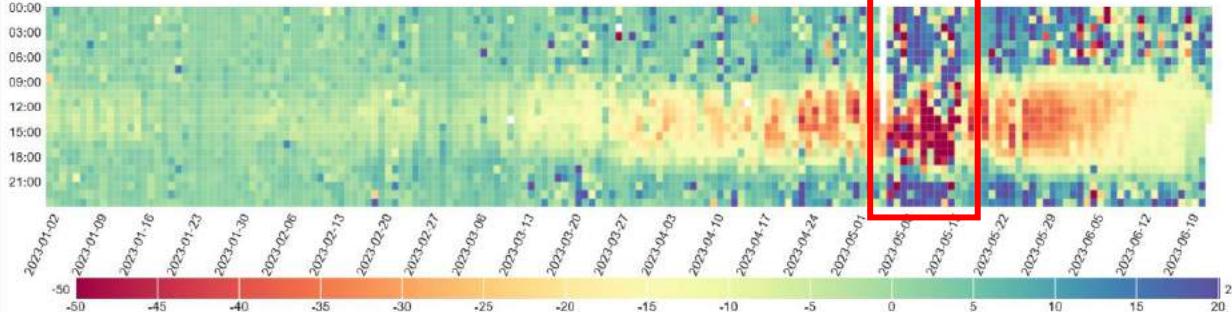
CH-DAS (hourly)



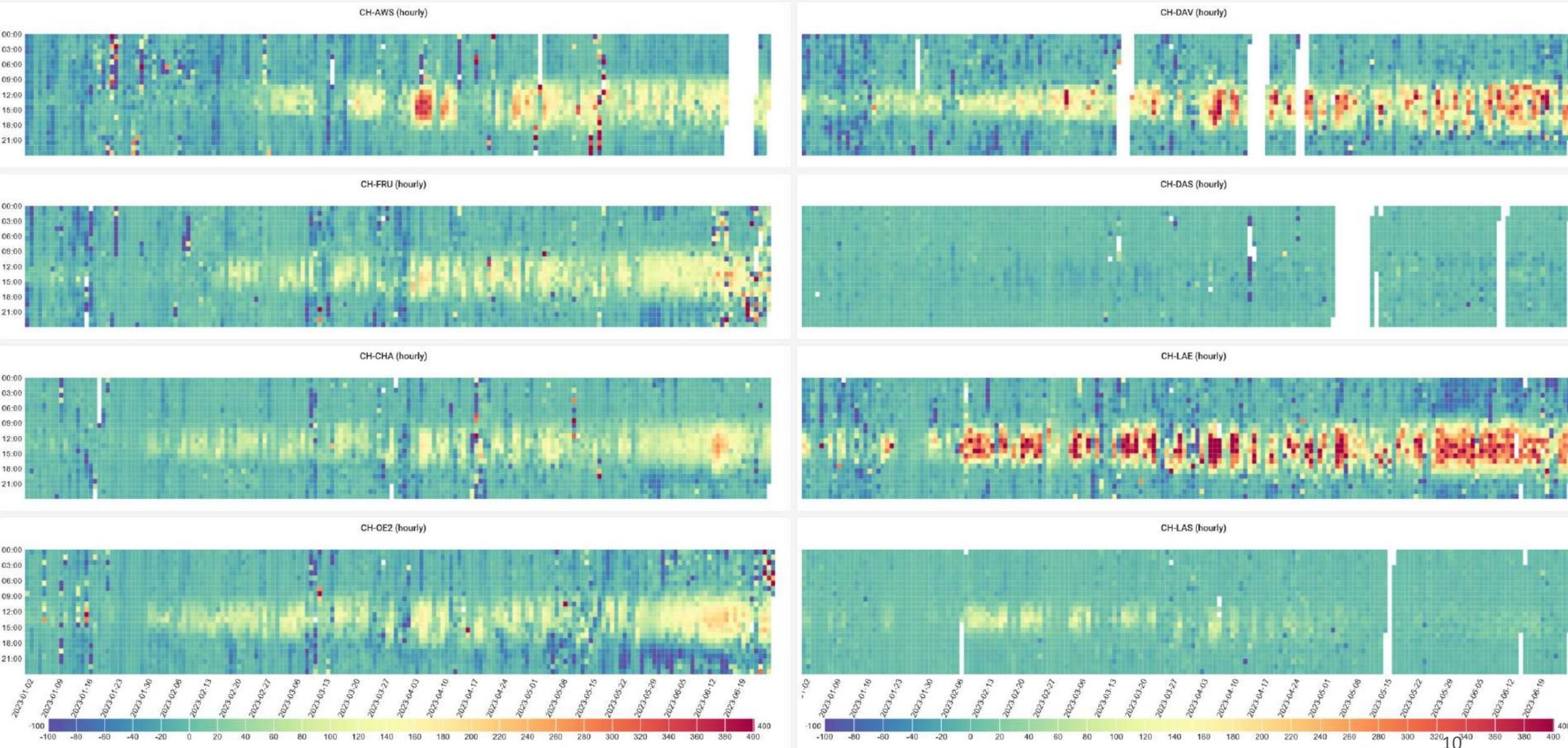
CH-CHA (hourly)



CH-LAE (hourly)

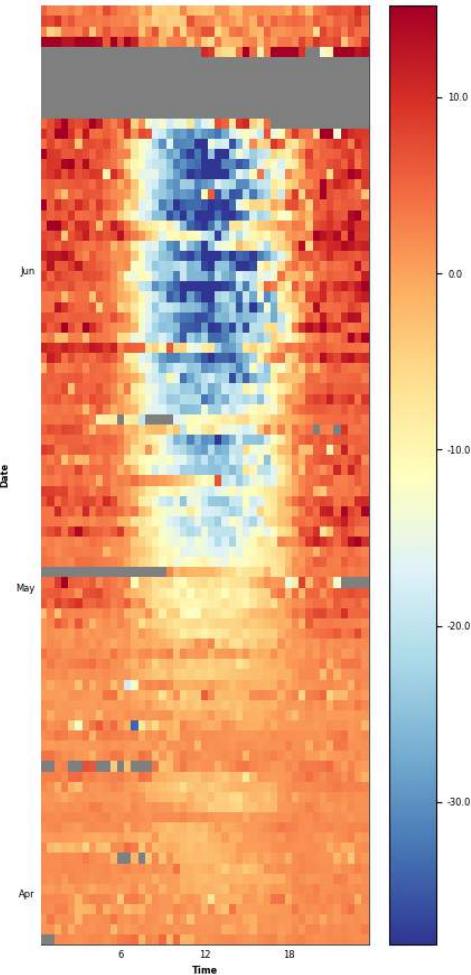
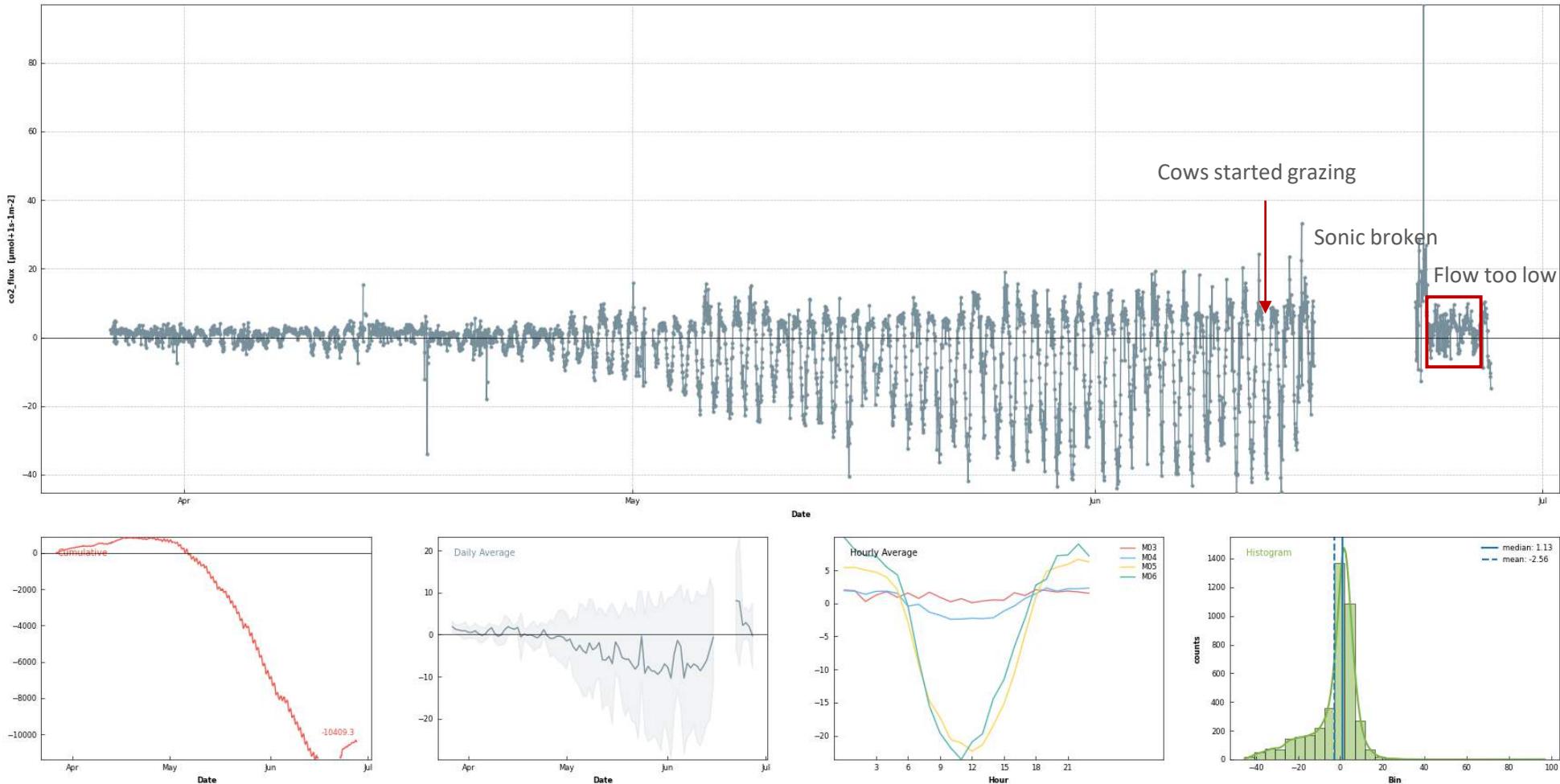
CH-OE2 (hourly)  
Offset in wind component w caused amplified fluxes

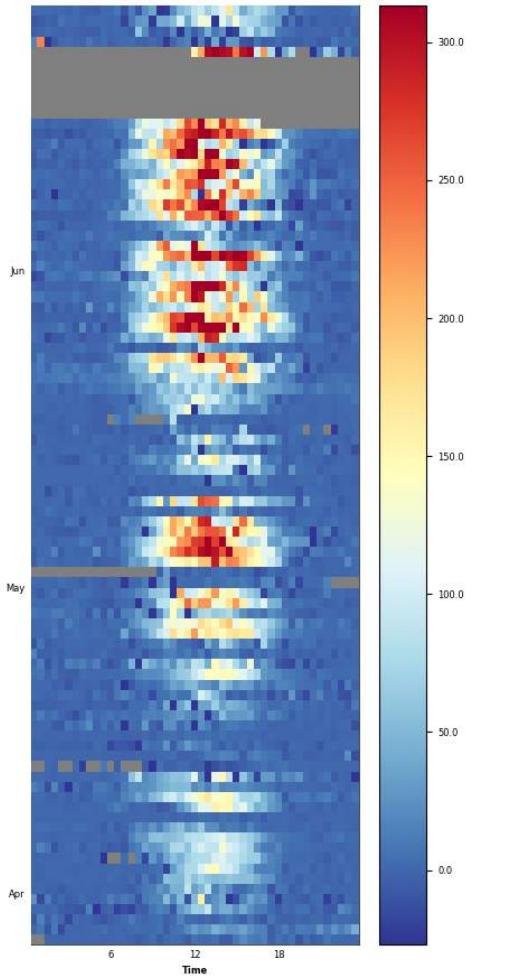
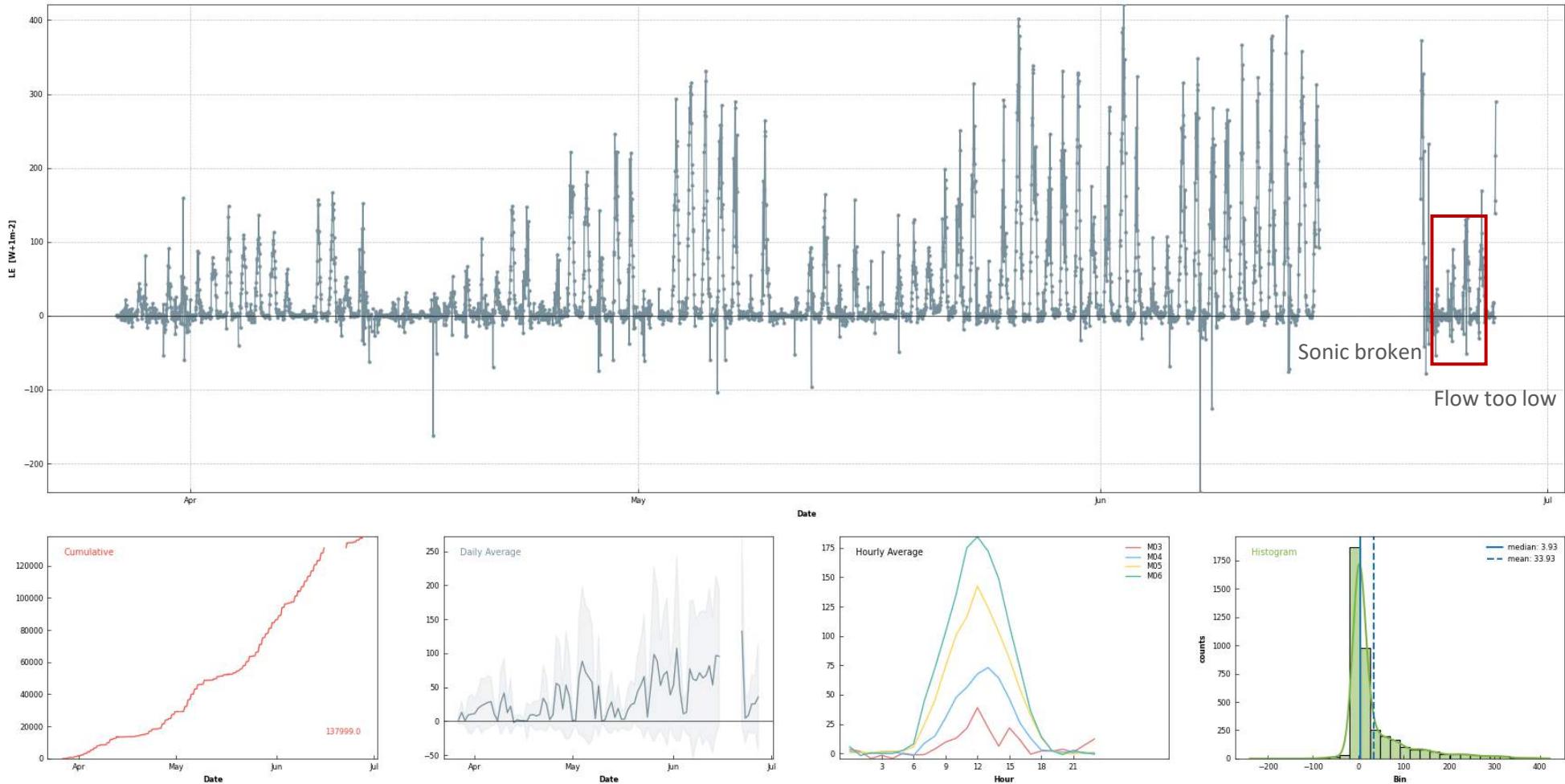
H, sensible heat flux: This year so far ...

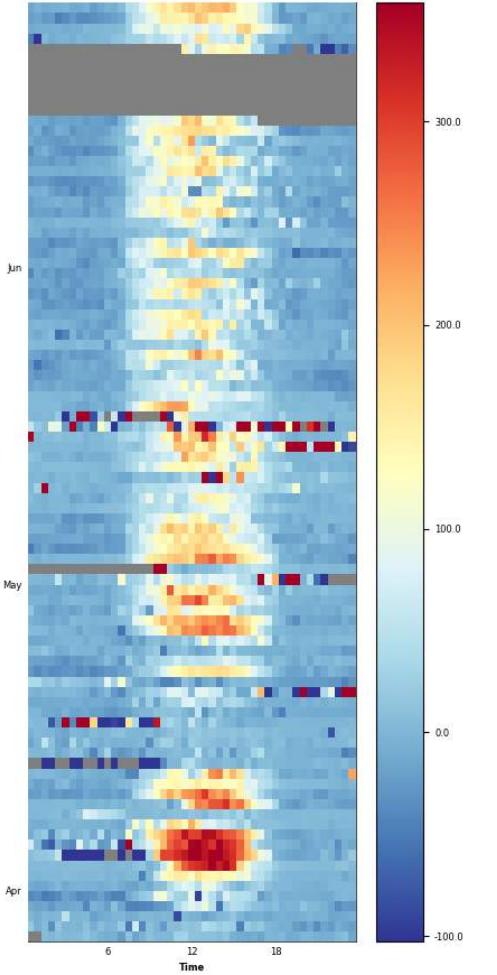
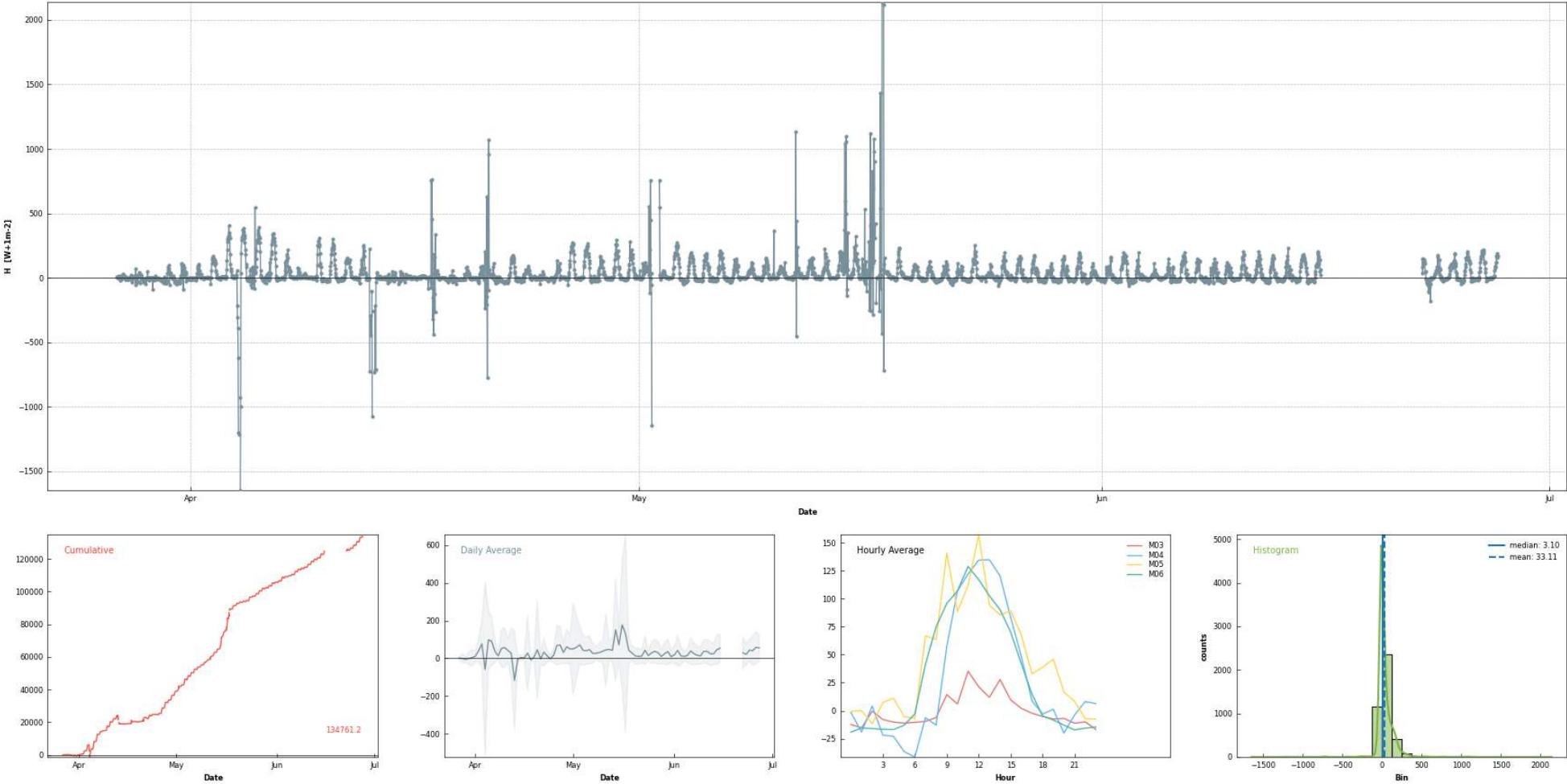


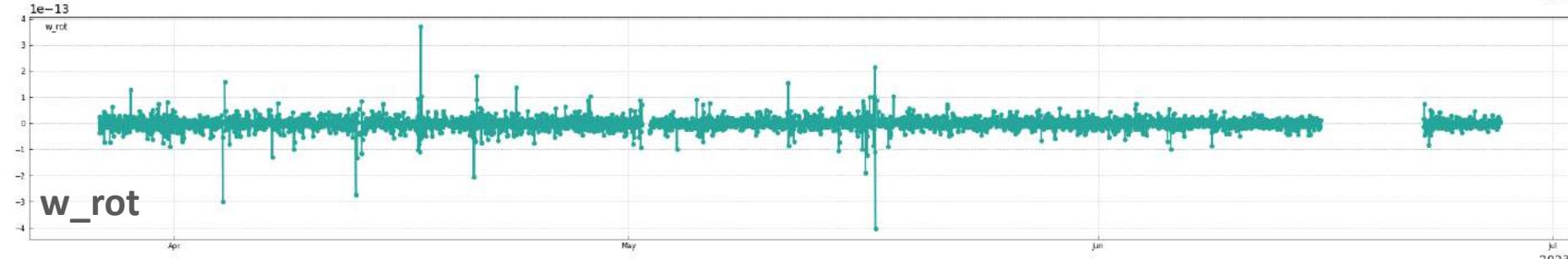
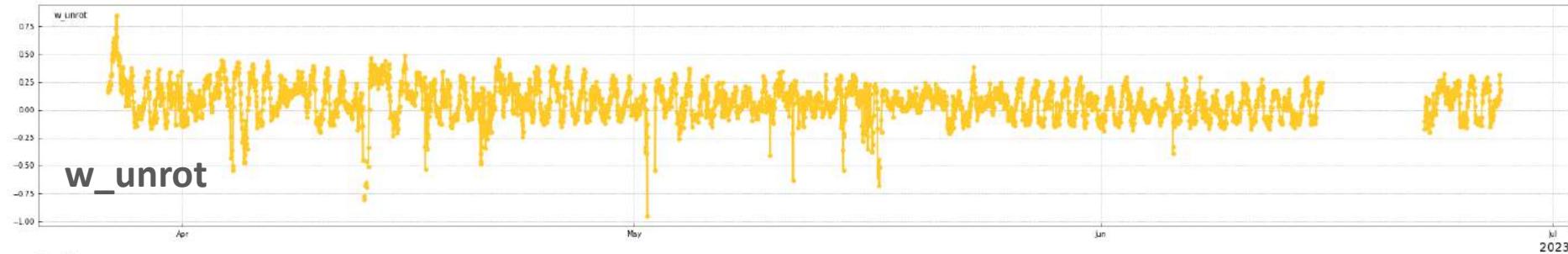
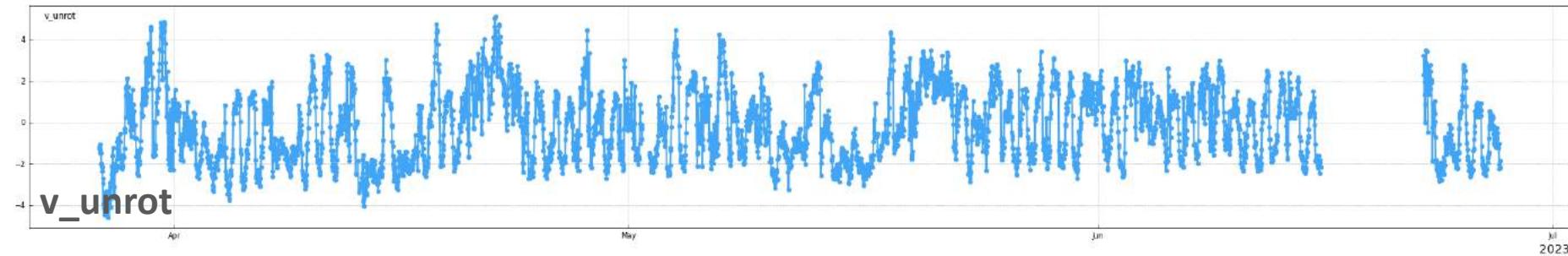
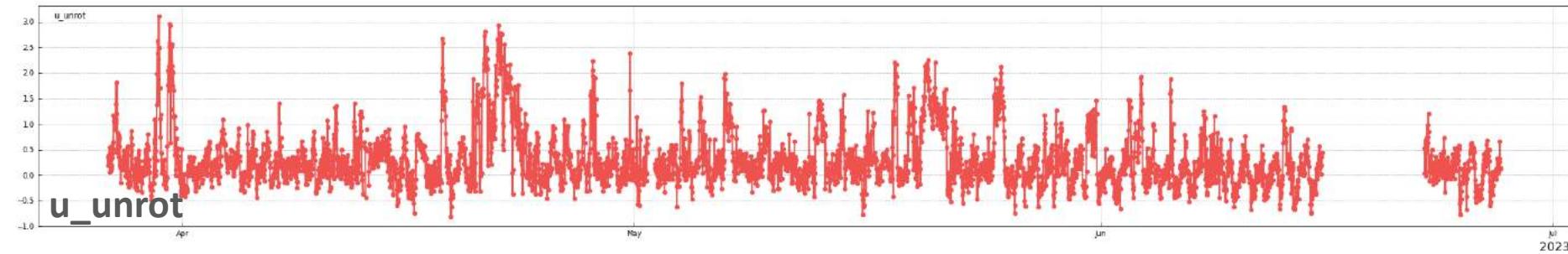












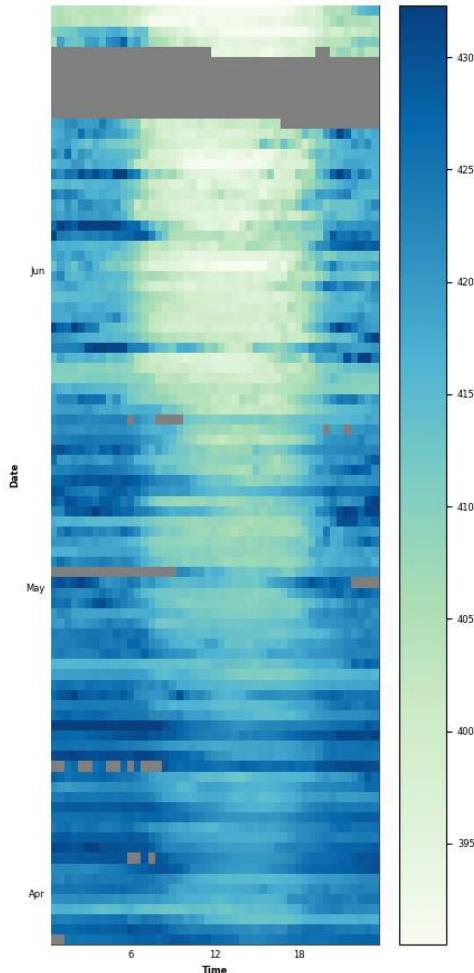
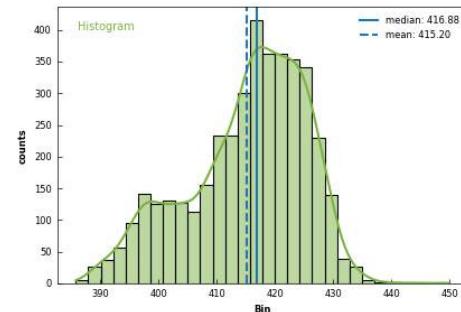
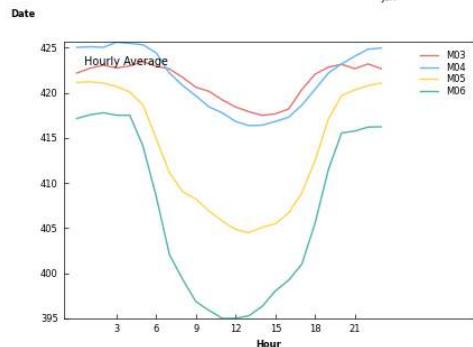
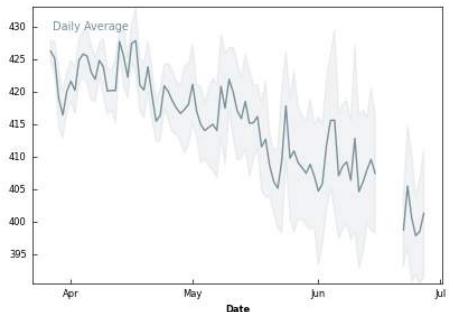
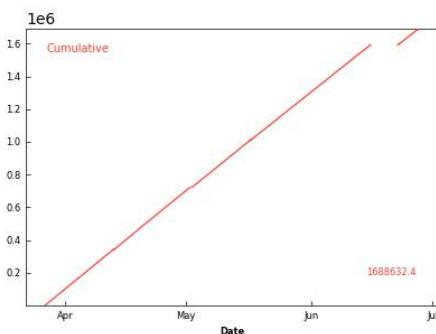
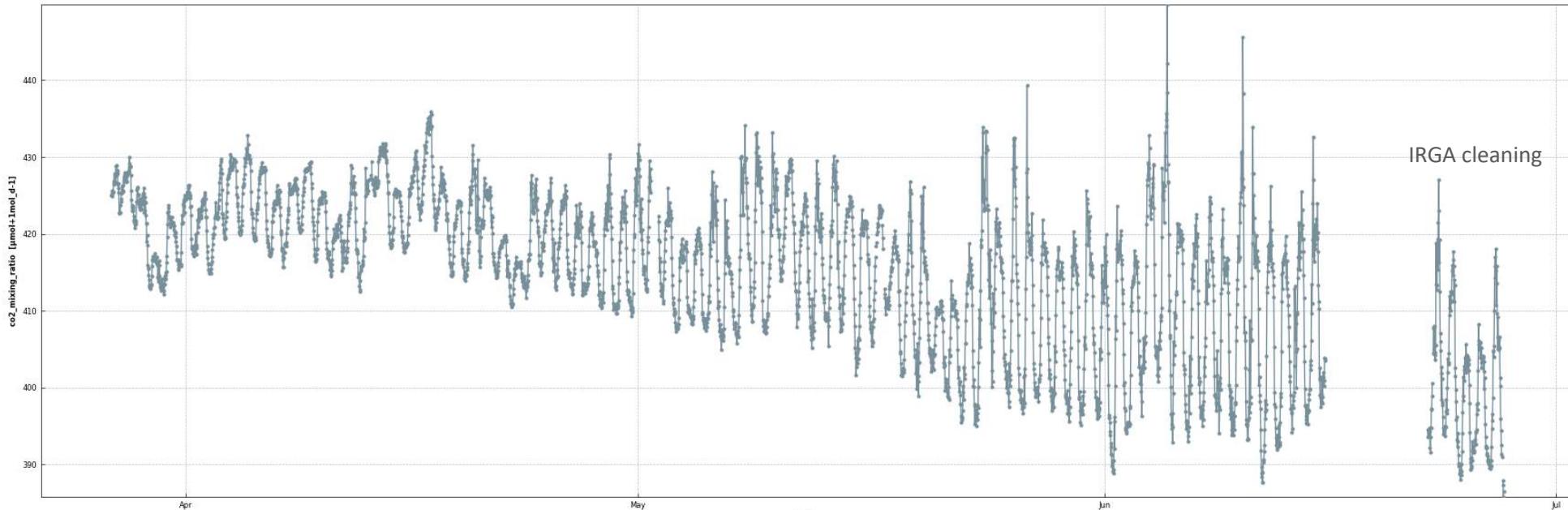
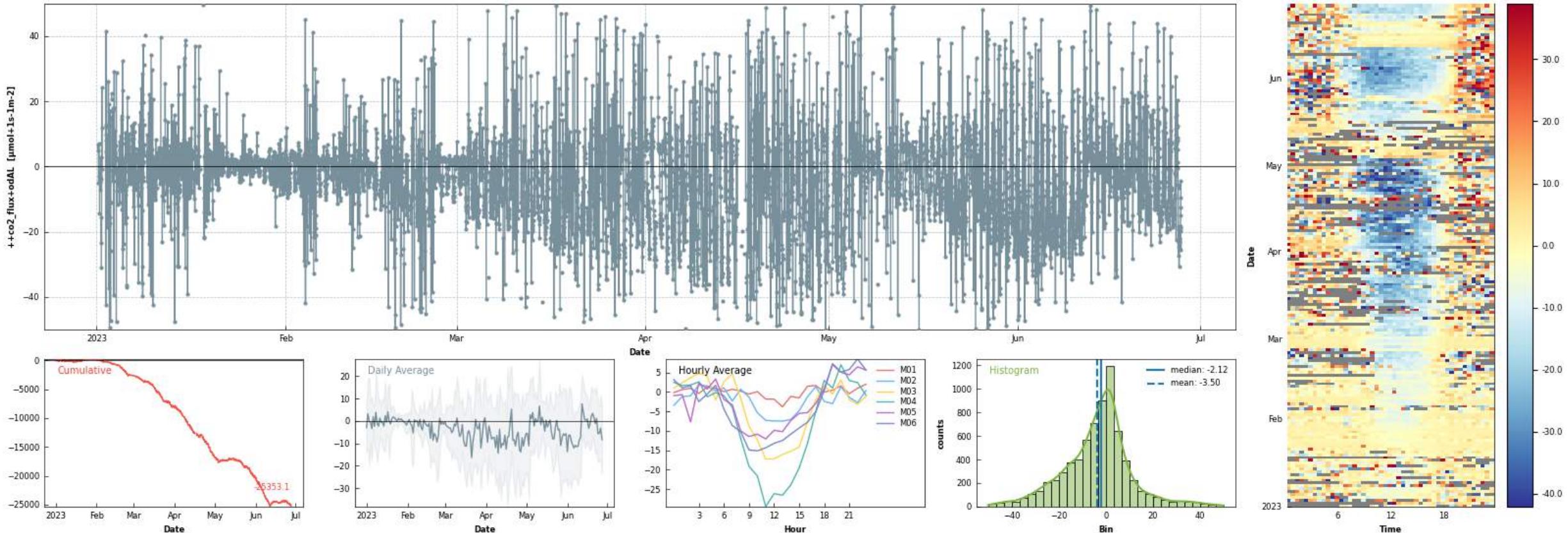
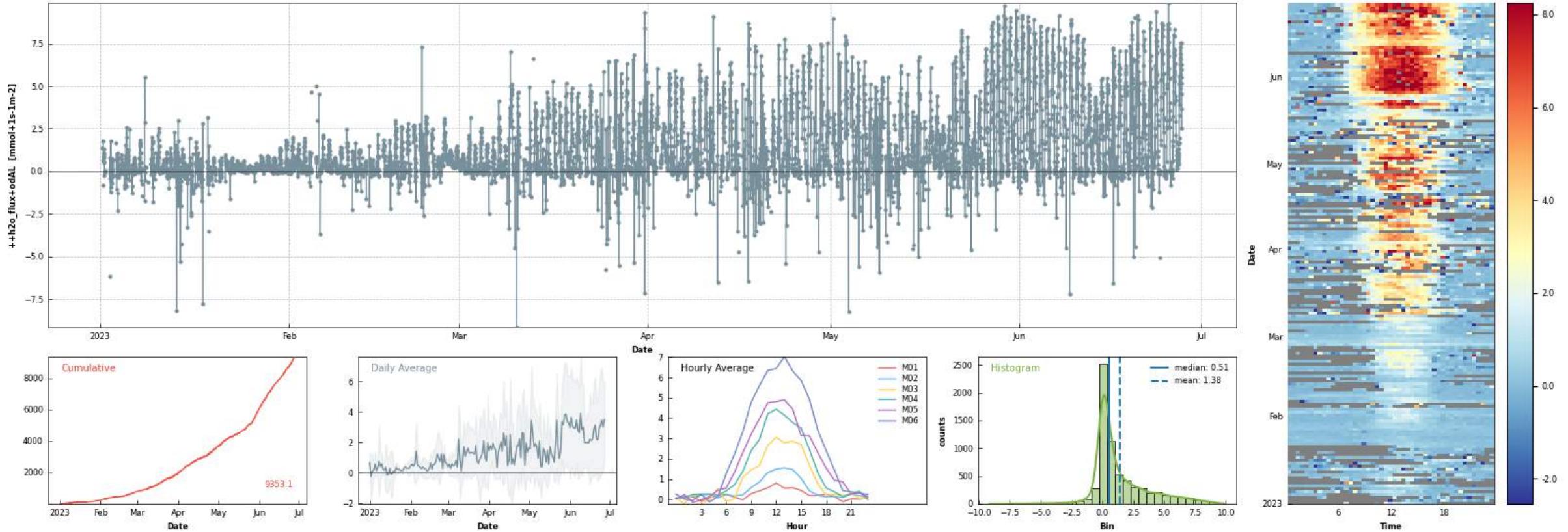


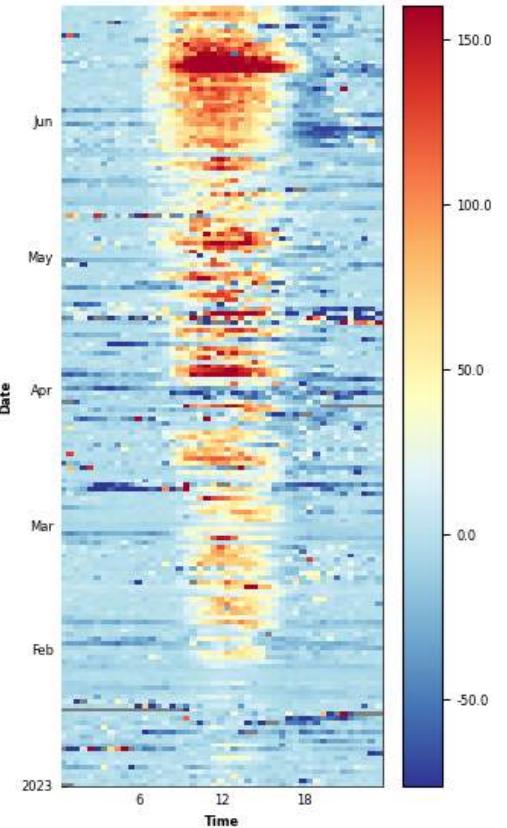
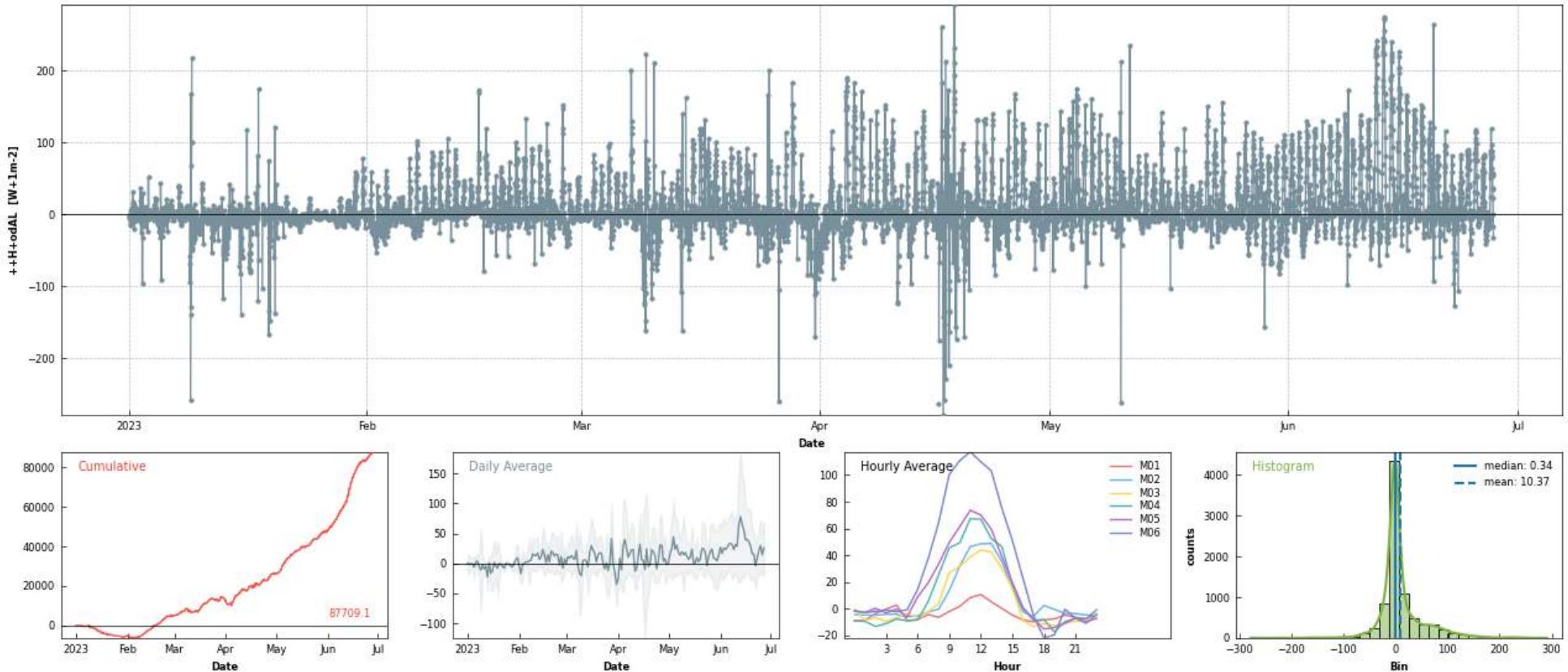


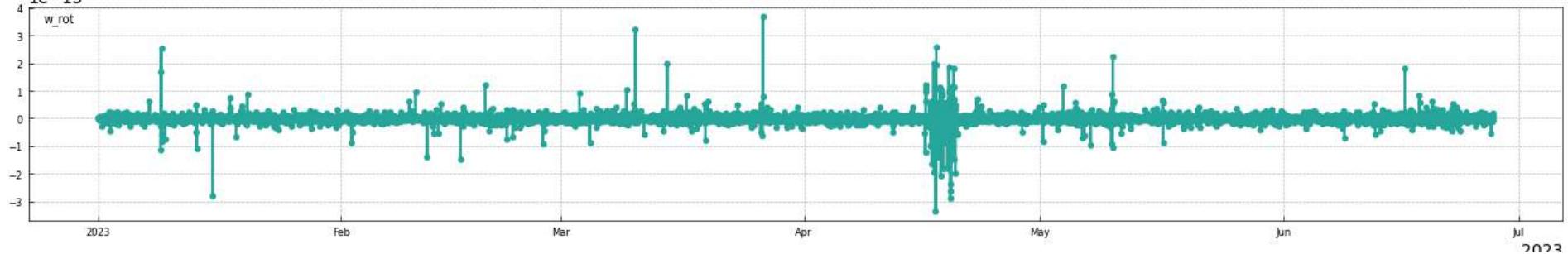
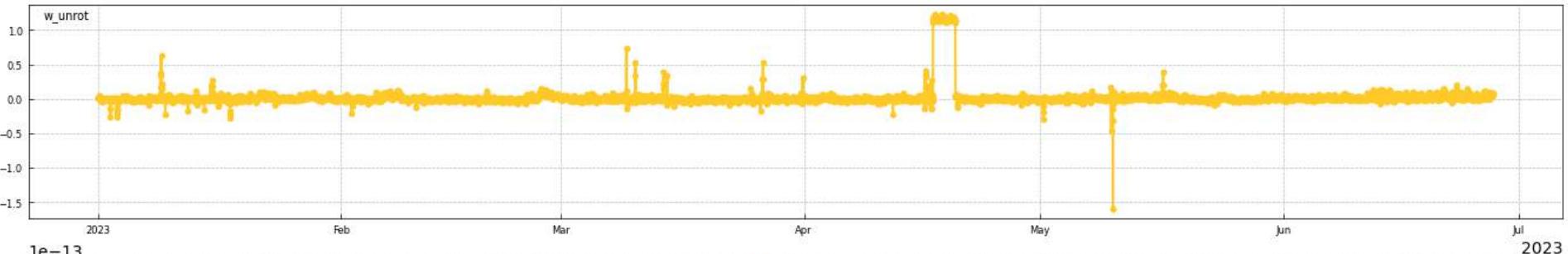
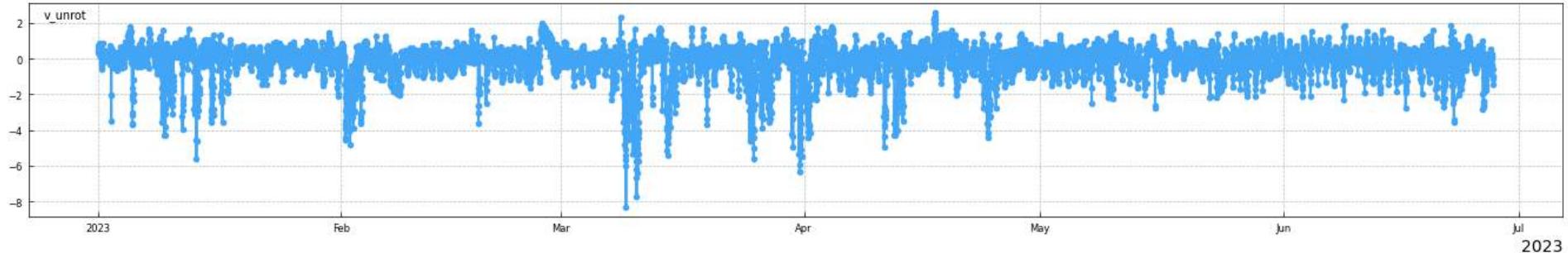
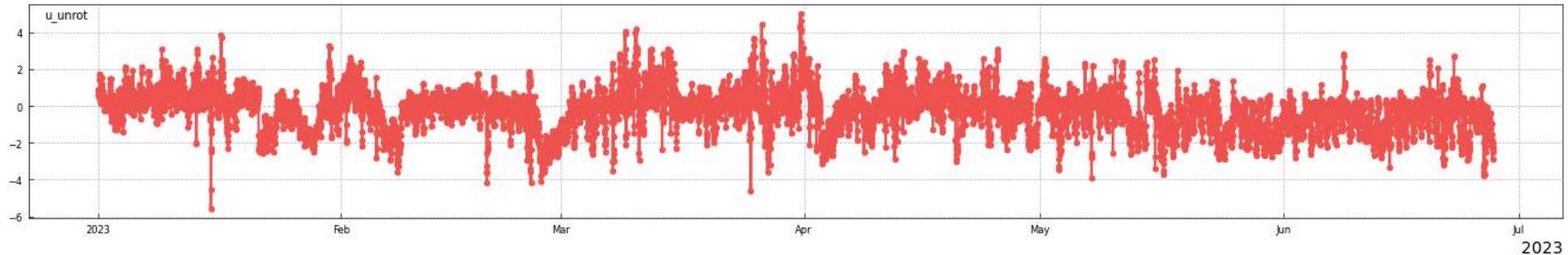
Photo: Lukas Hörtnagl

- 1st mowing: 2023.05.04
  - 2nd mowing: 2023.06.11









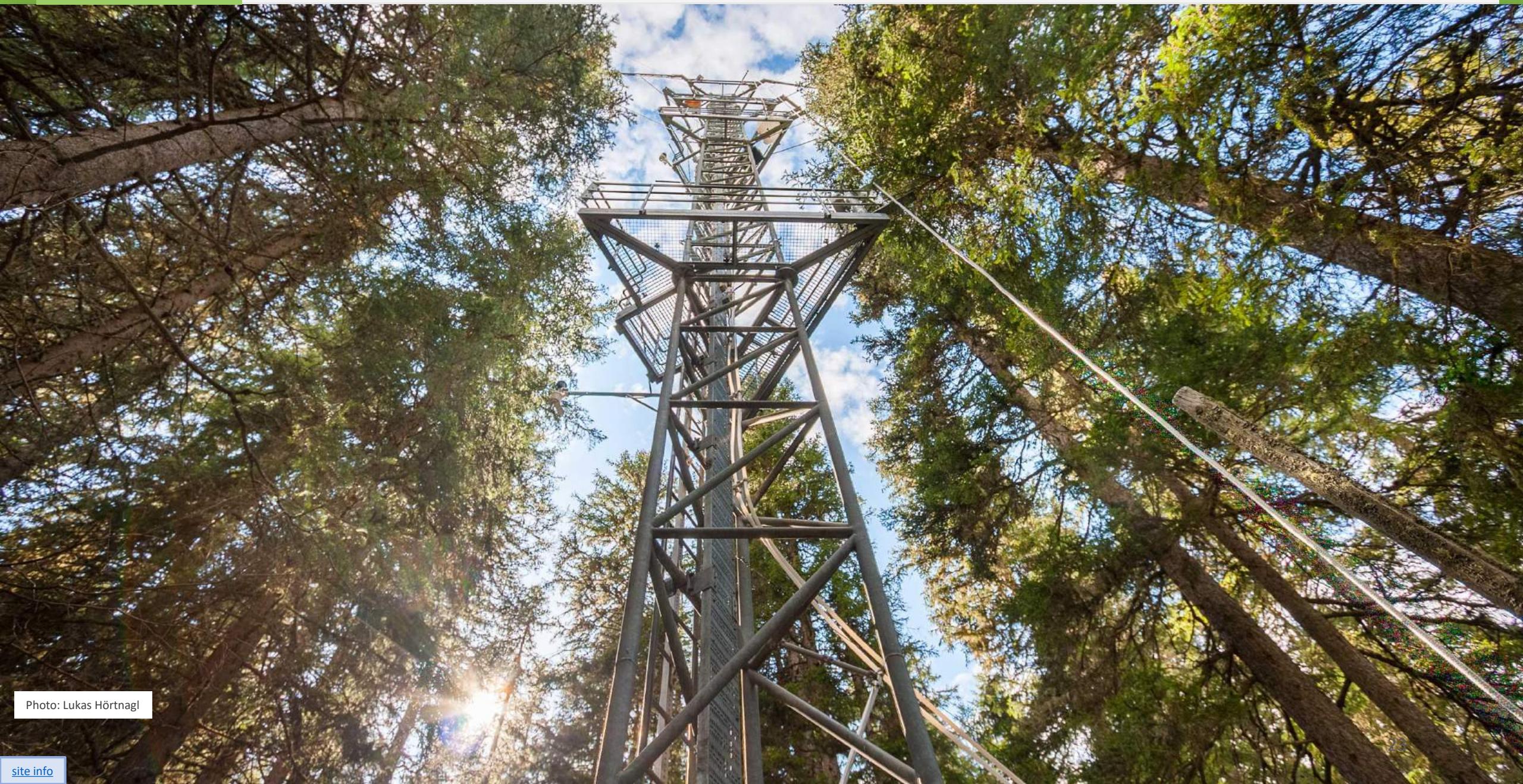
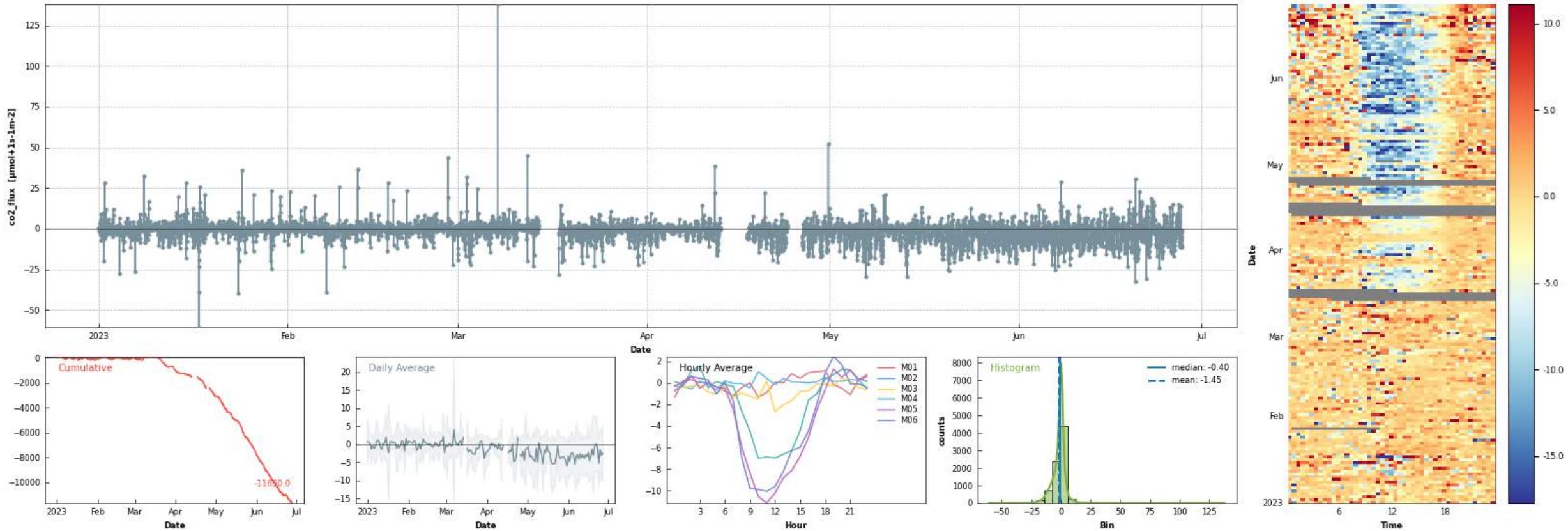
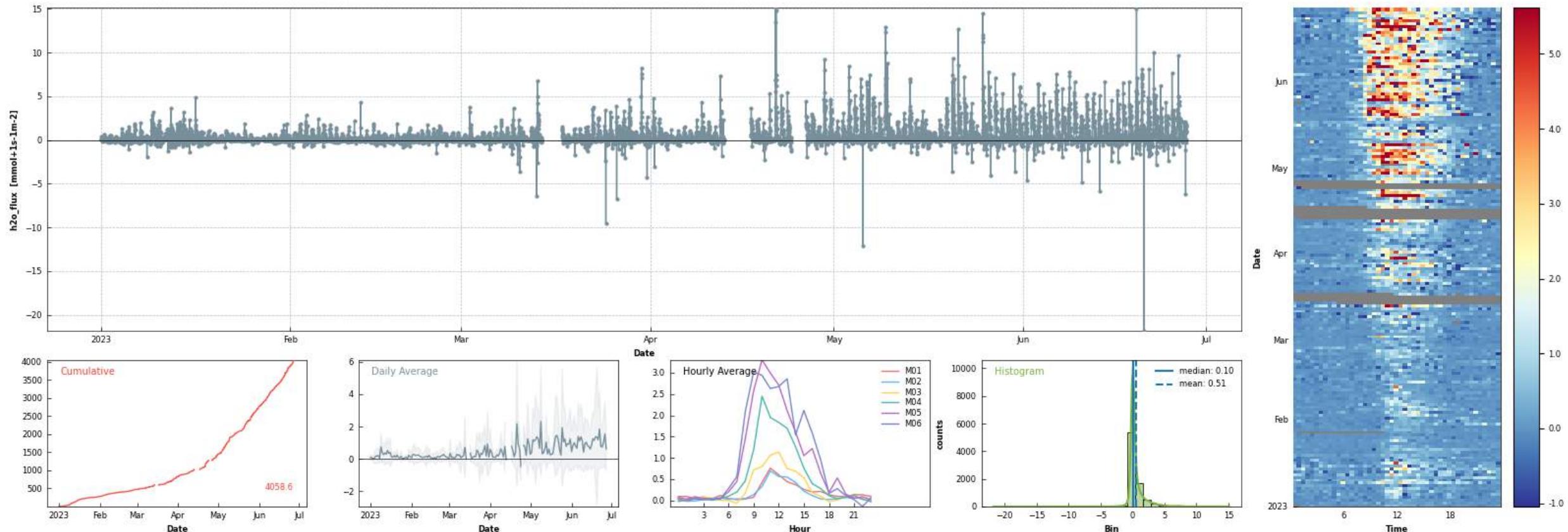
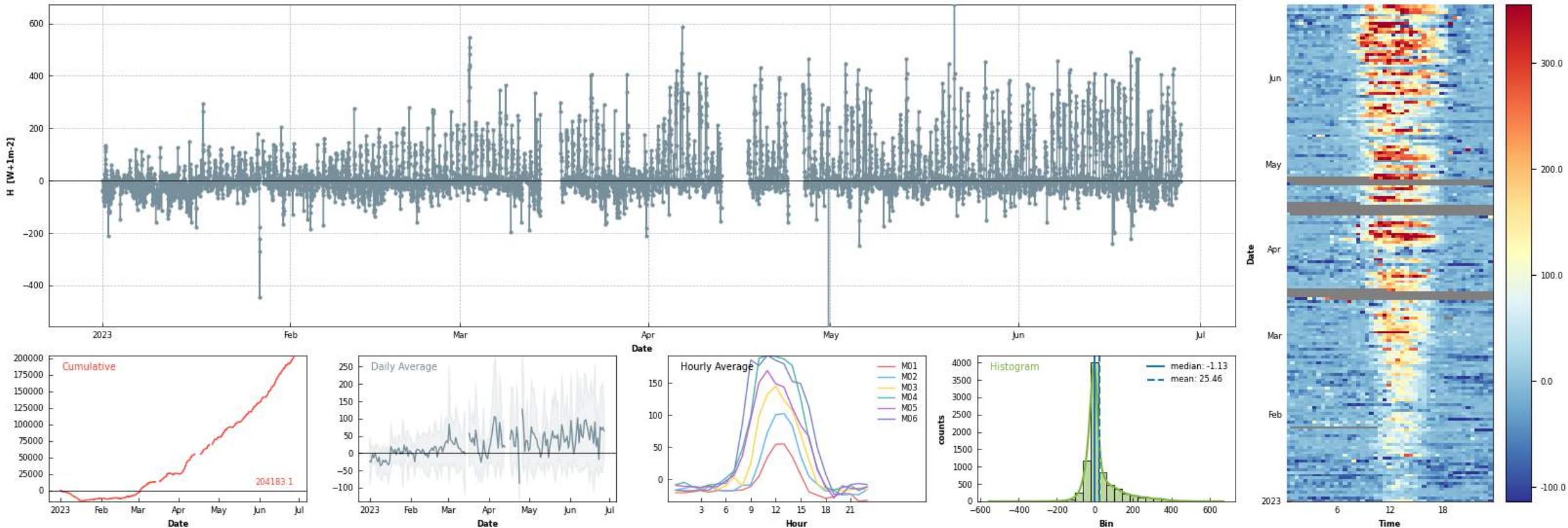


Photo: Lukas Hörnagl

Good data coverage since sonic was changed







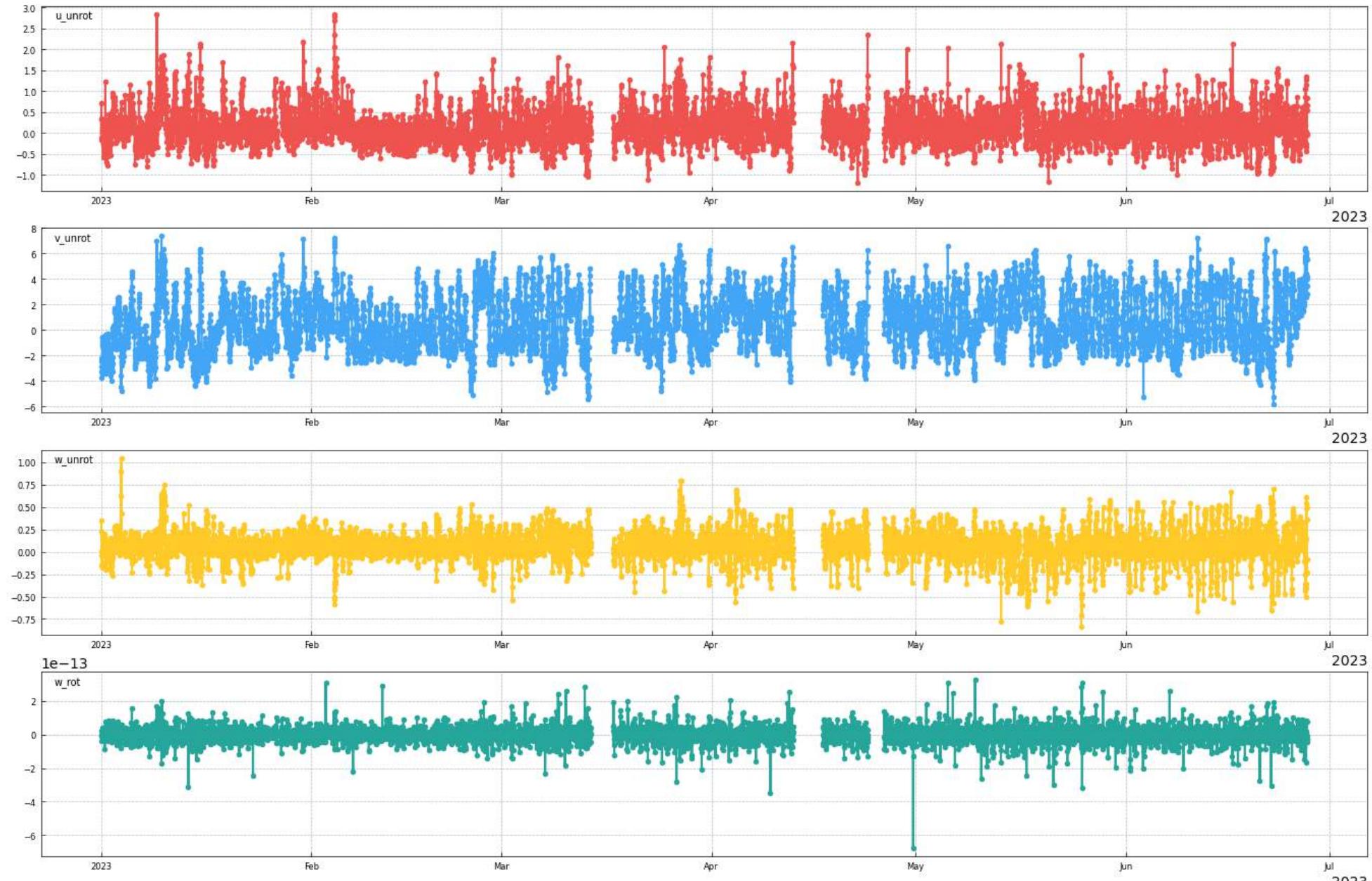
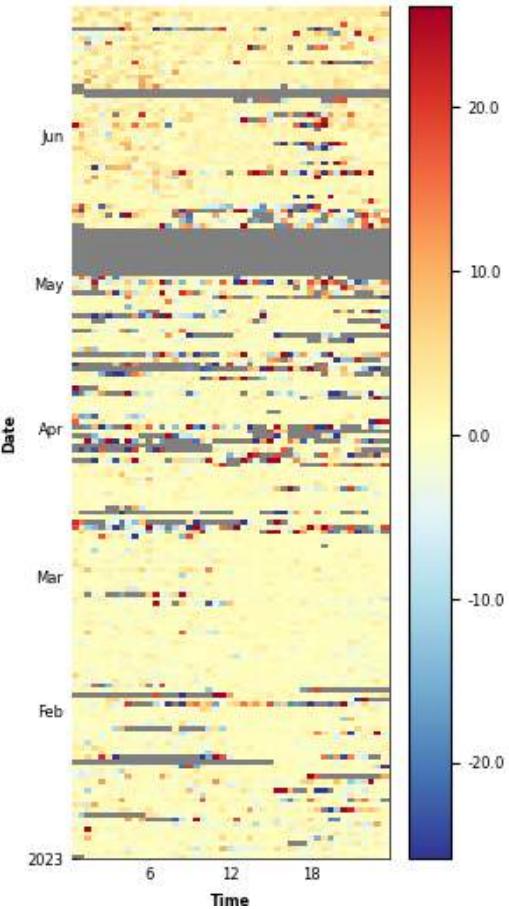
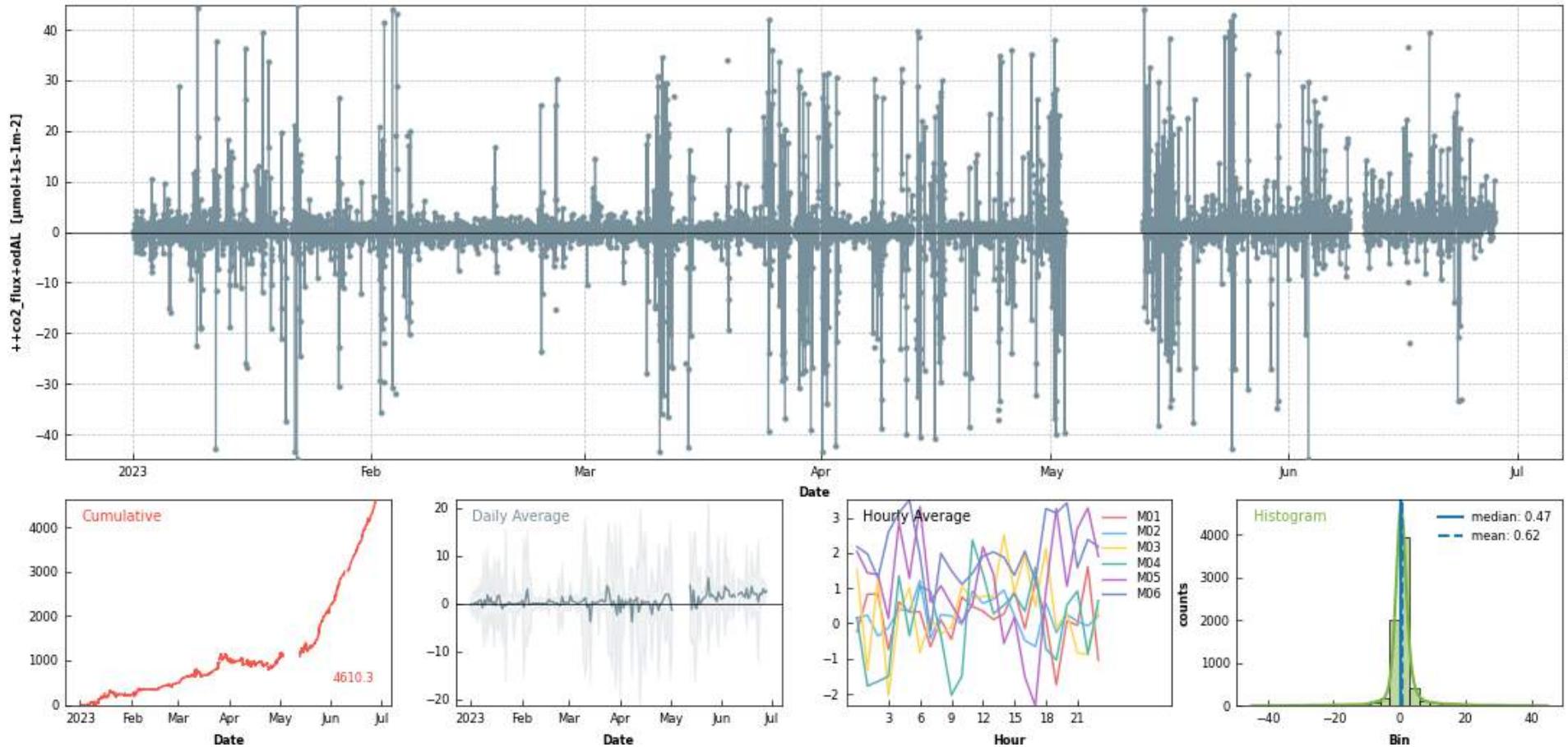
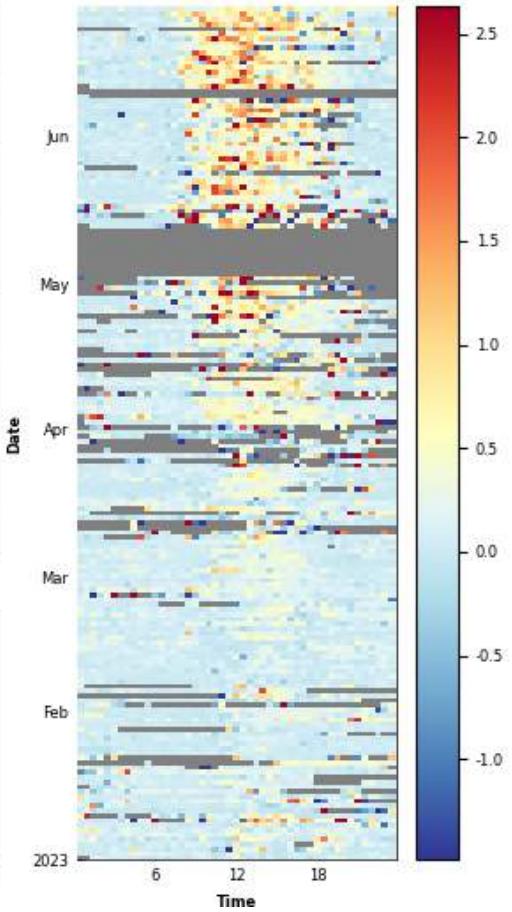
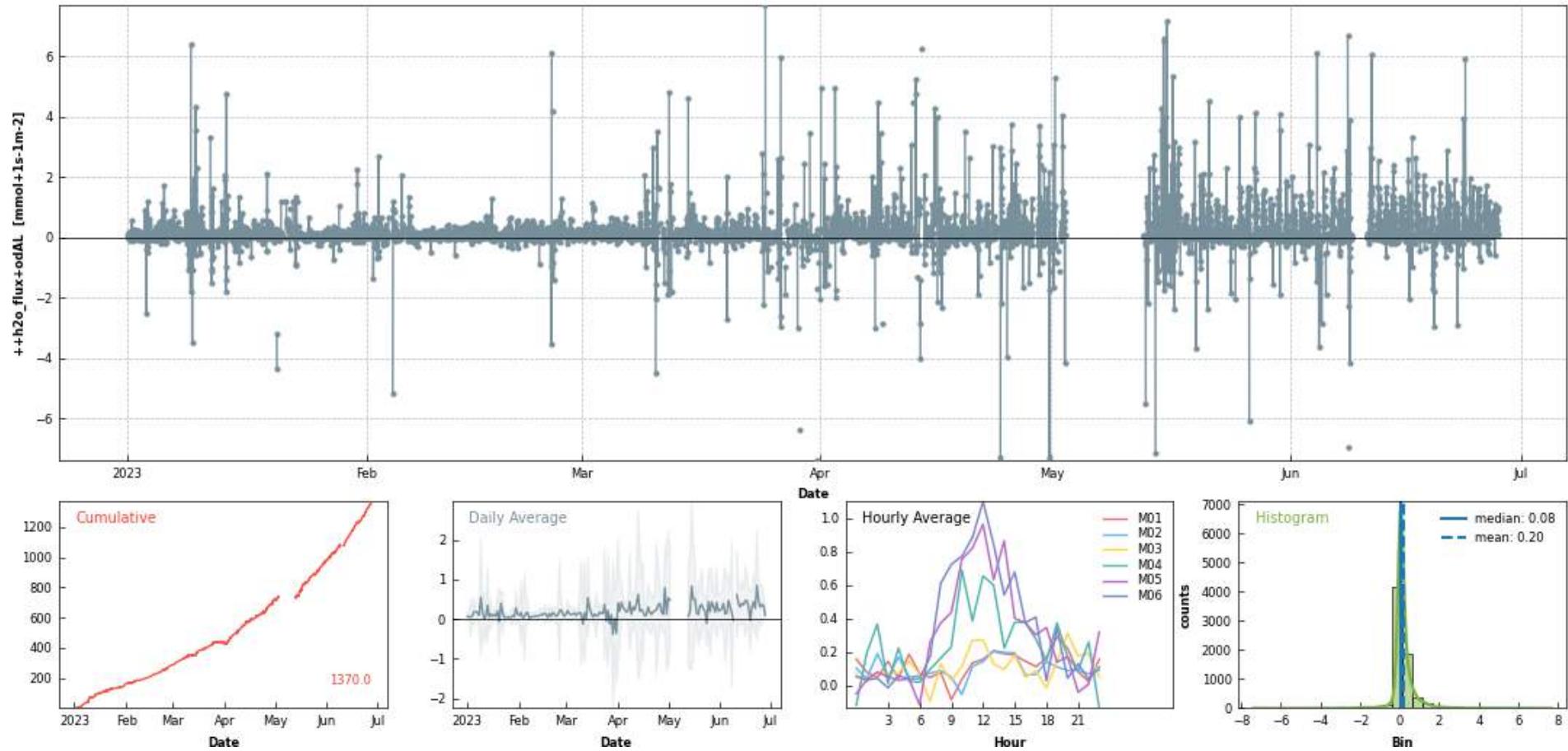




Photo: Luana Krebs



Manual start of flux calcs did not work, but automatic fluxes worked



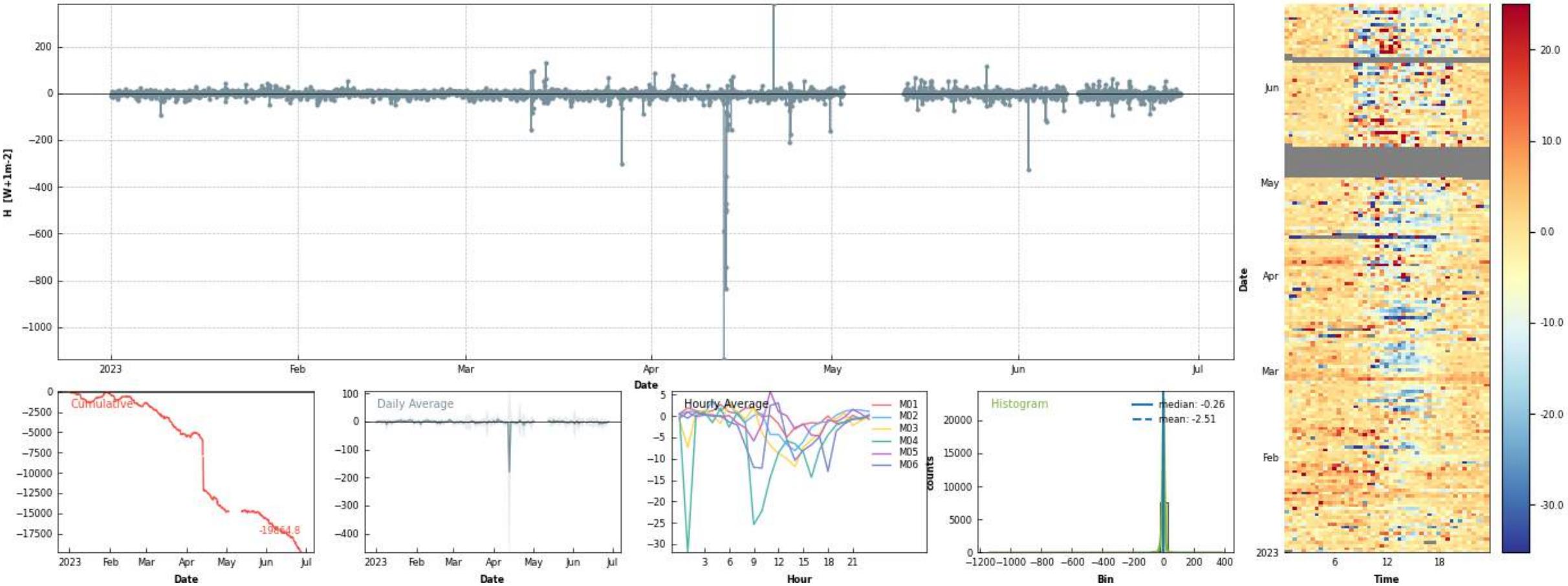
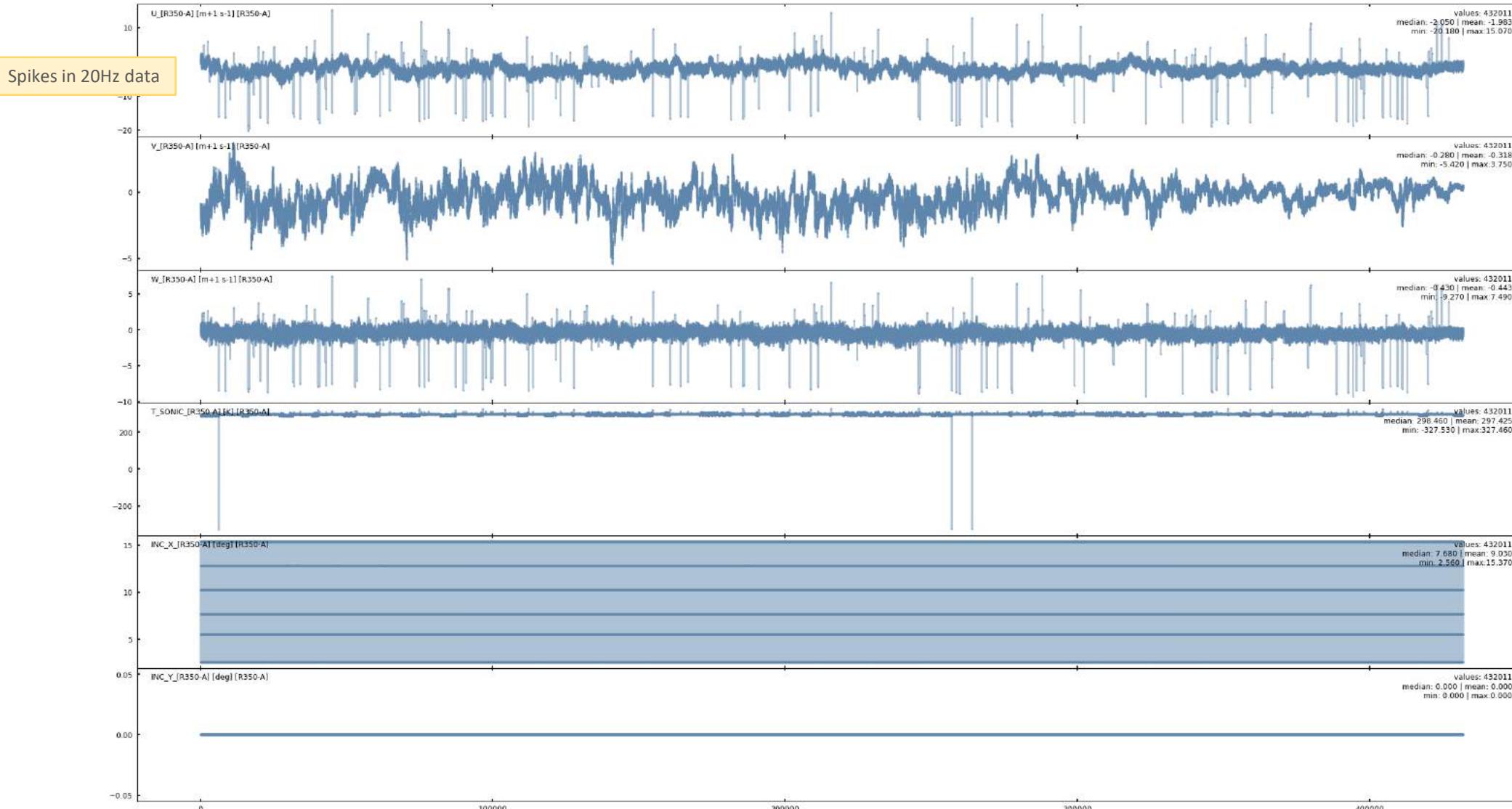




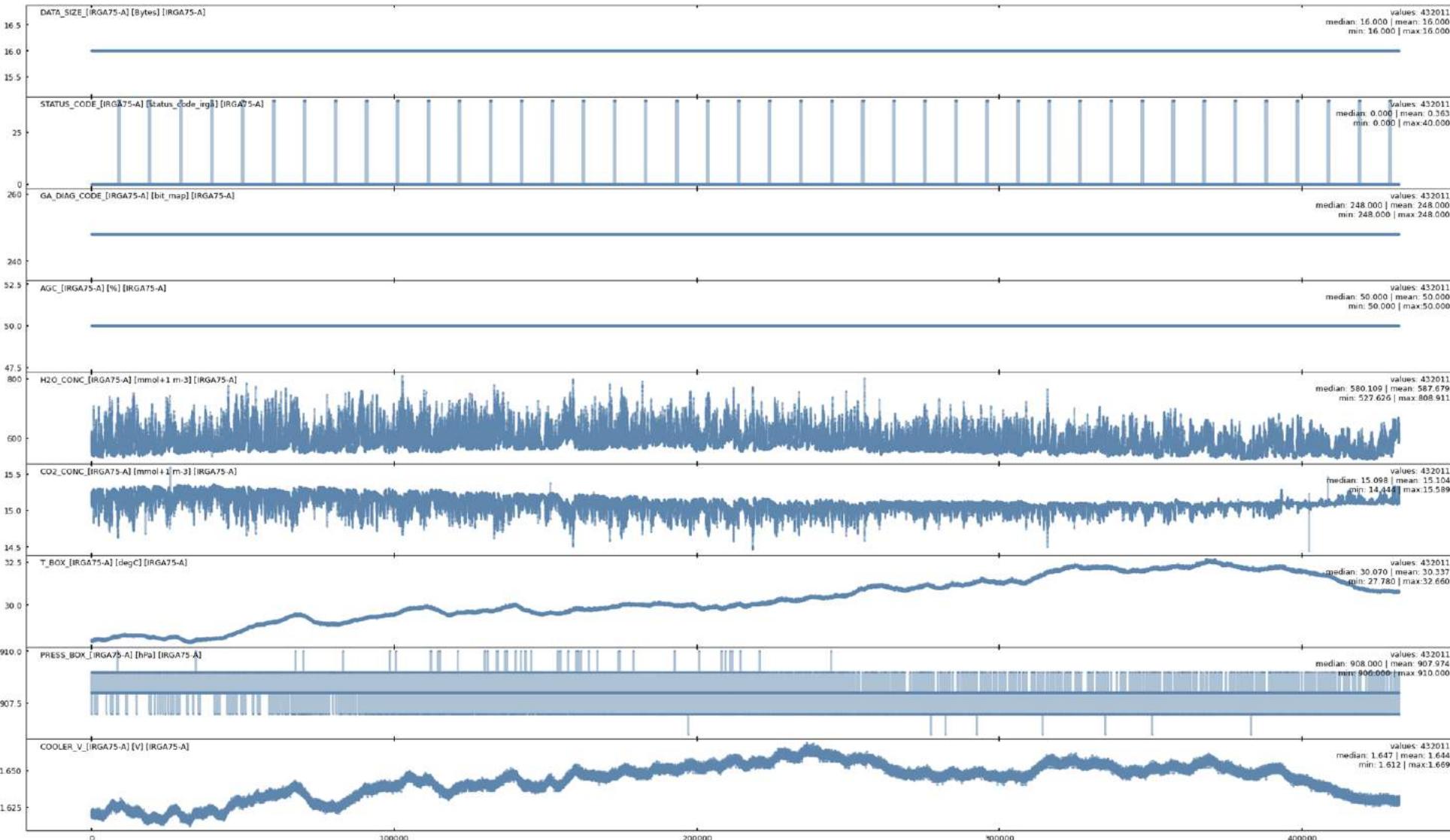


Photo: Lukas Hörtnagl

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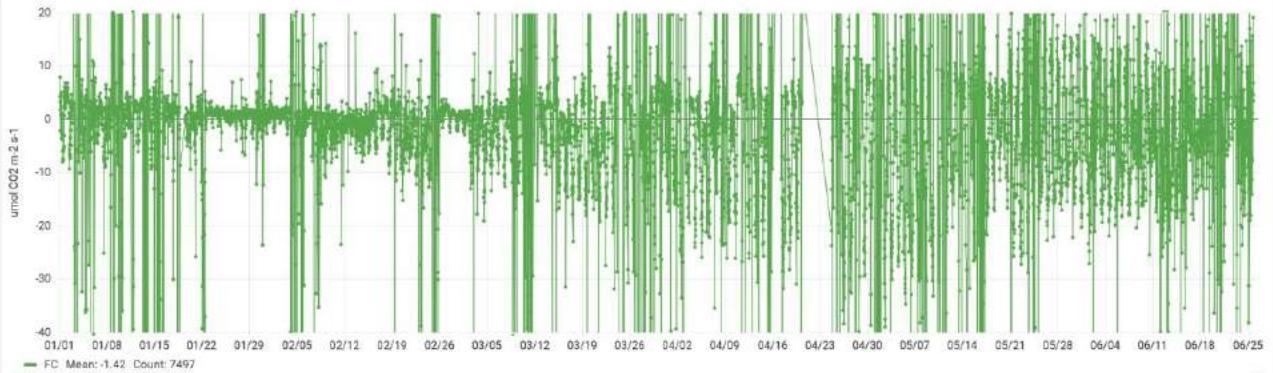
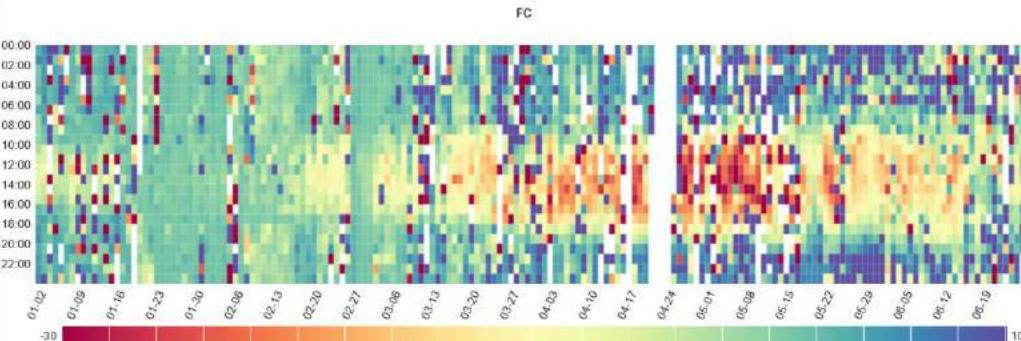


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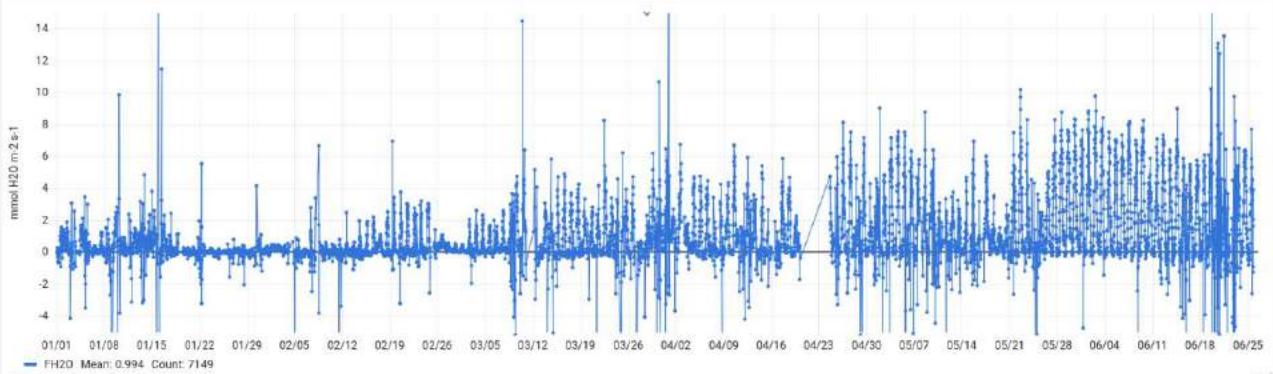
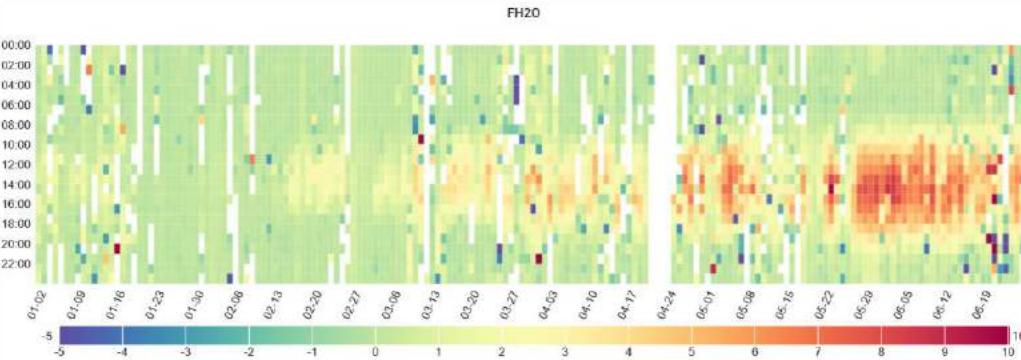


**FC**

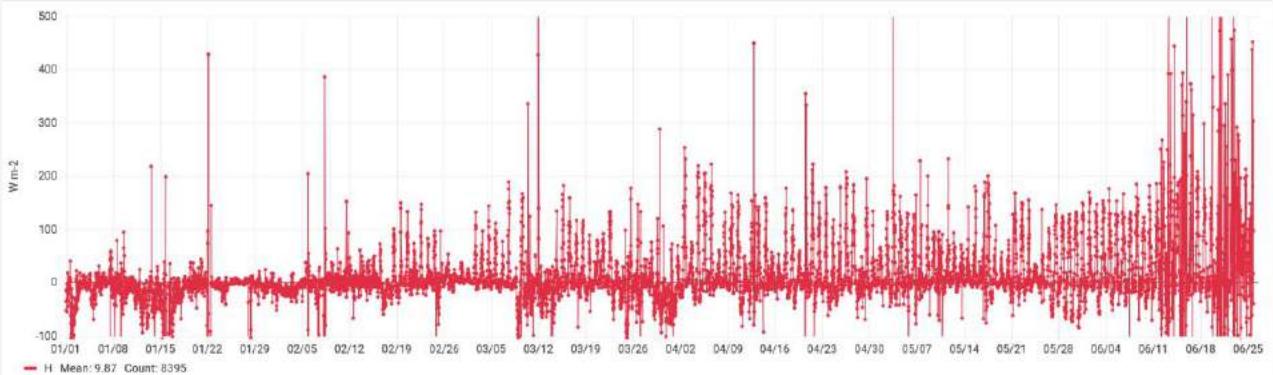
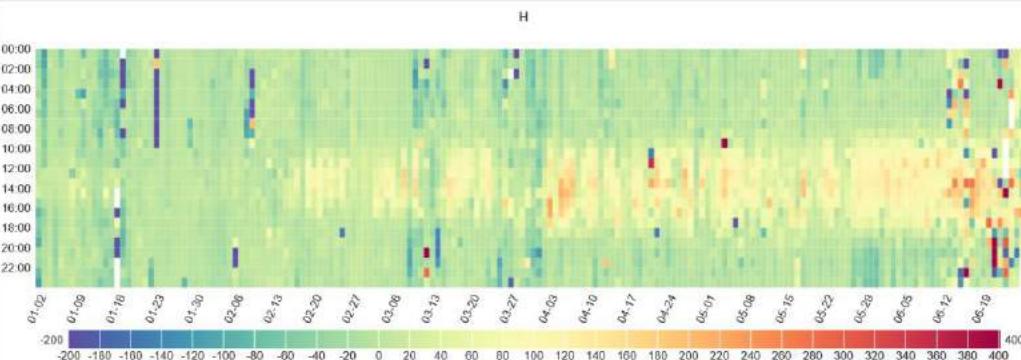
- Carbon Dioxide (CO<sub>2</sub>) turbulent flux (no storage correction)

**FC****FH2O**

- Corrected water flux (no storage correction)

**FH2O****H**

- Corrected sensible heat flux (no storage correction)

**H**

No quality checks applied

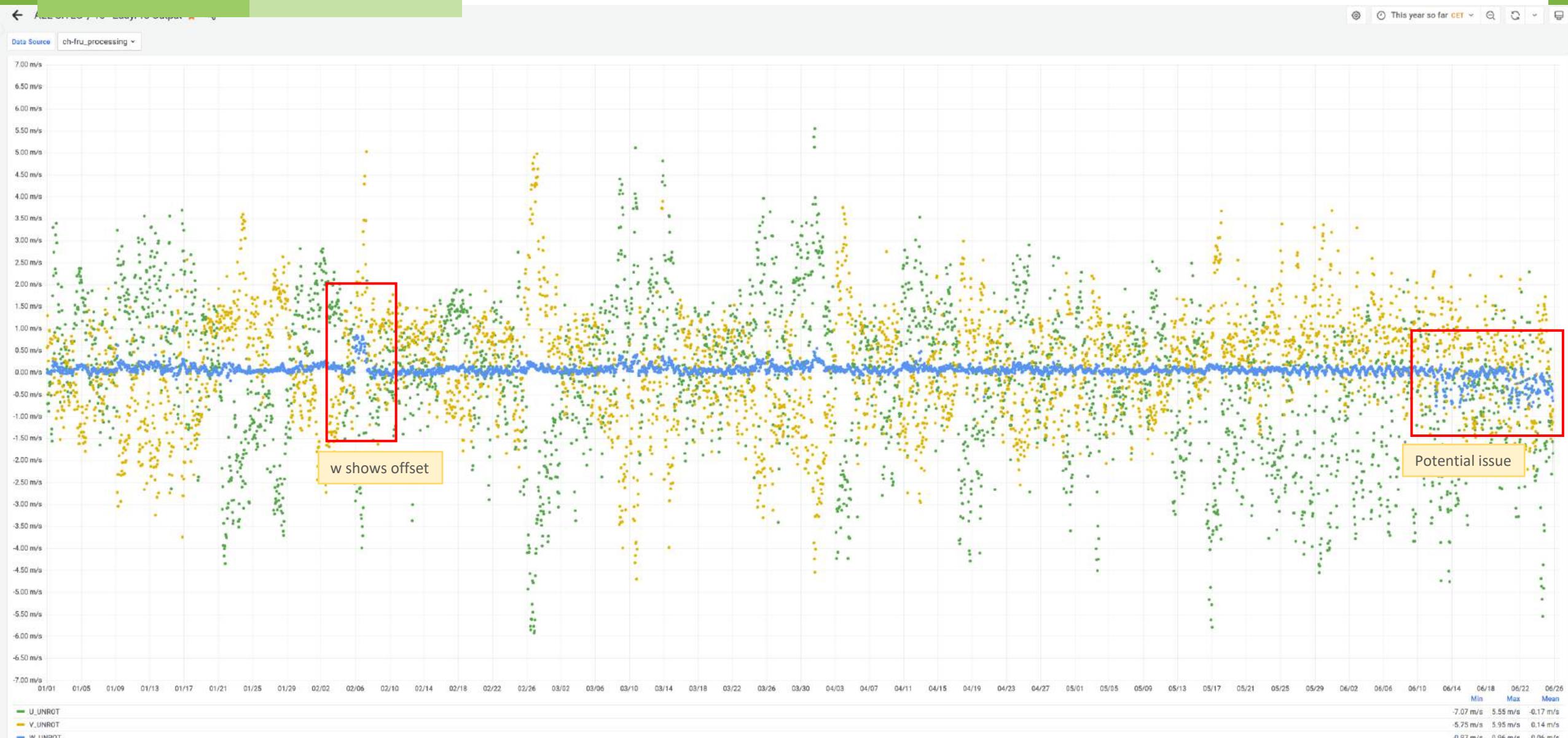
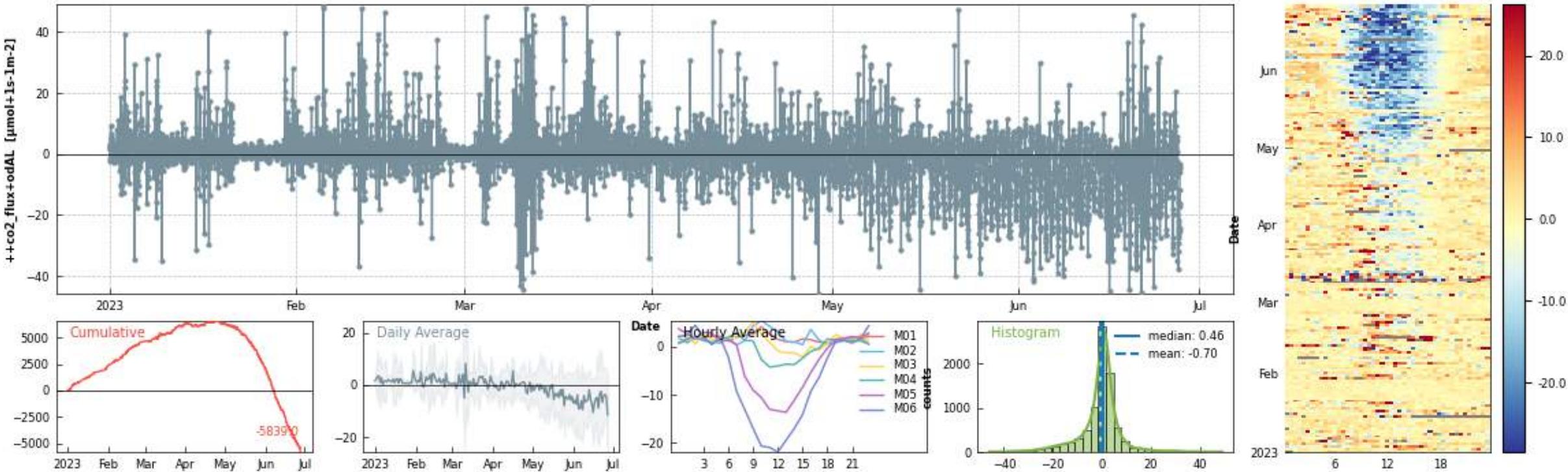
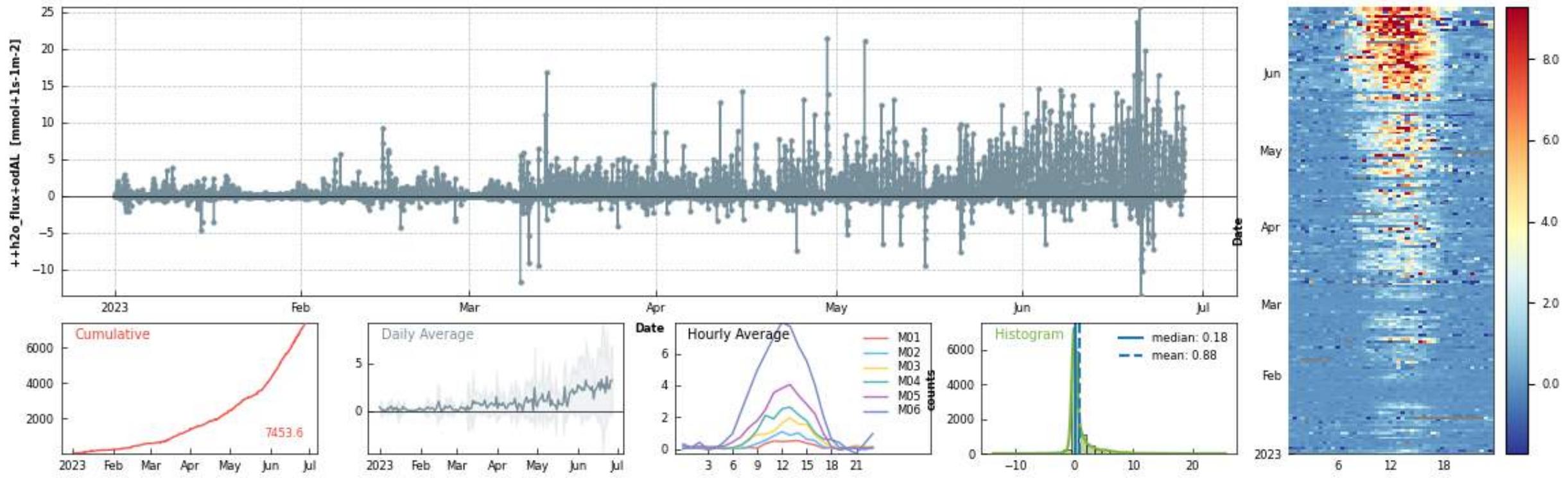
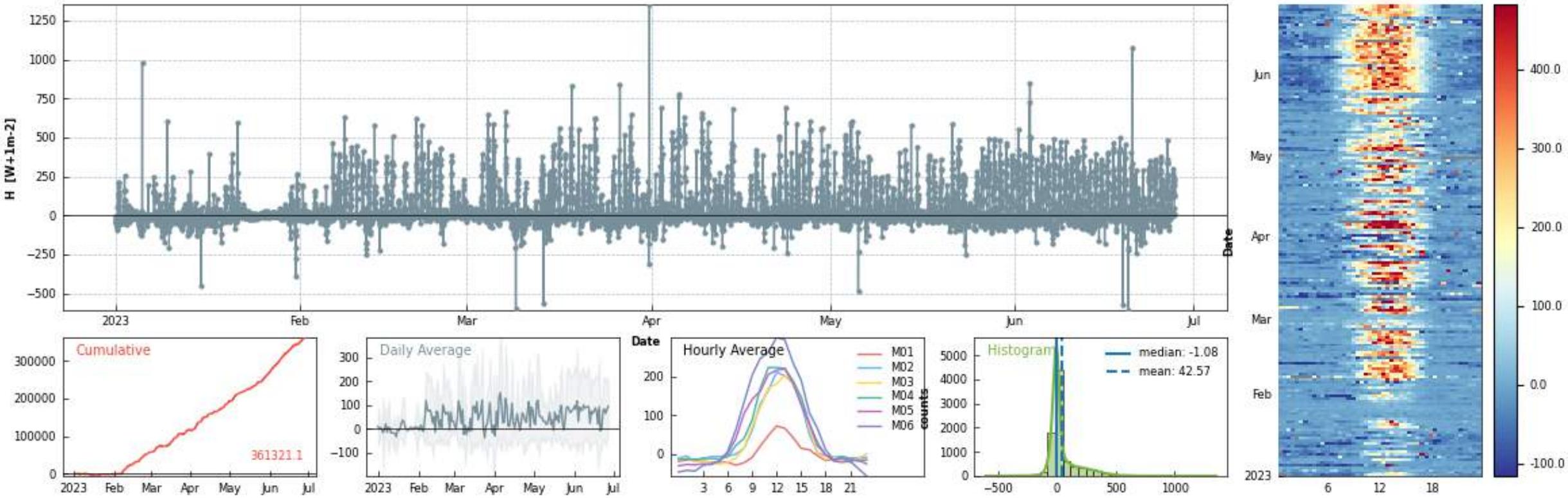


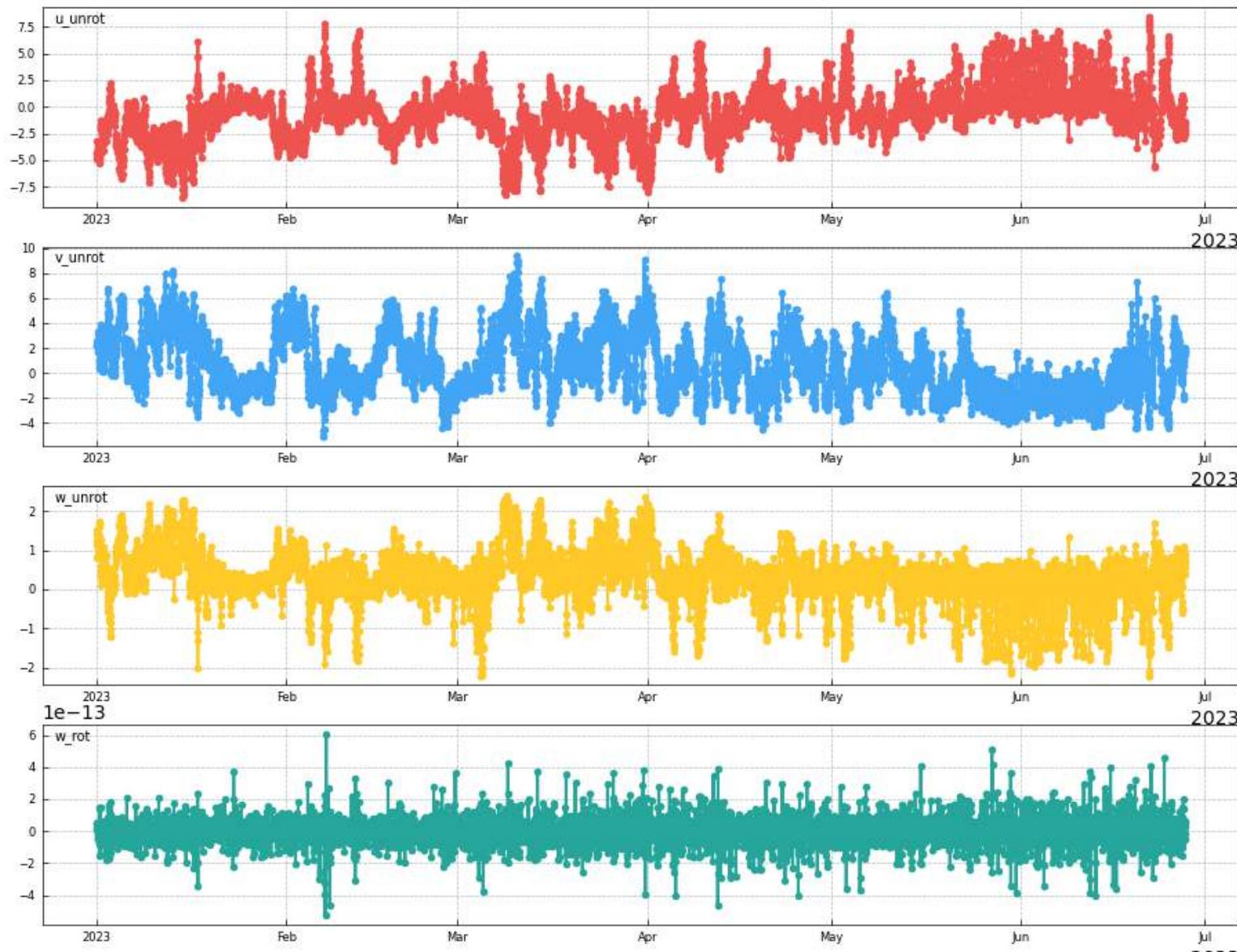


Photo: Markus Staudinger

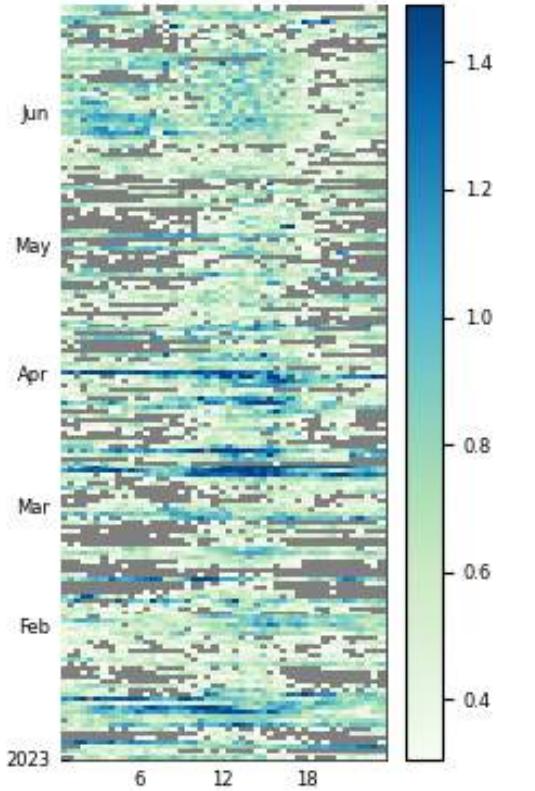
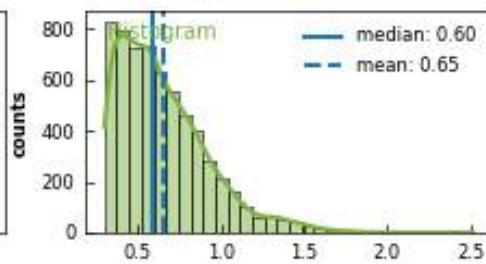
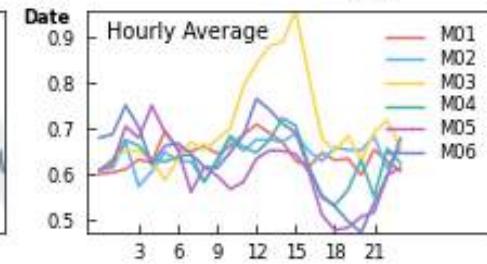
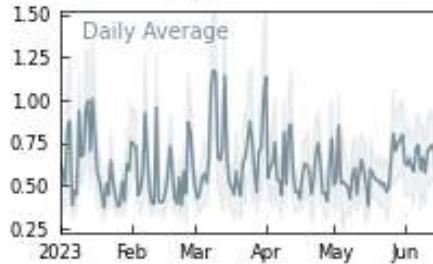
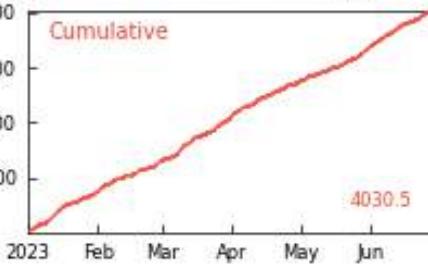
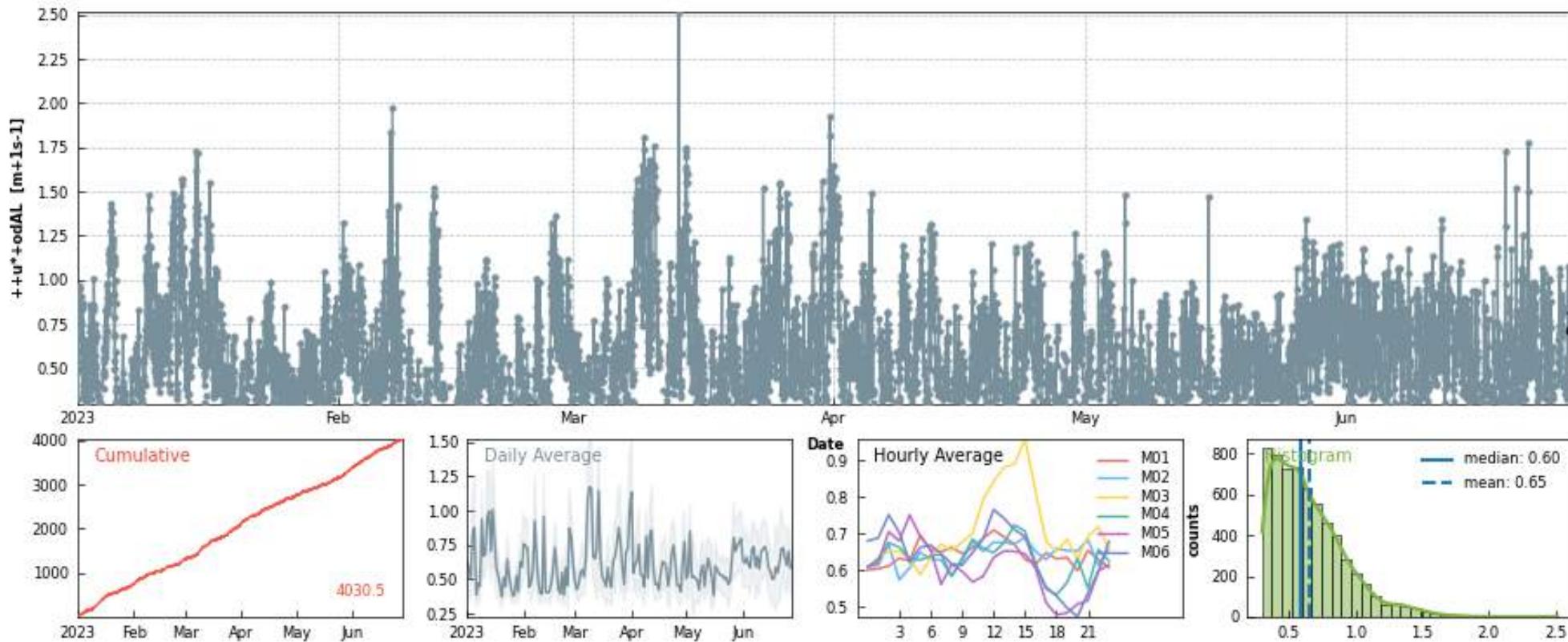


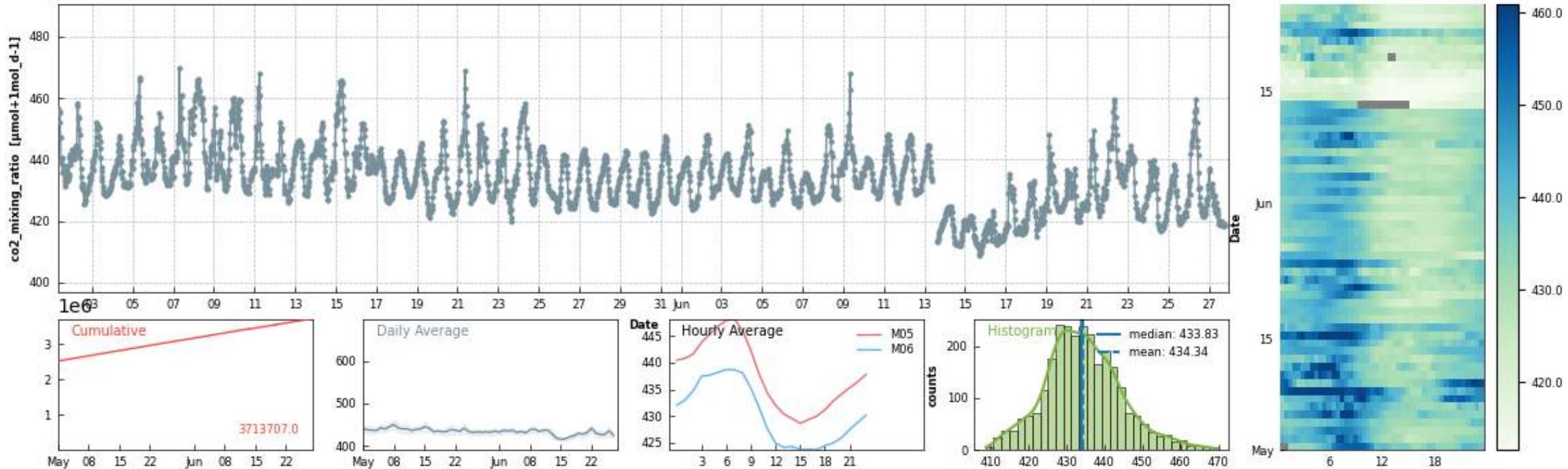




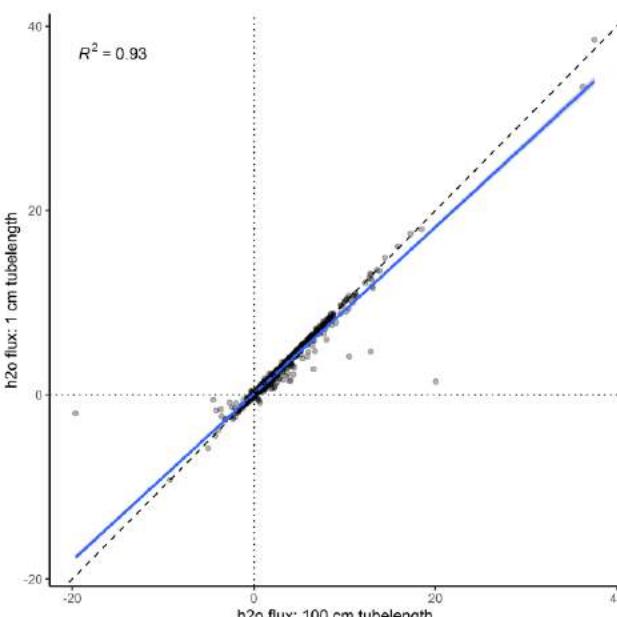
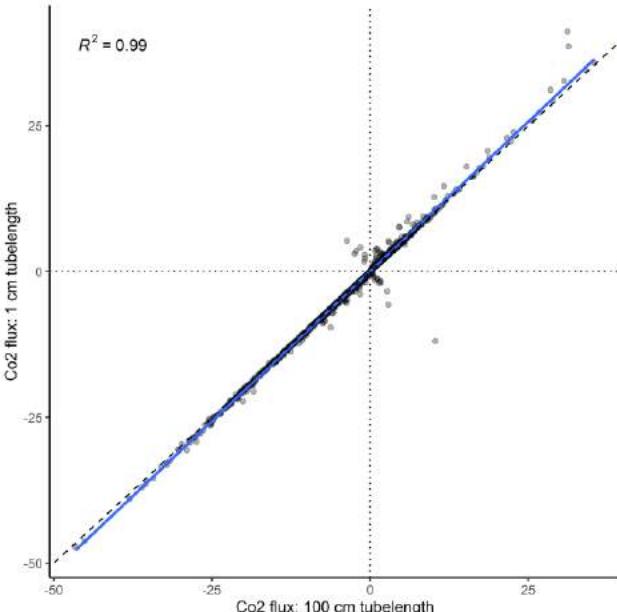
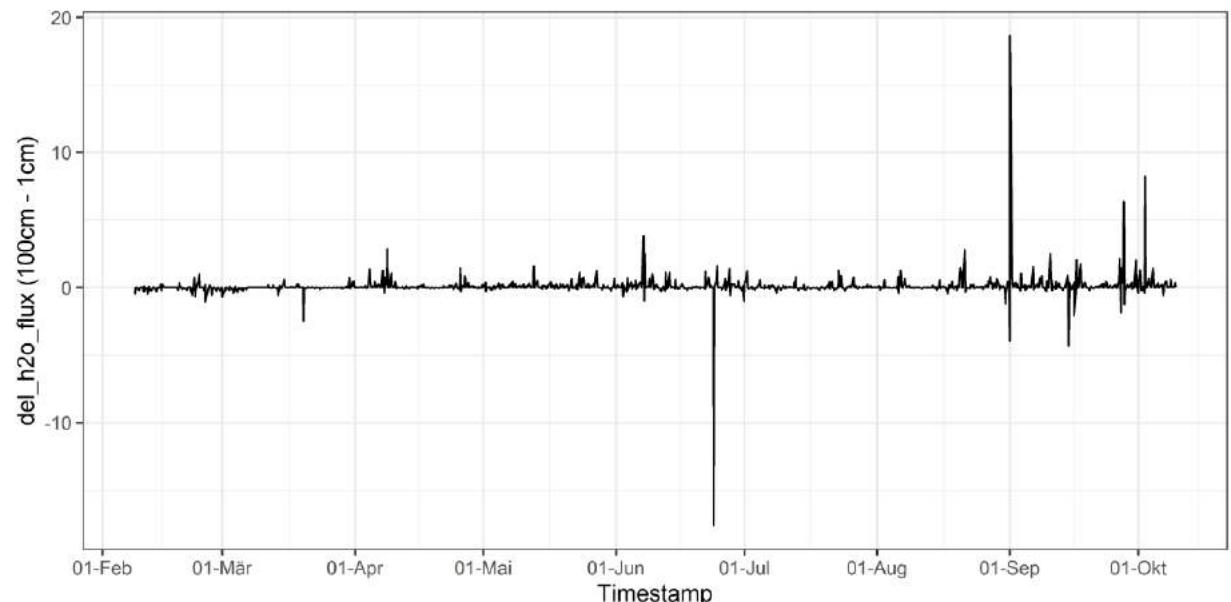
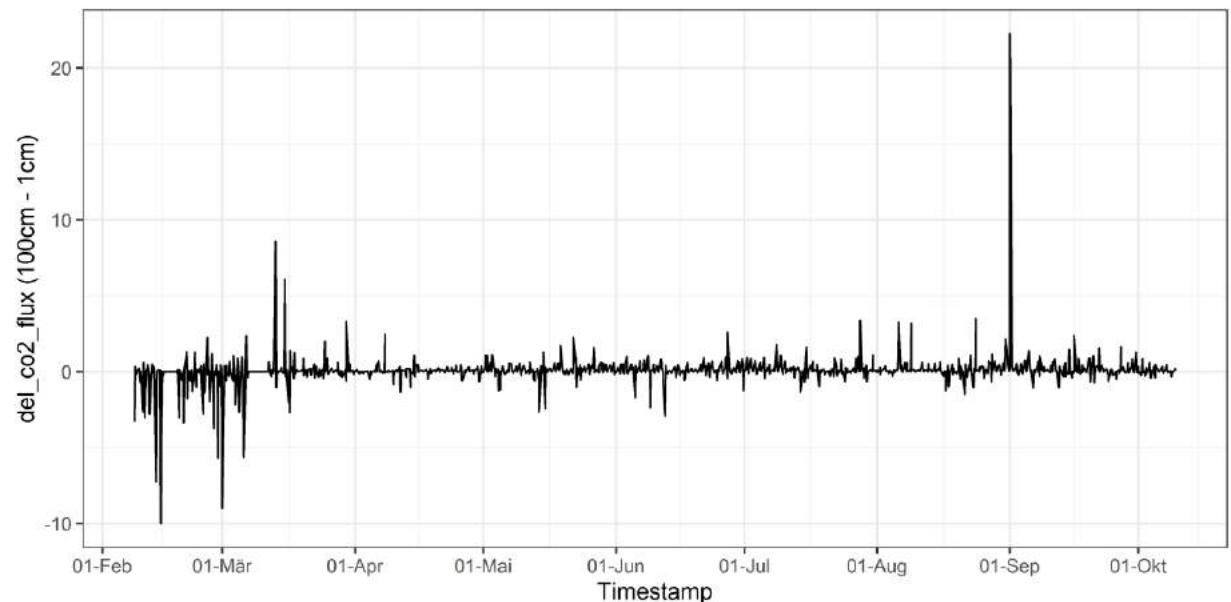


- Ustar values > 0.3 m/s





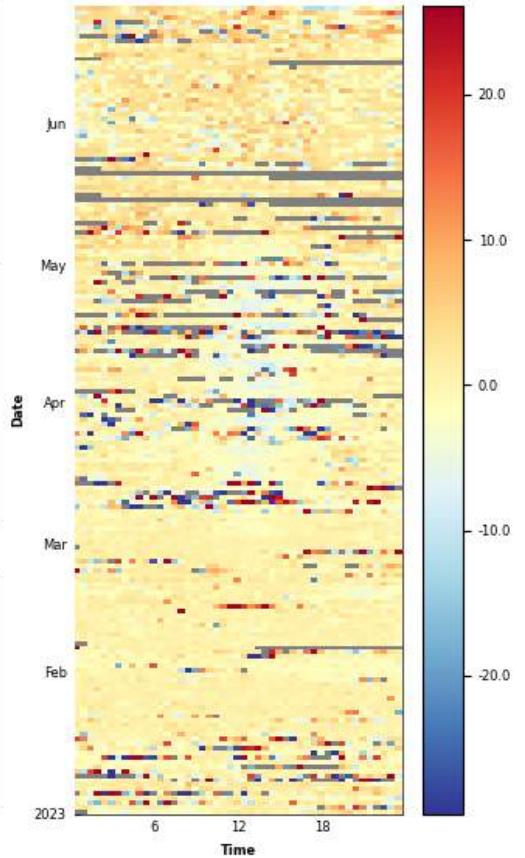
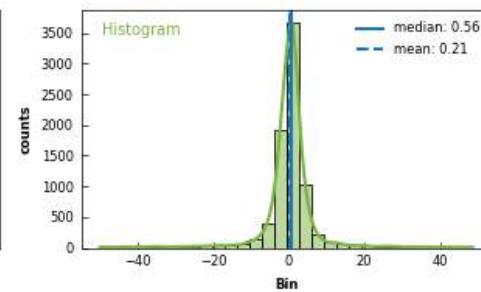
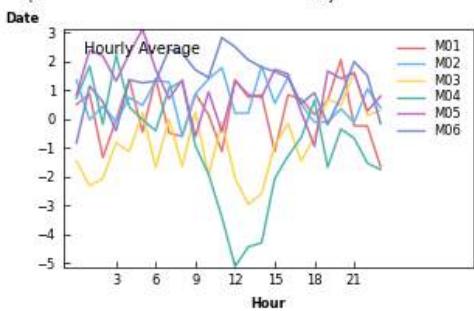
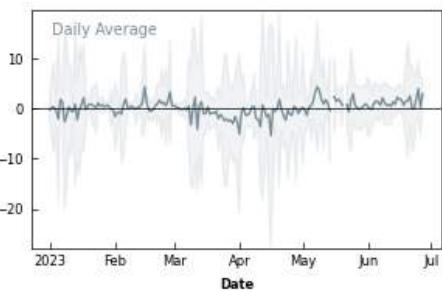
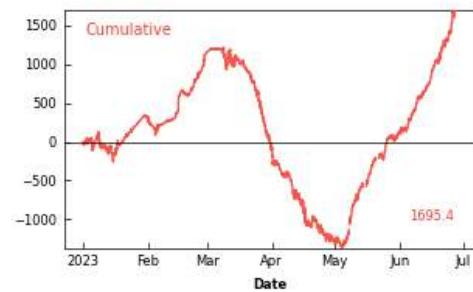
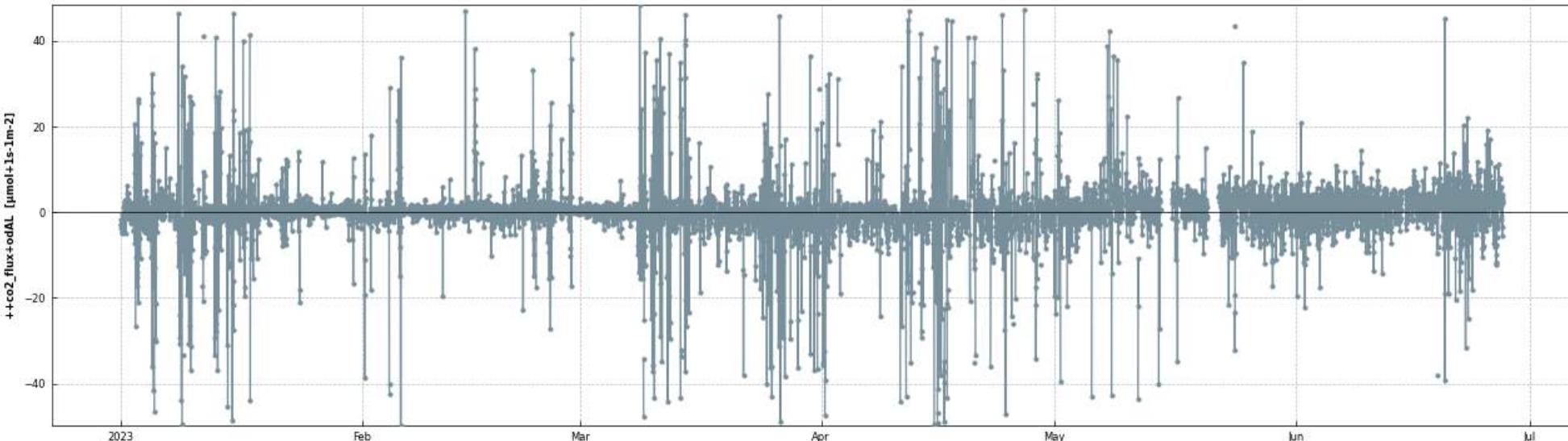
1	
Manufacturer	LI-COR
Model	LI-7200
Embedded software version	?
Instrument ID	IRGA72-A
Tube length	1.0 [cm] <span style="border: 2px solid black; padding: 2px;"> </span>
Tube inner diameter	5.3 [mm]
Nominal tube flow rate	12.0 [l/m]
Northward separation	6.00 [cm]
Eastward separation	-1.00 [cm]
Vertical separation	-15.00 [cm]
Longitudinal path length	?

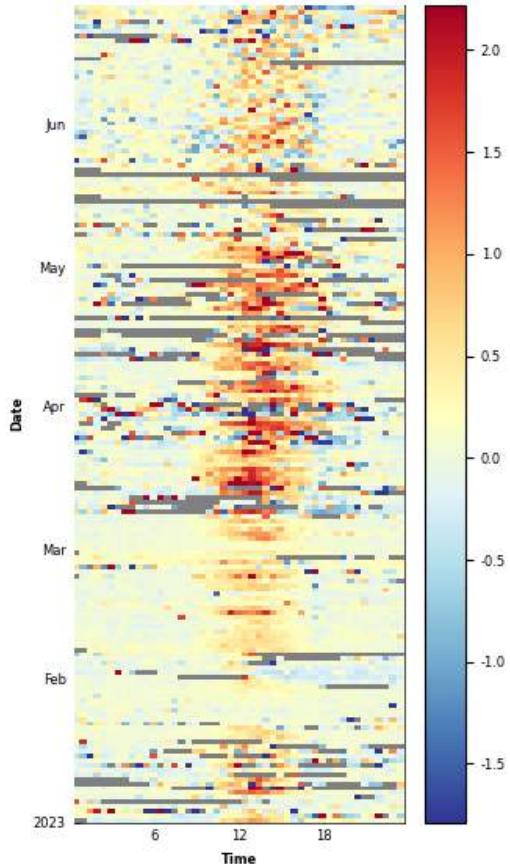
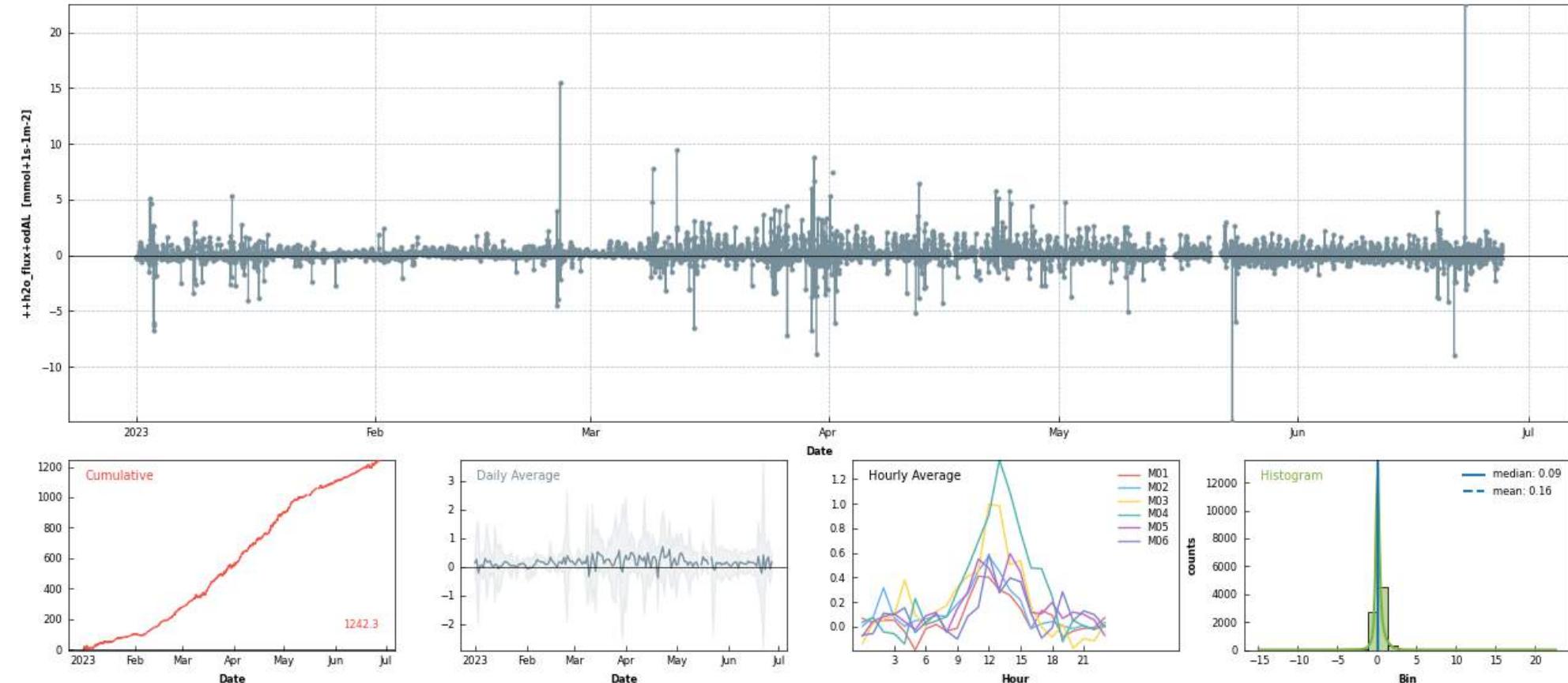


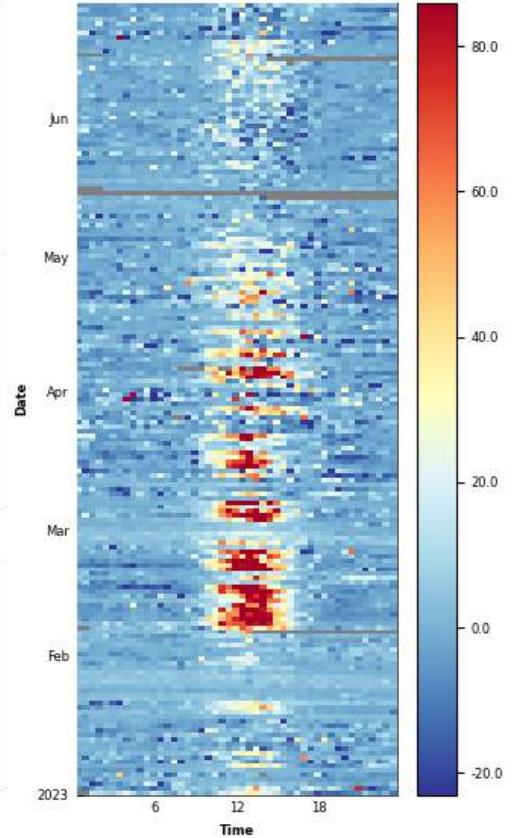
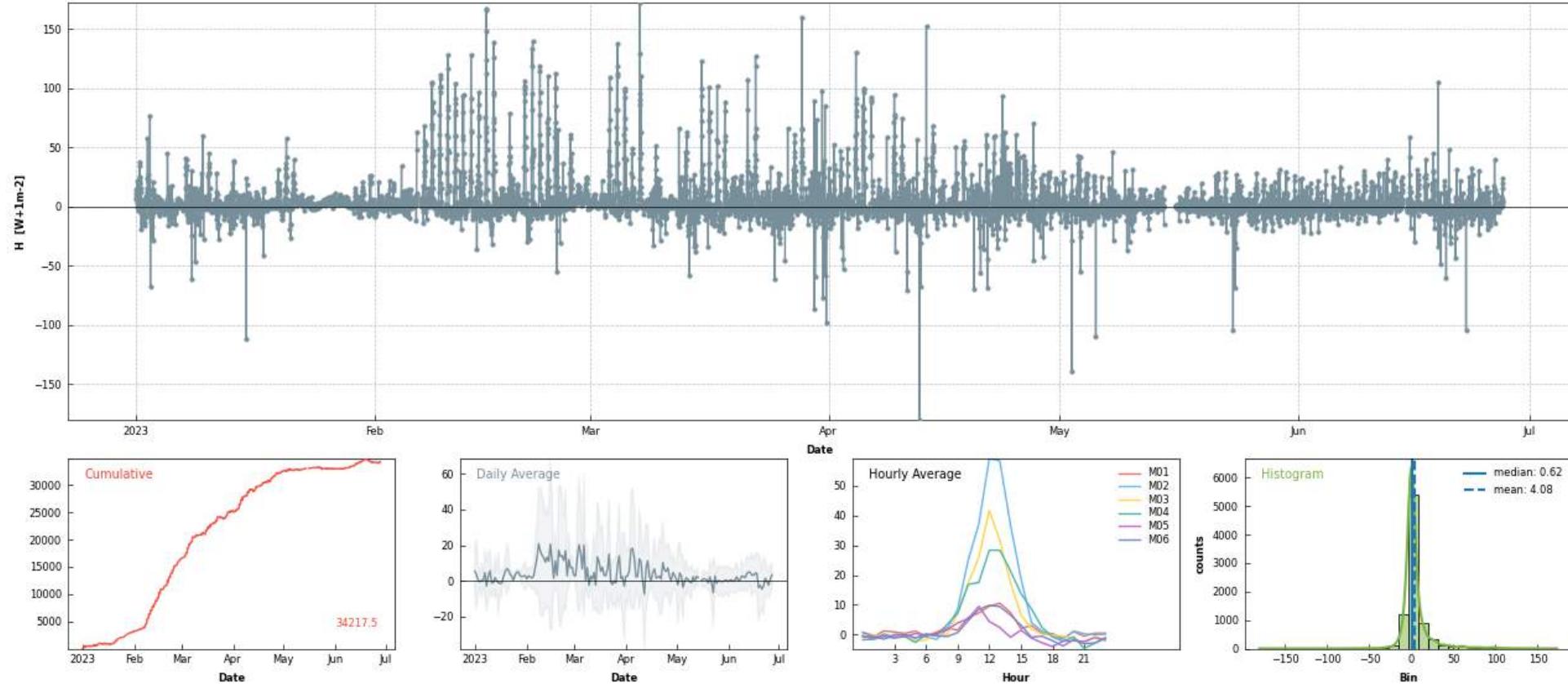
- Median error:  
 $\text{Co2\_flux} = 0.01720$   
 $\text{h2o\_flux} = 0.001284$



Photo: ETH GL Group







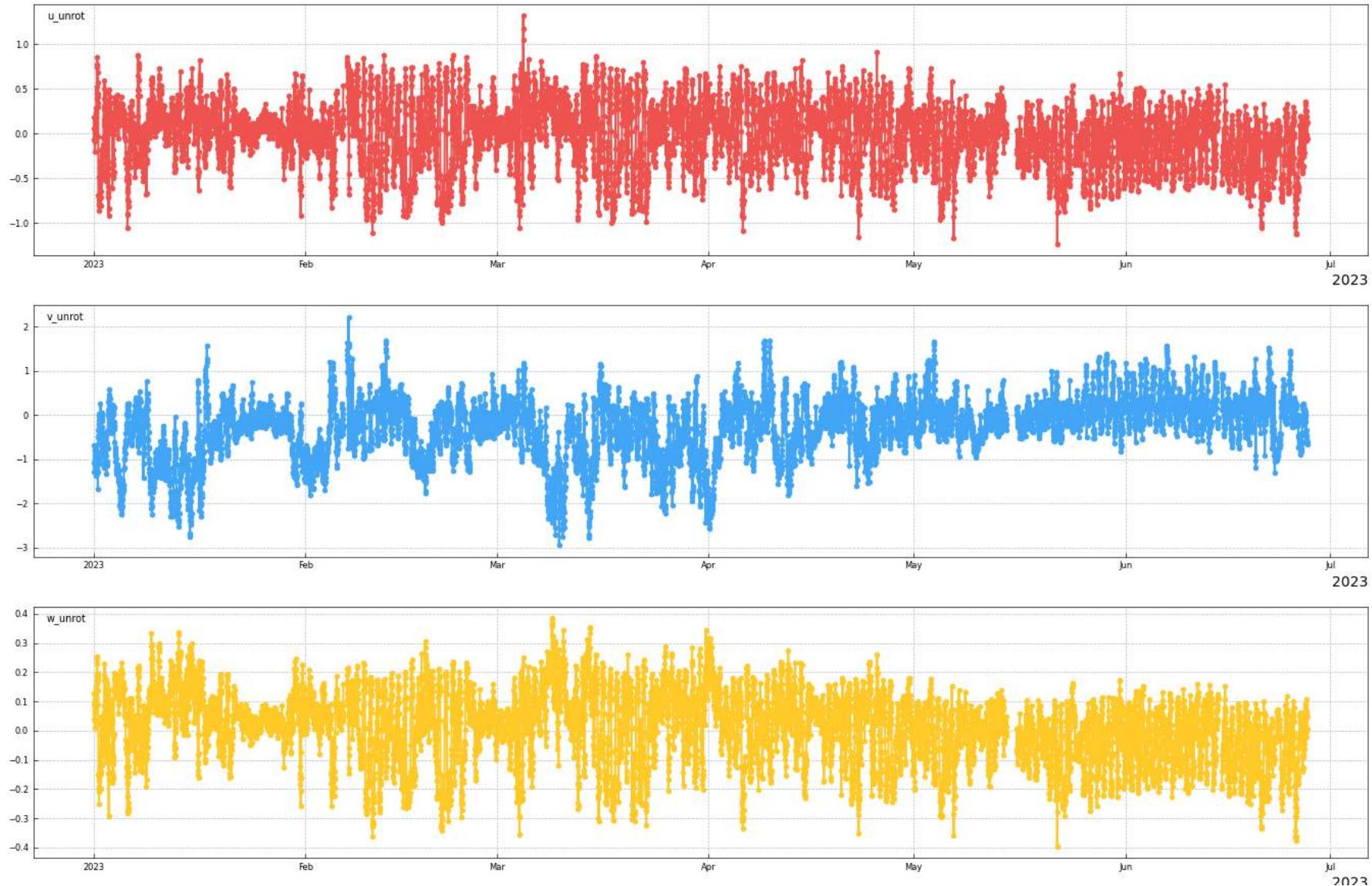




Photo: Regine Maier

