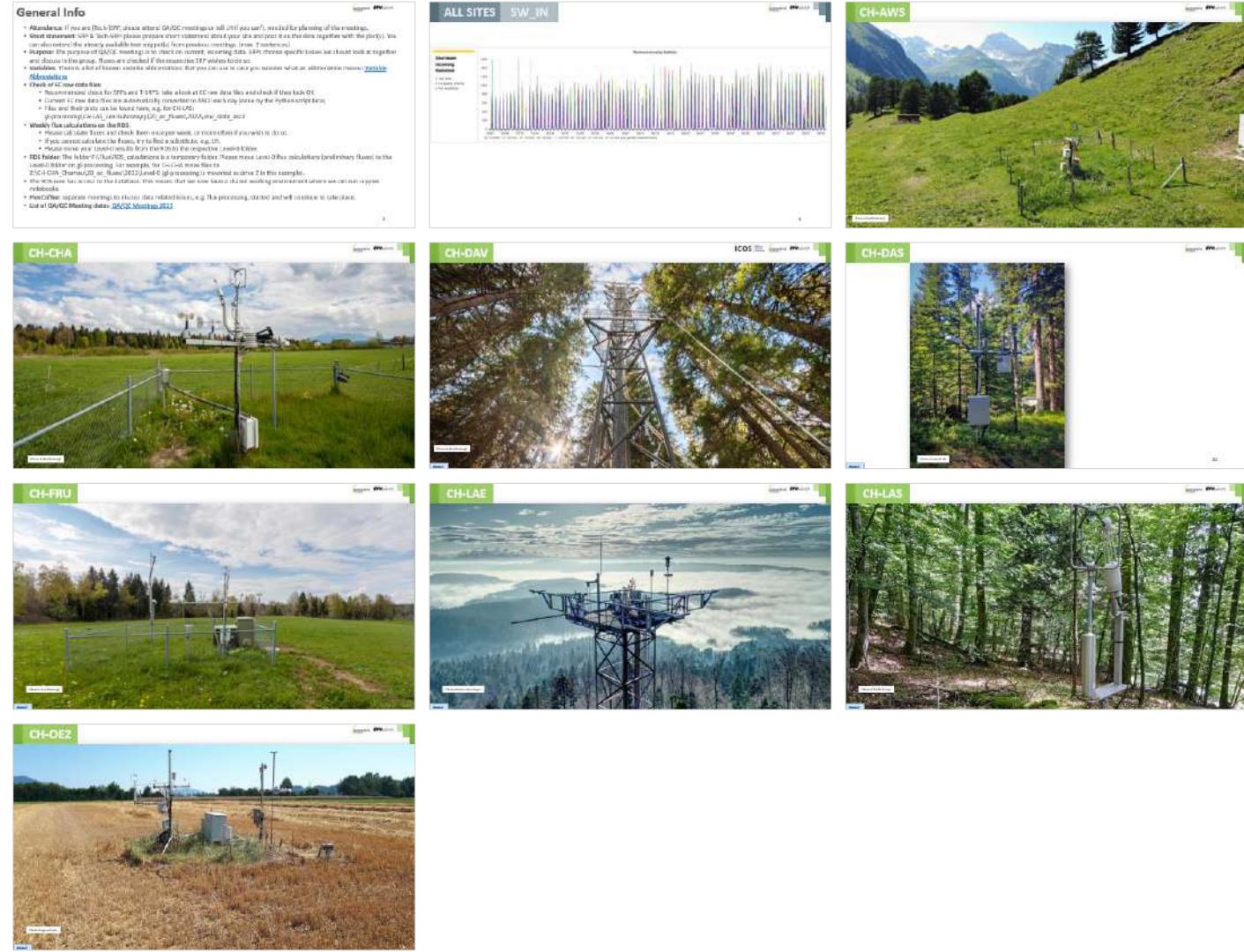


# QA/QC Meeting

## 1 June 2023

**Participants:** LH, IF, AS, PM, TB, MR, KMK, LK, PR, SO, LS, SB, YW (13)



# 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 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 Project Creation Basic Settings Advanced Settings Run Output Run Express Mode Advanced Mode Stop

**Processing Options**

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, Planar Fit Settings

Time lags compensation: Detrend method: Block average, Time constant: 250.0 [s], Time lag detection method: Covariance maximization with default, Time Lag Optimization Settings

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:  $T_{air} = 0.944 + T_s + 2.57$   
Top:  $T_{air} = 1.005 + T_s + 0.24$   
Span:  $T_{air} = 1.019 + T_s + 0.36$

Restore Default Values Default values as from Burba et al. (2008)

Other options

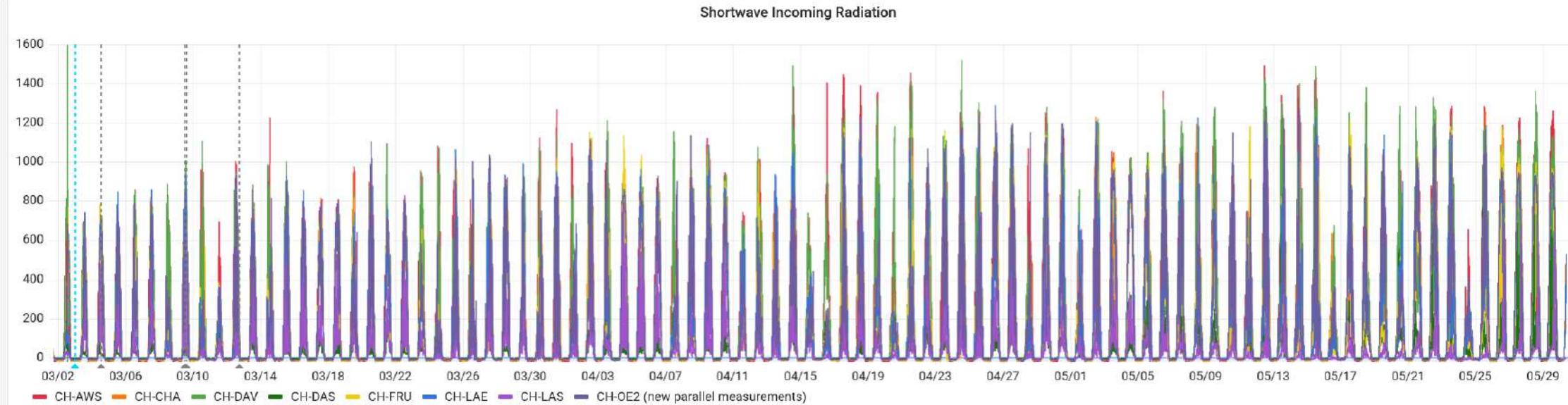
Quality check Flagging policy: Mauder and Foken (2004) (0-1-2 system)  
 Footprint estimation Footprint method: Kljun et al. (2004)

Restore Default Values

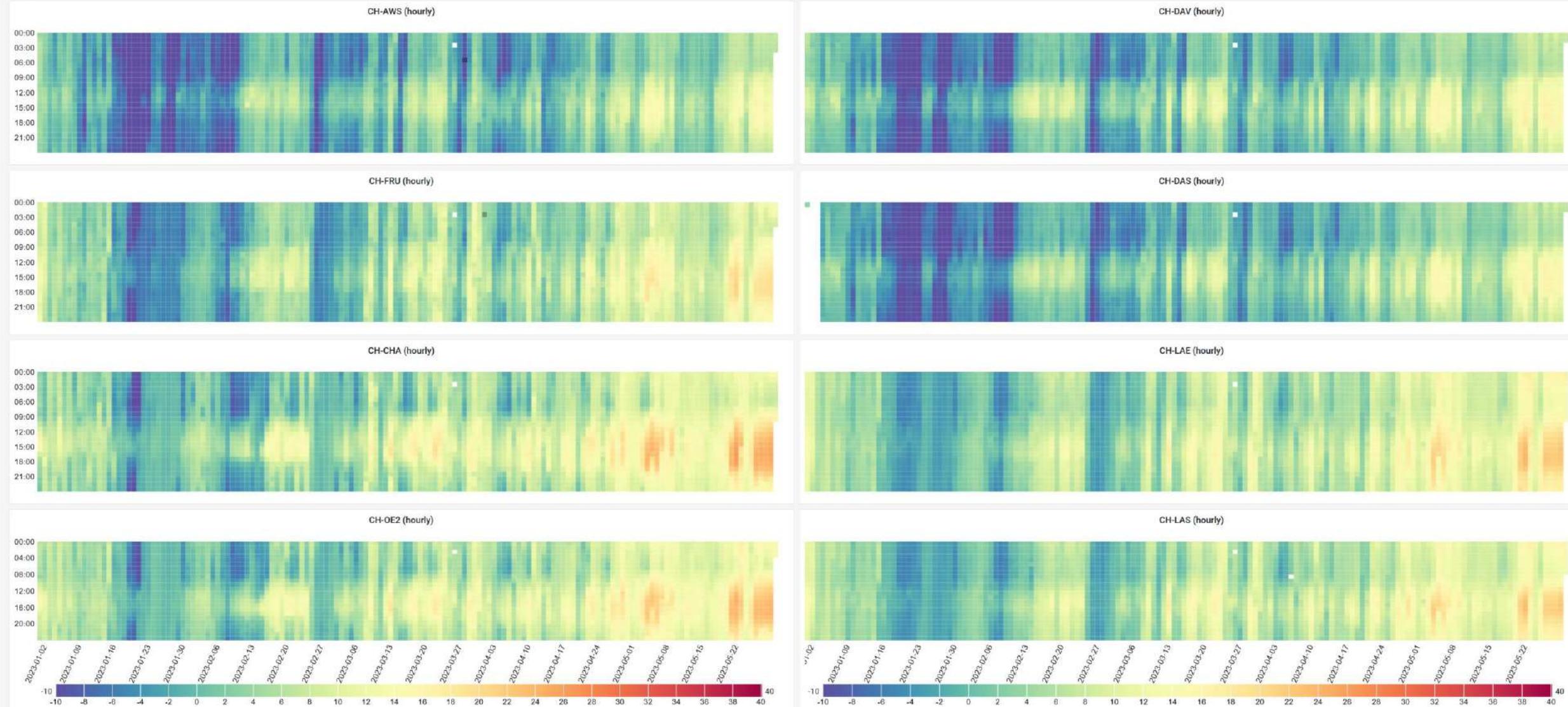
Maybe we can correct the the w offset issue during the affected time periods with this setting here?

**Shortwave  
Incoming  
Radiation**

- raw data
- no quality checks
- full resolution



### Air Temperature: This year so far ...



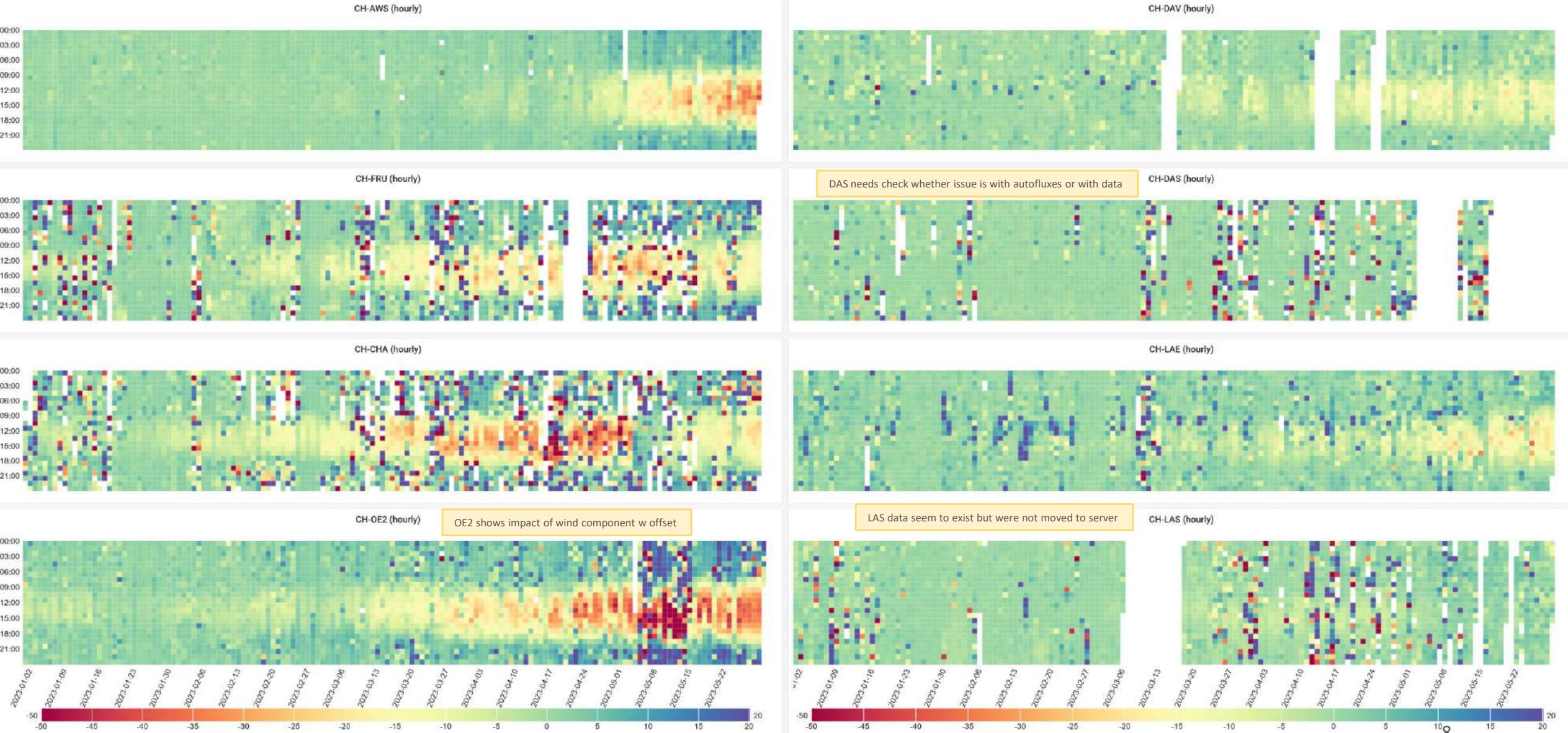
## ALL SITES

## CO2 Fluxes

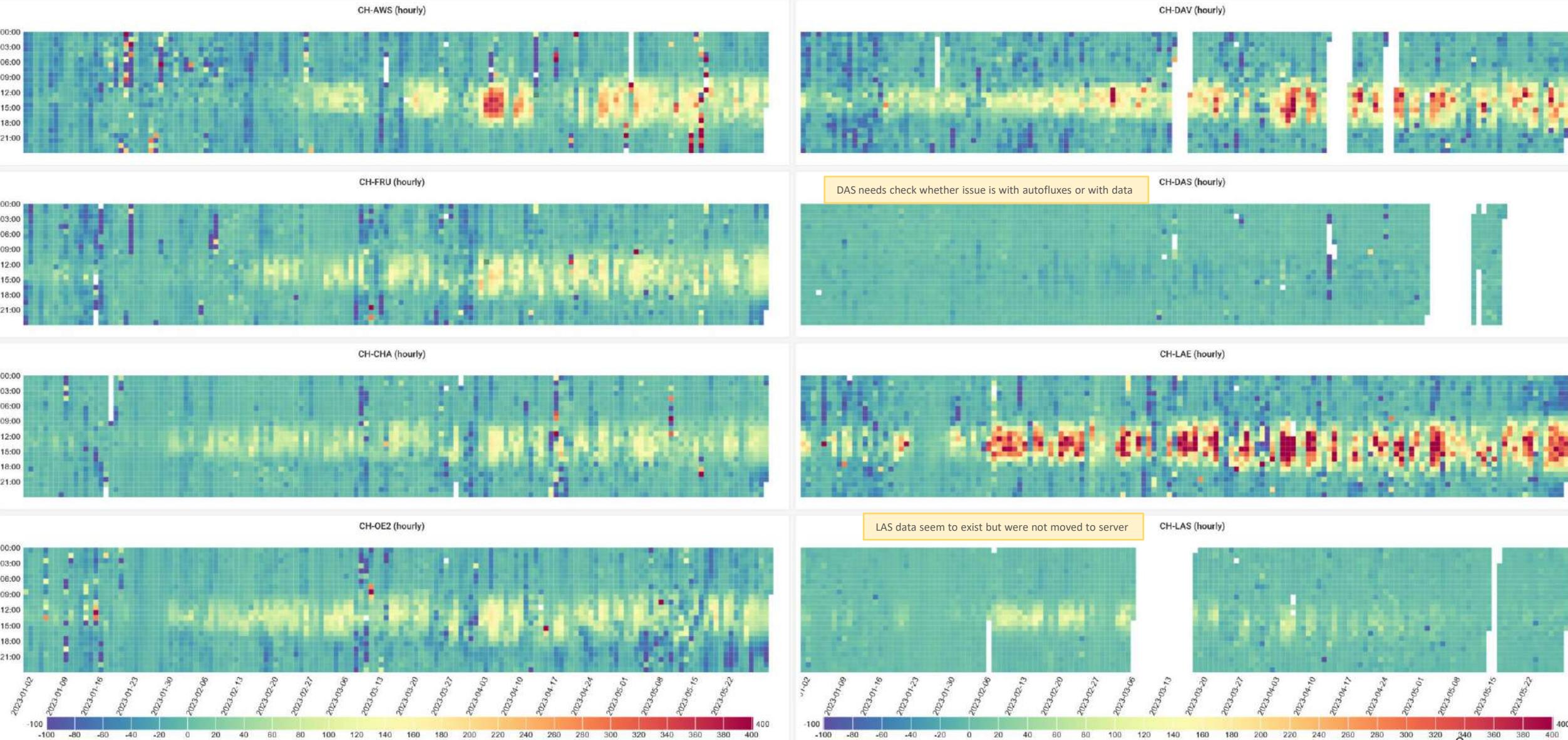
All

CO2 flux: This year so far ...

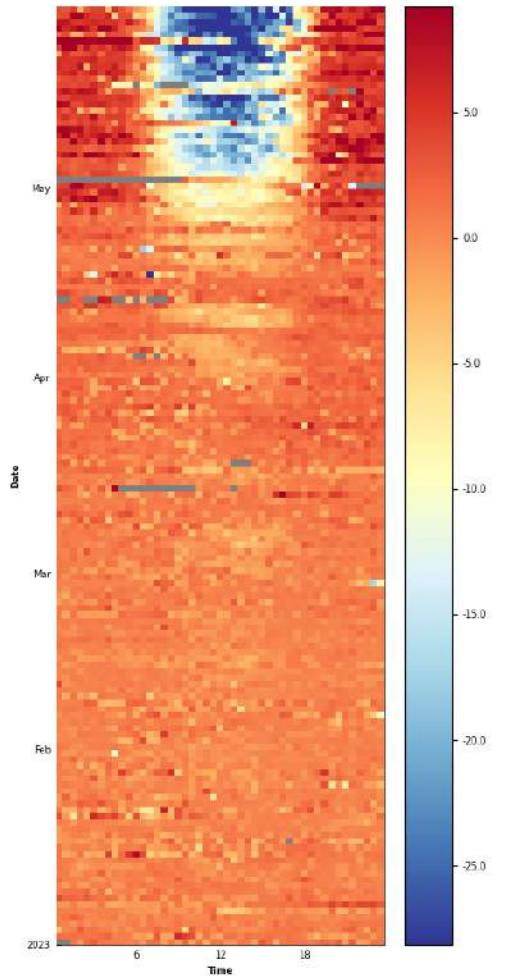
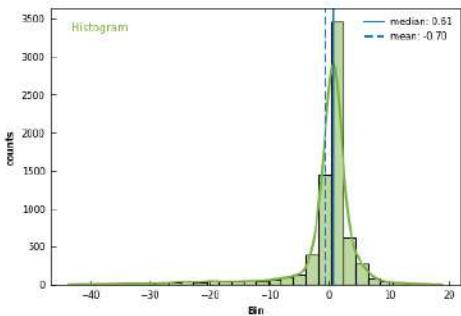
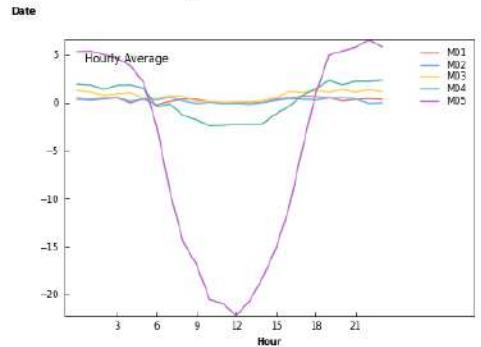
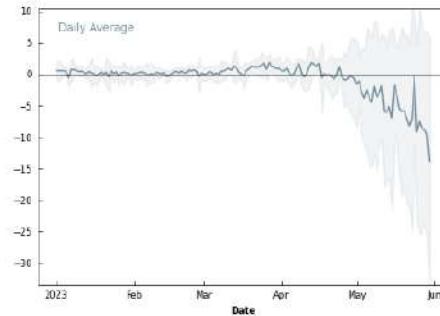
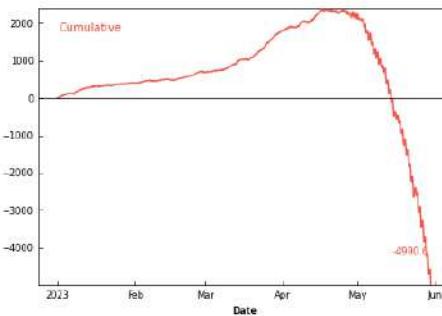
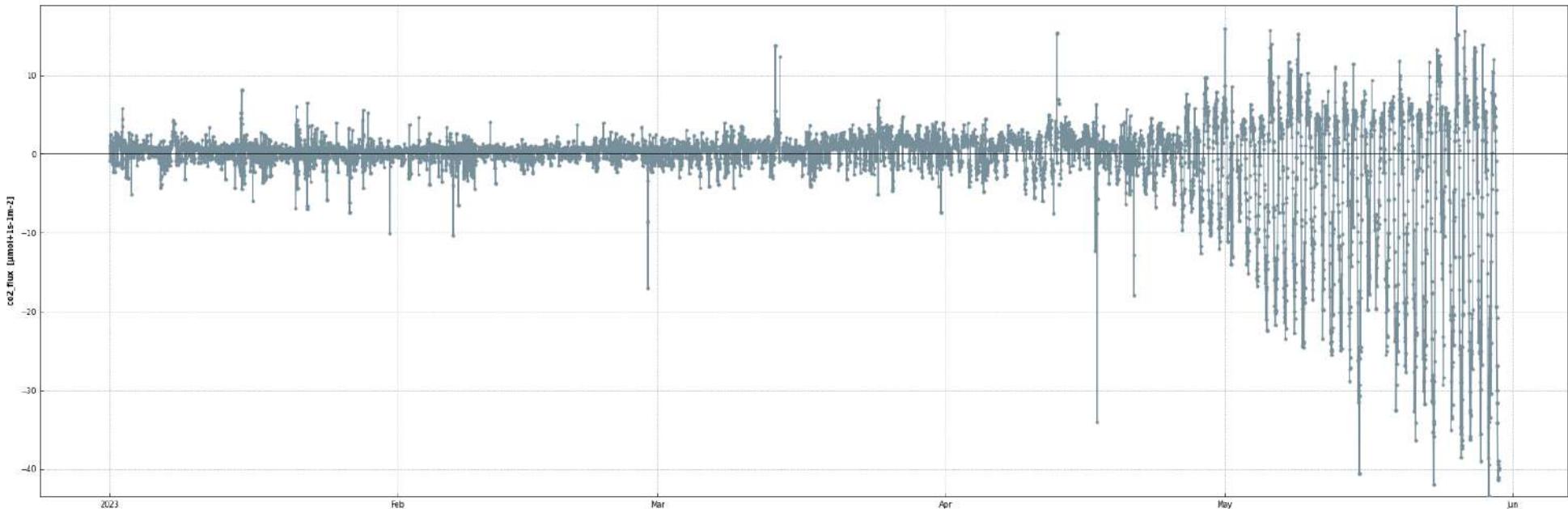
This year so far CET

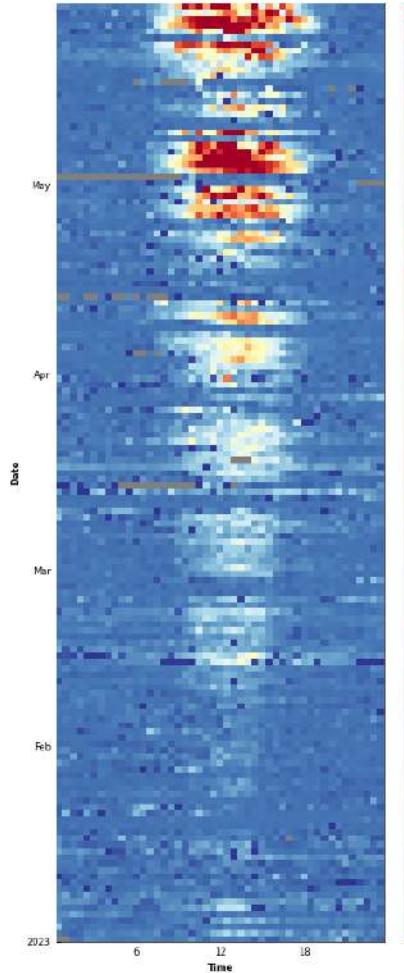
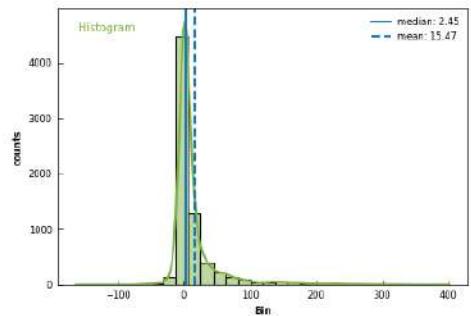
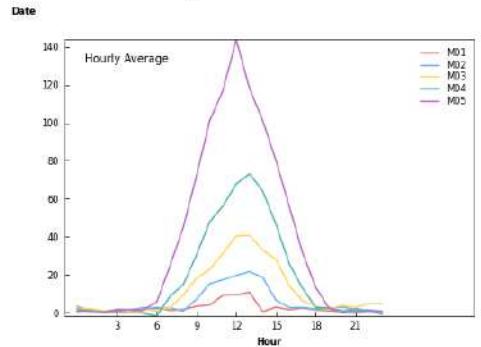
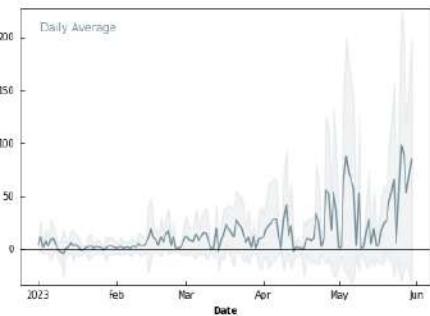
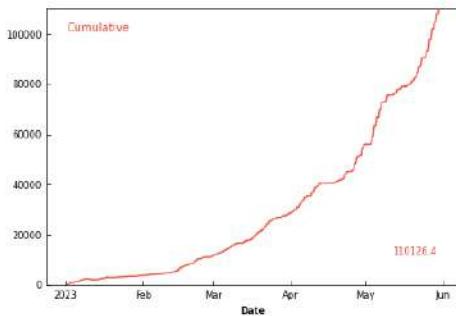
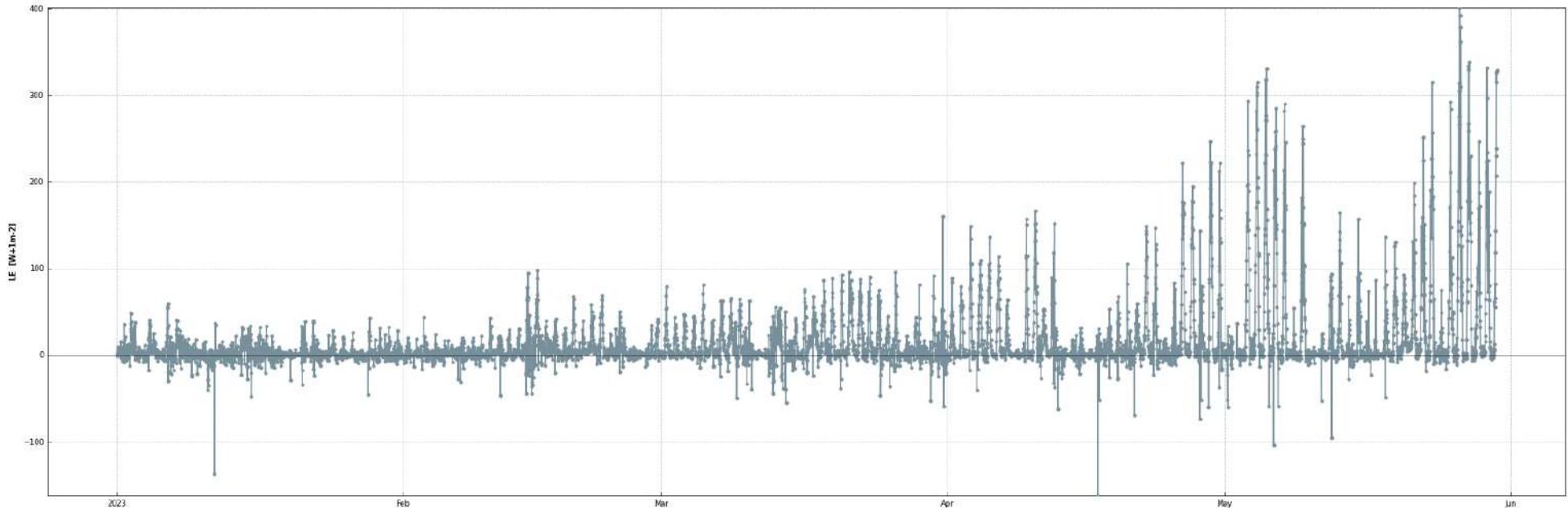


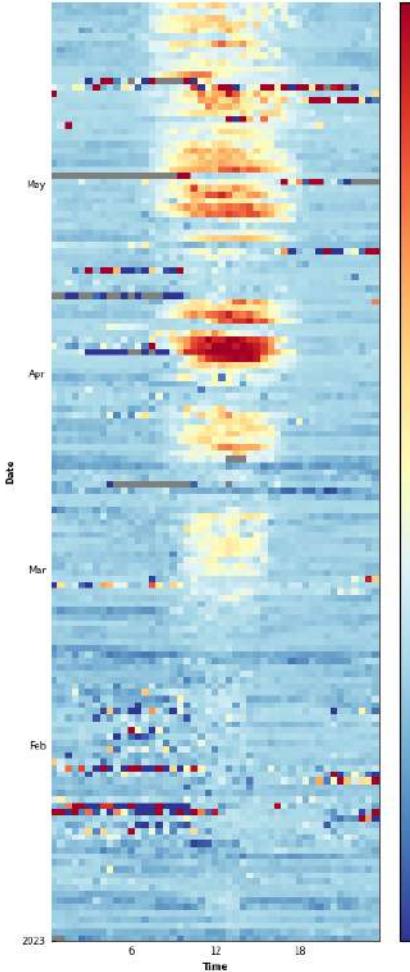
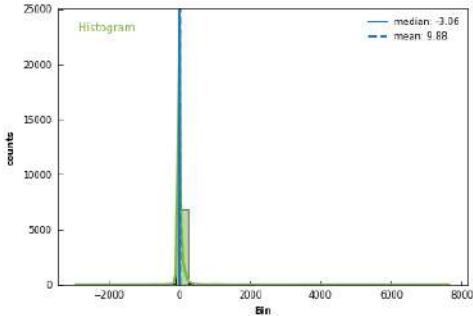
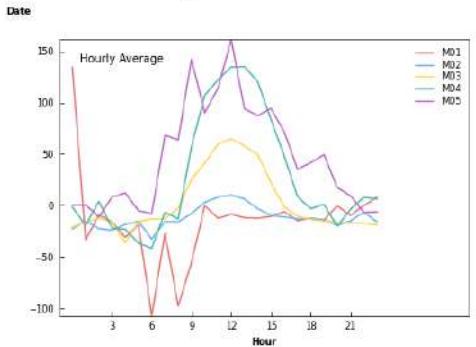
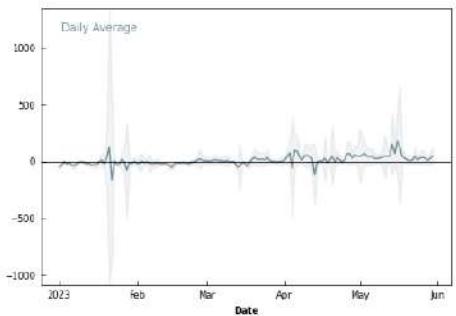
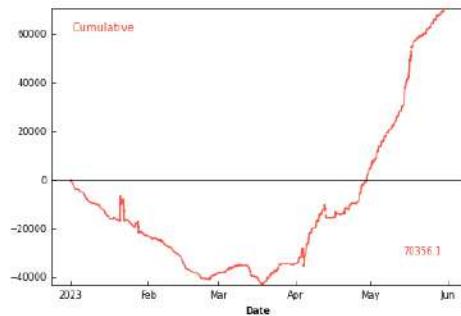
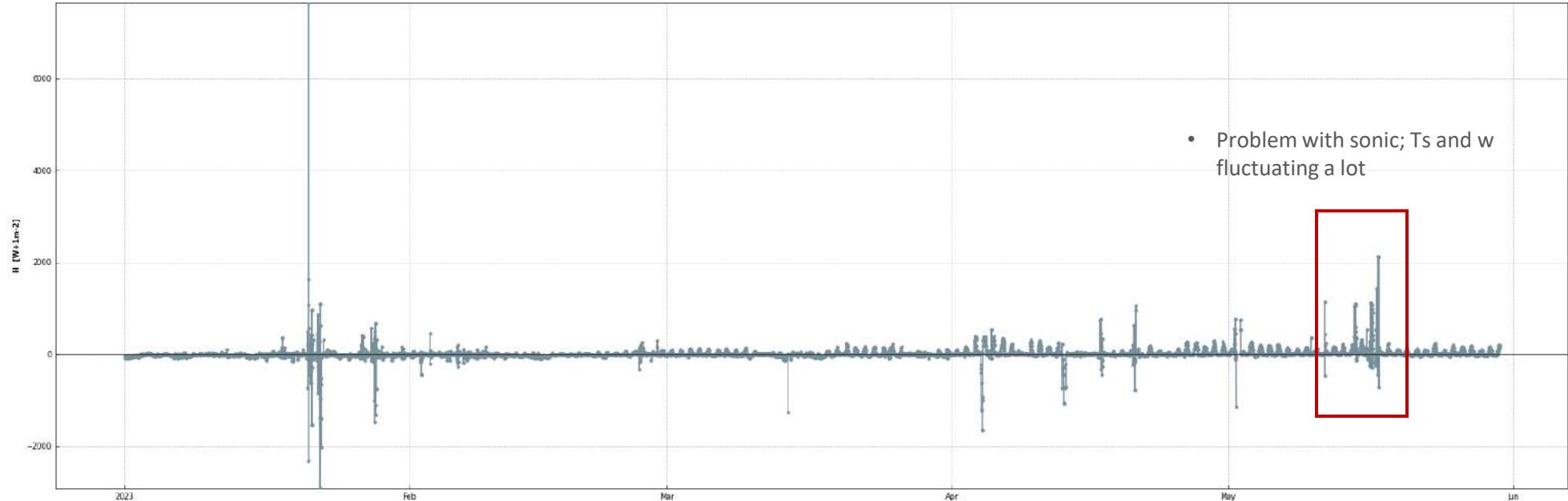
H, sensible heat flux: This year so far ...

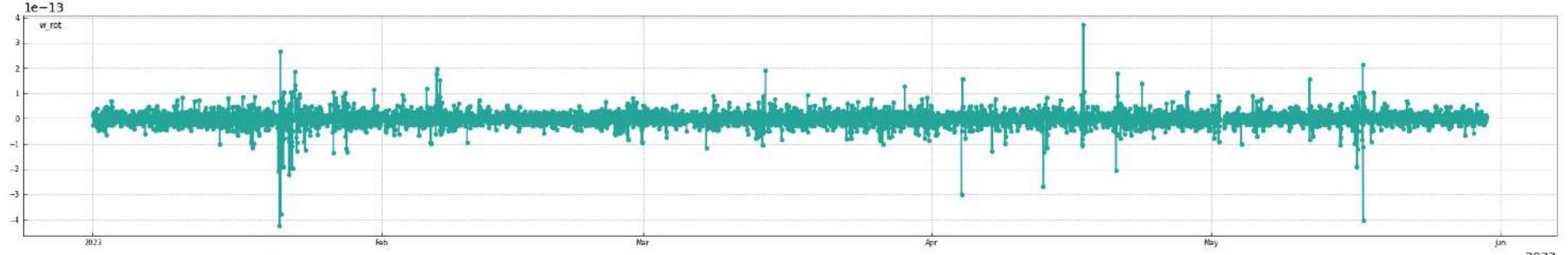
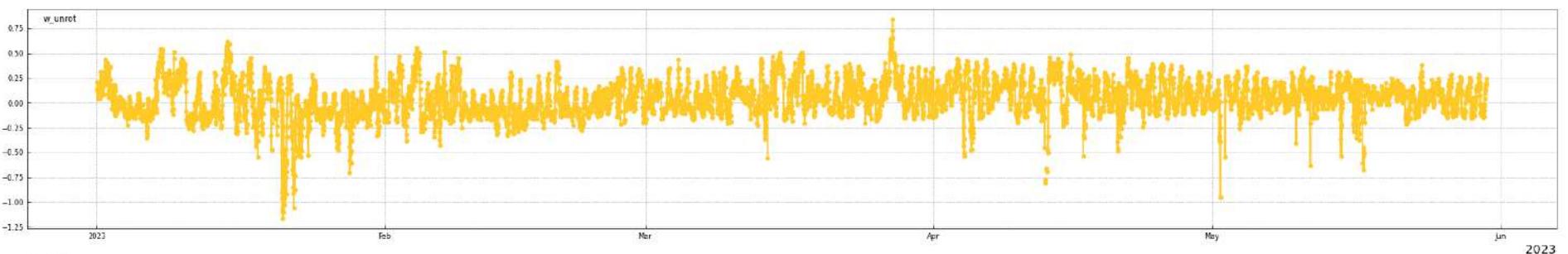
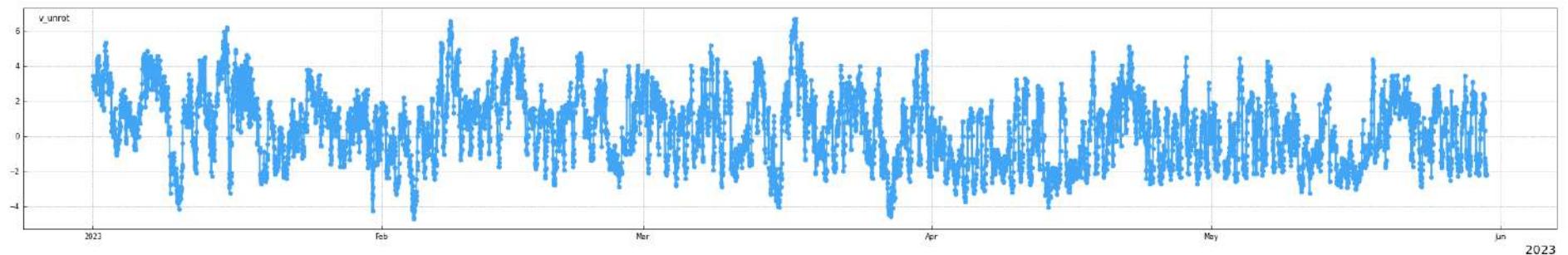
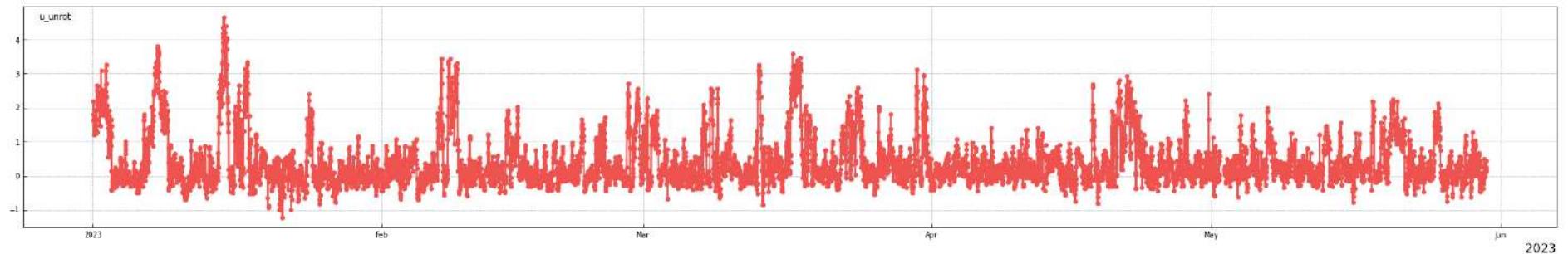












16.5.2023

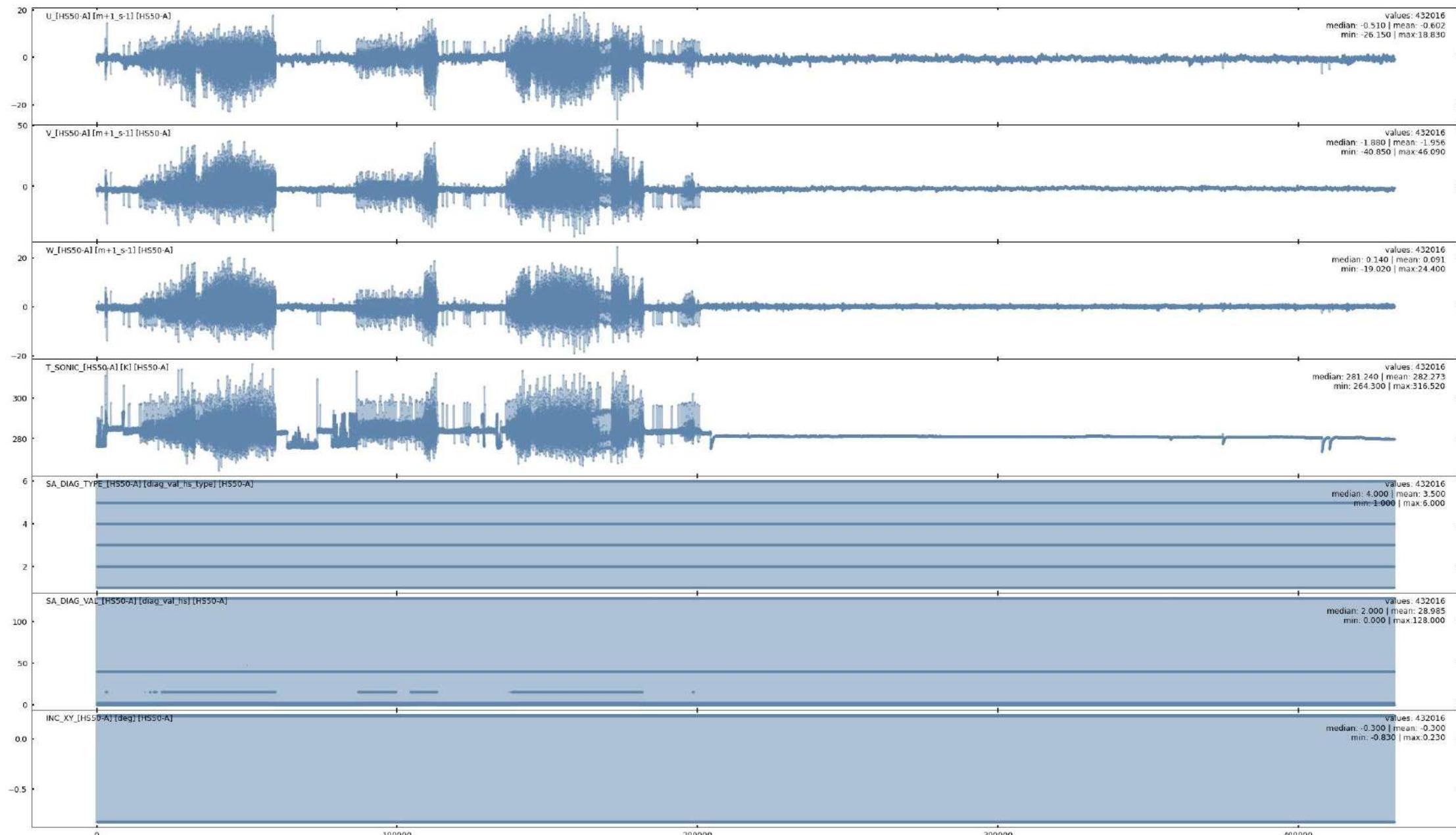
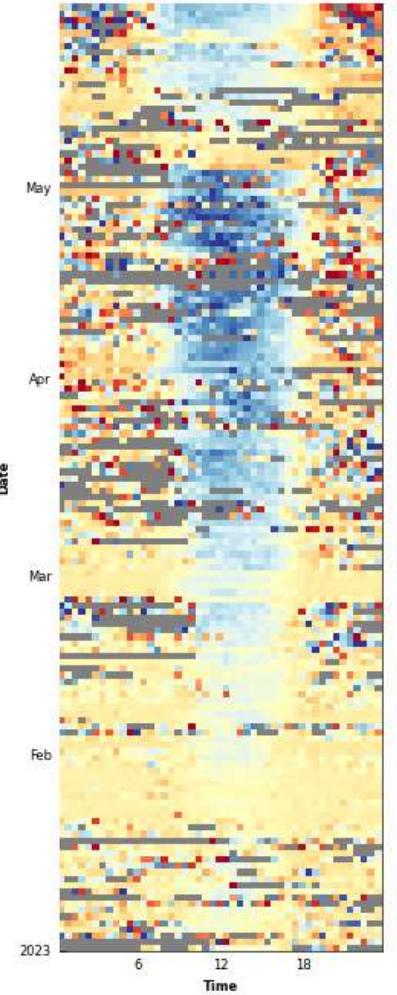
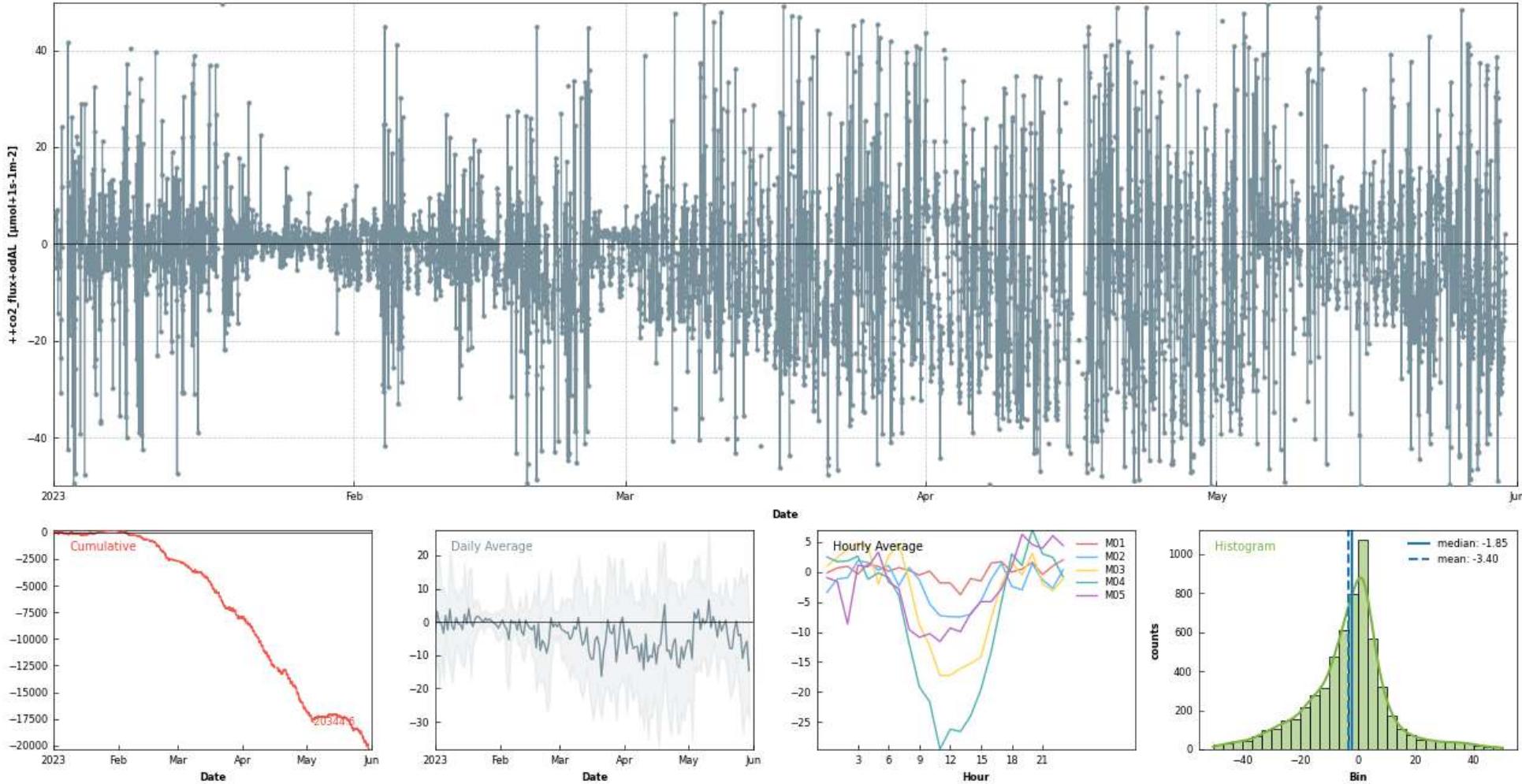




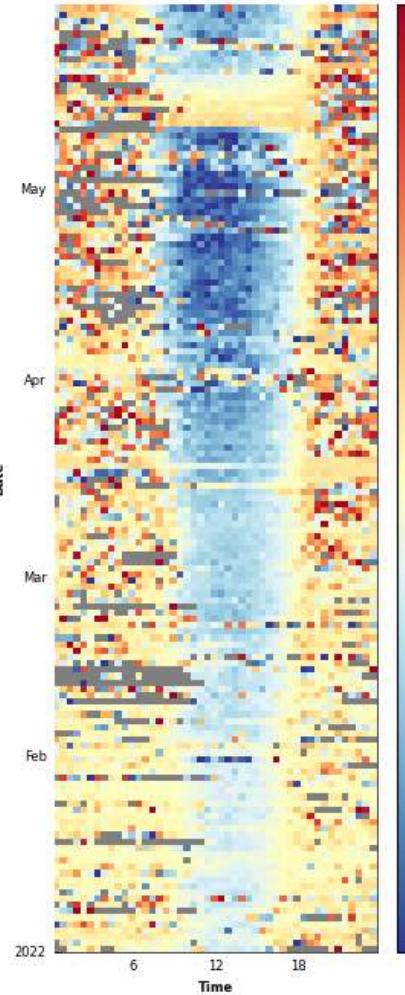
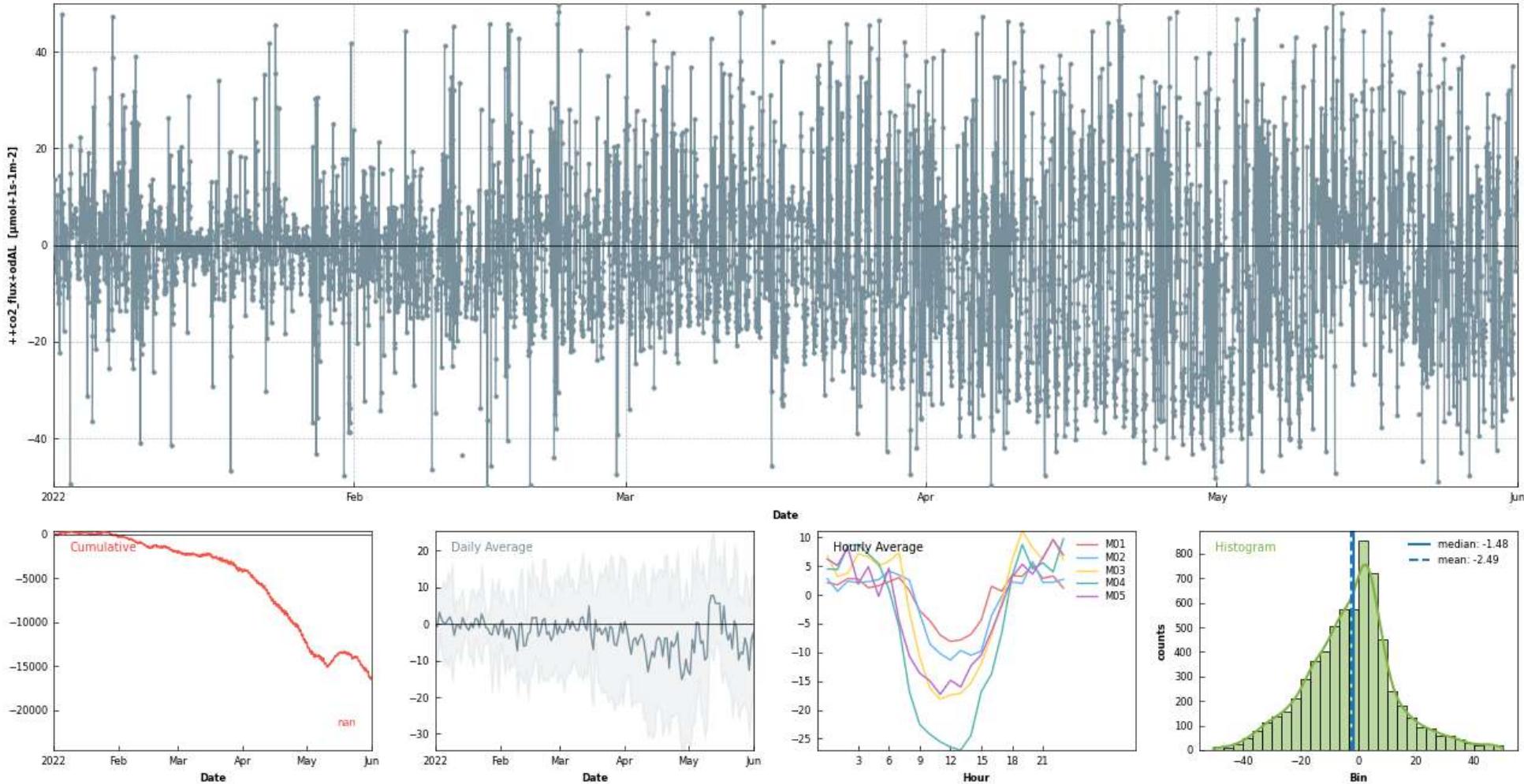
Photo: Lukas Hörtnagl

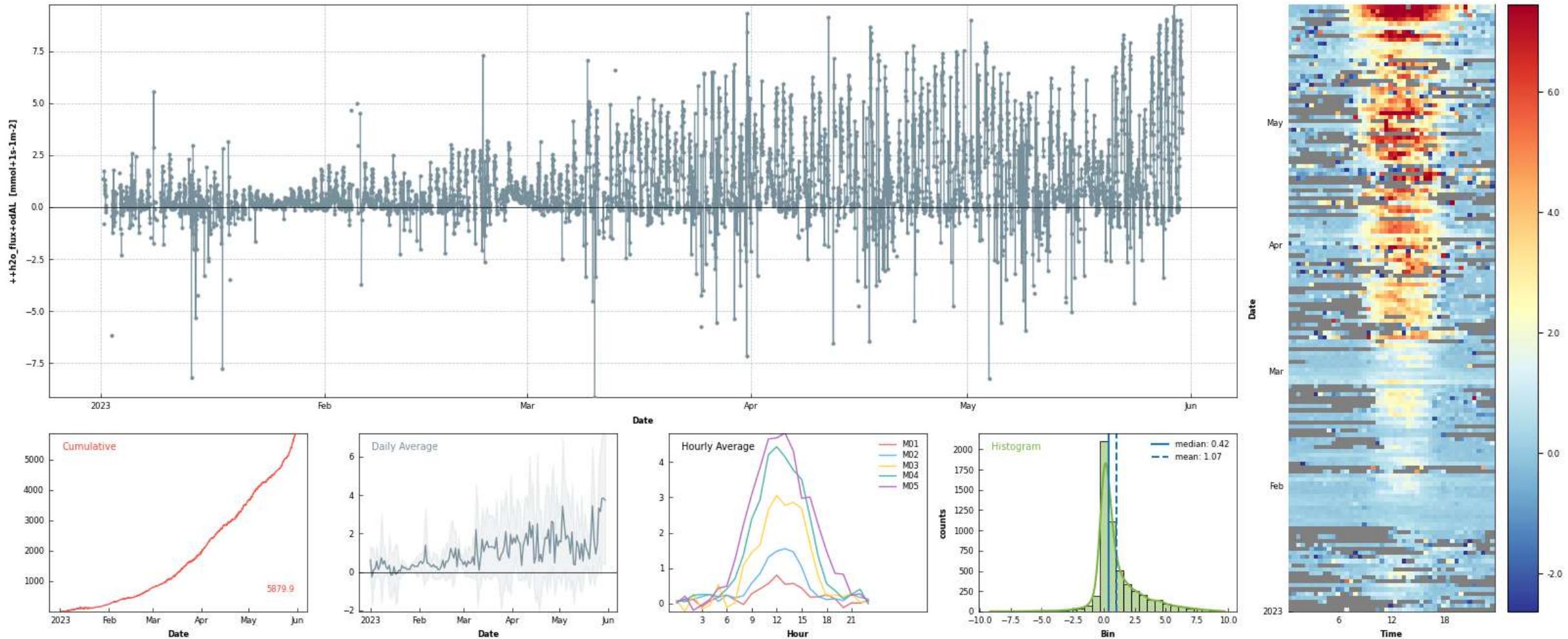
- 1st mowing: 2023.05.04
- Fertilization: 2023.05.25

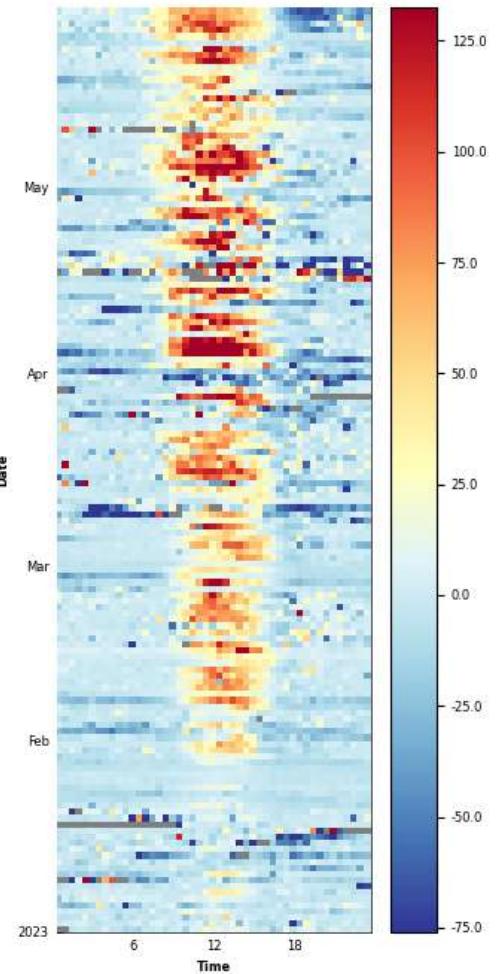
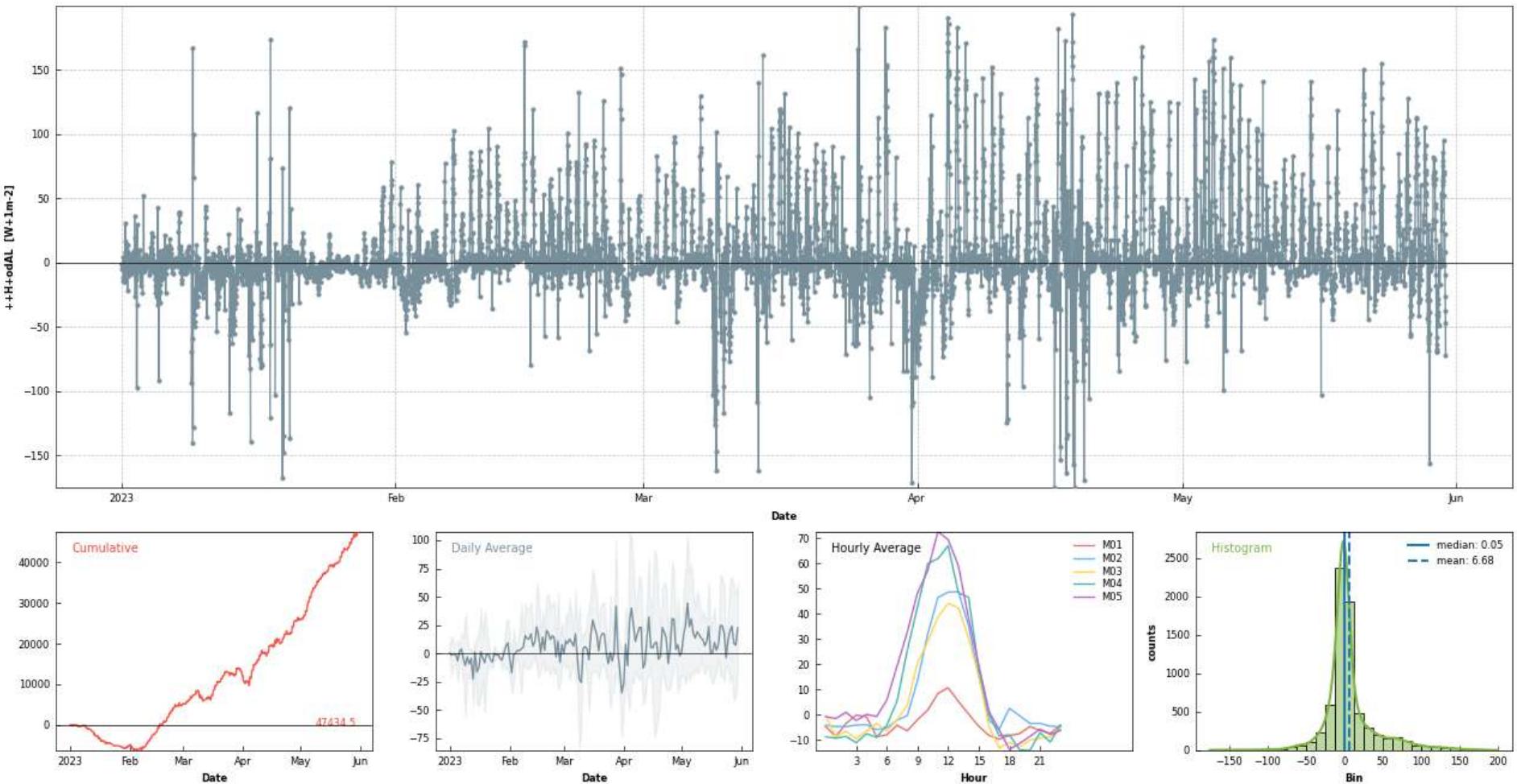


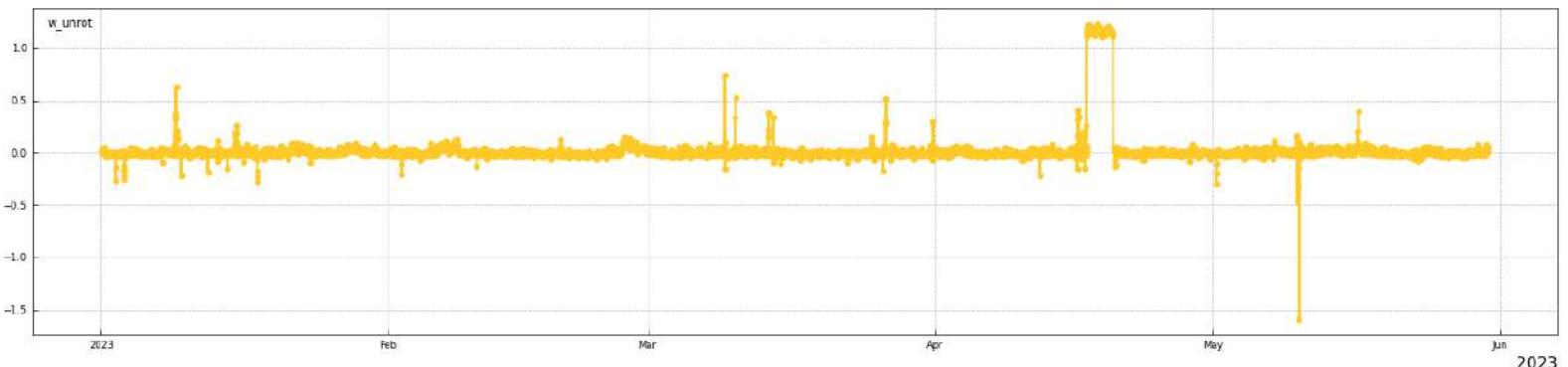
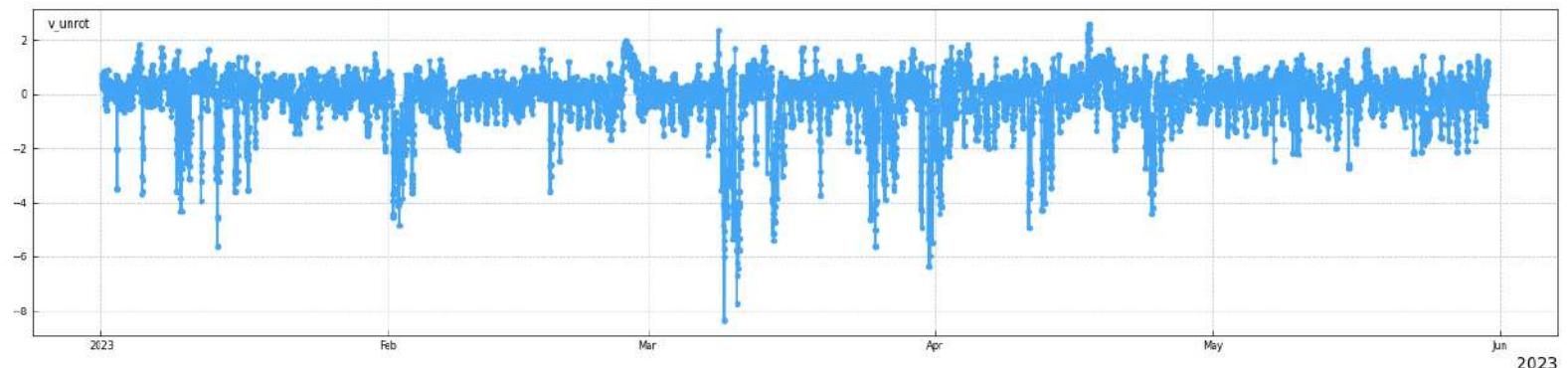
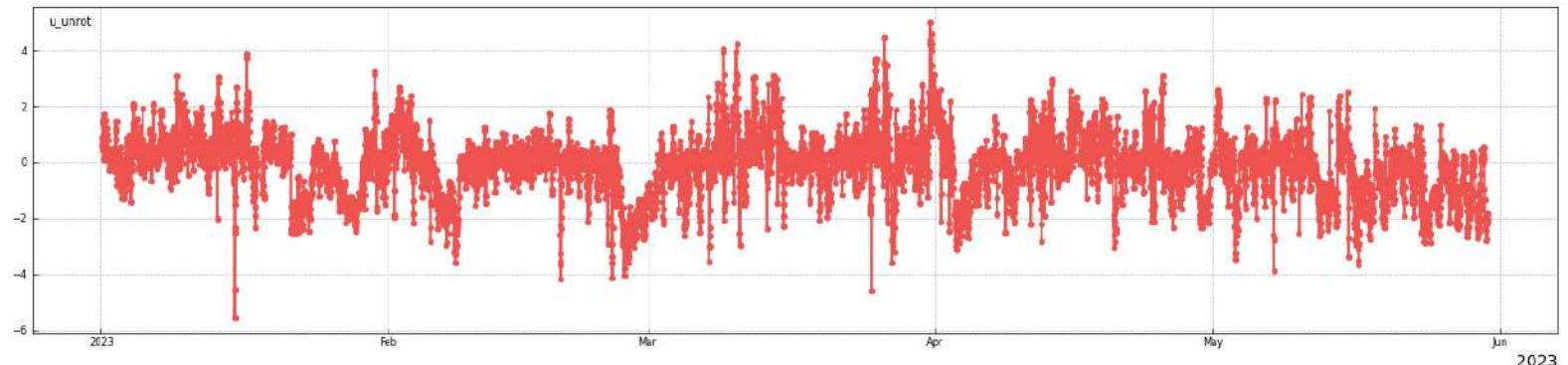
Compare to 2022

- 1st mowing: 2022.05.10
- Fertilization: 2022.05.23

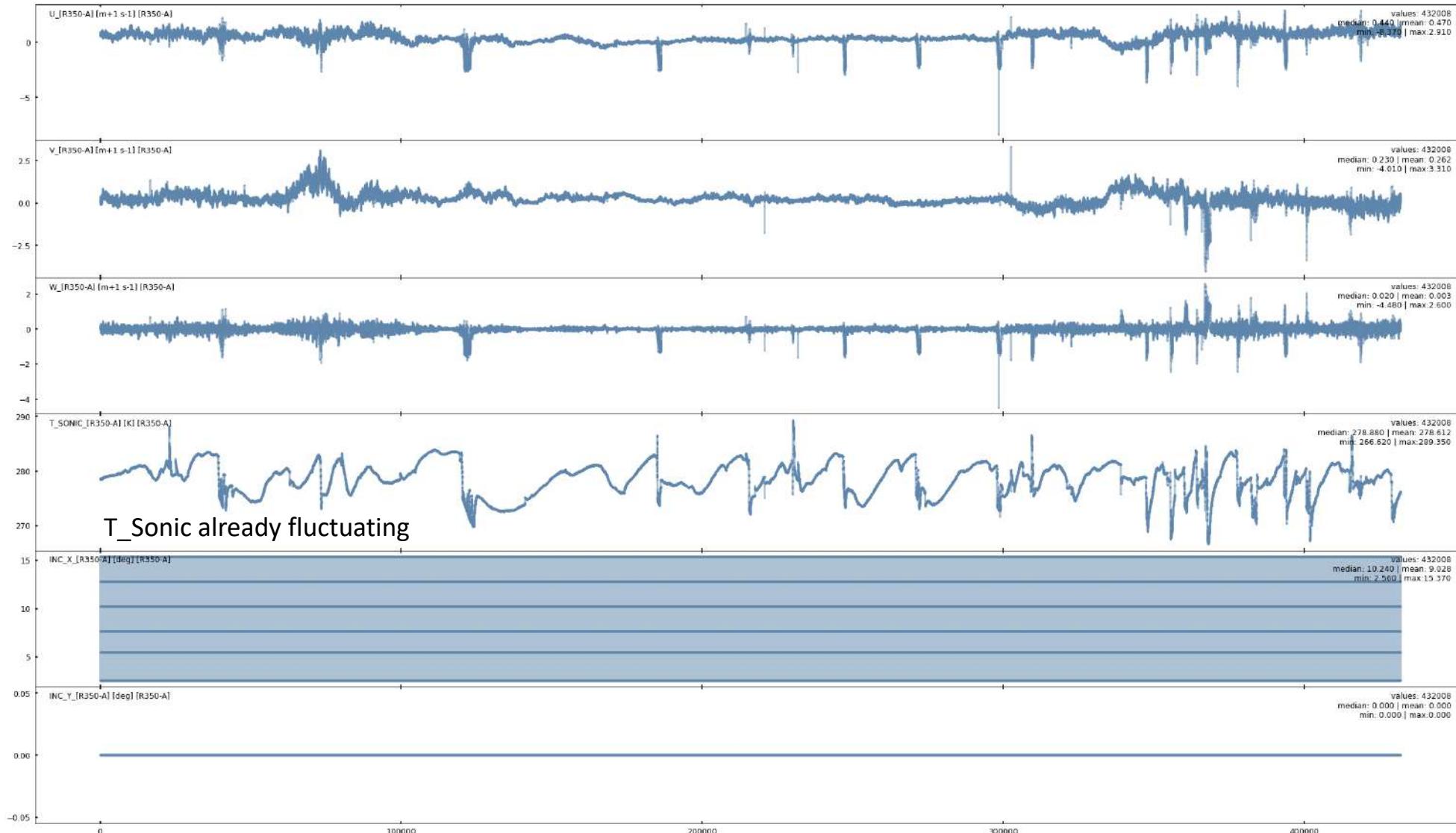




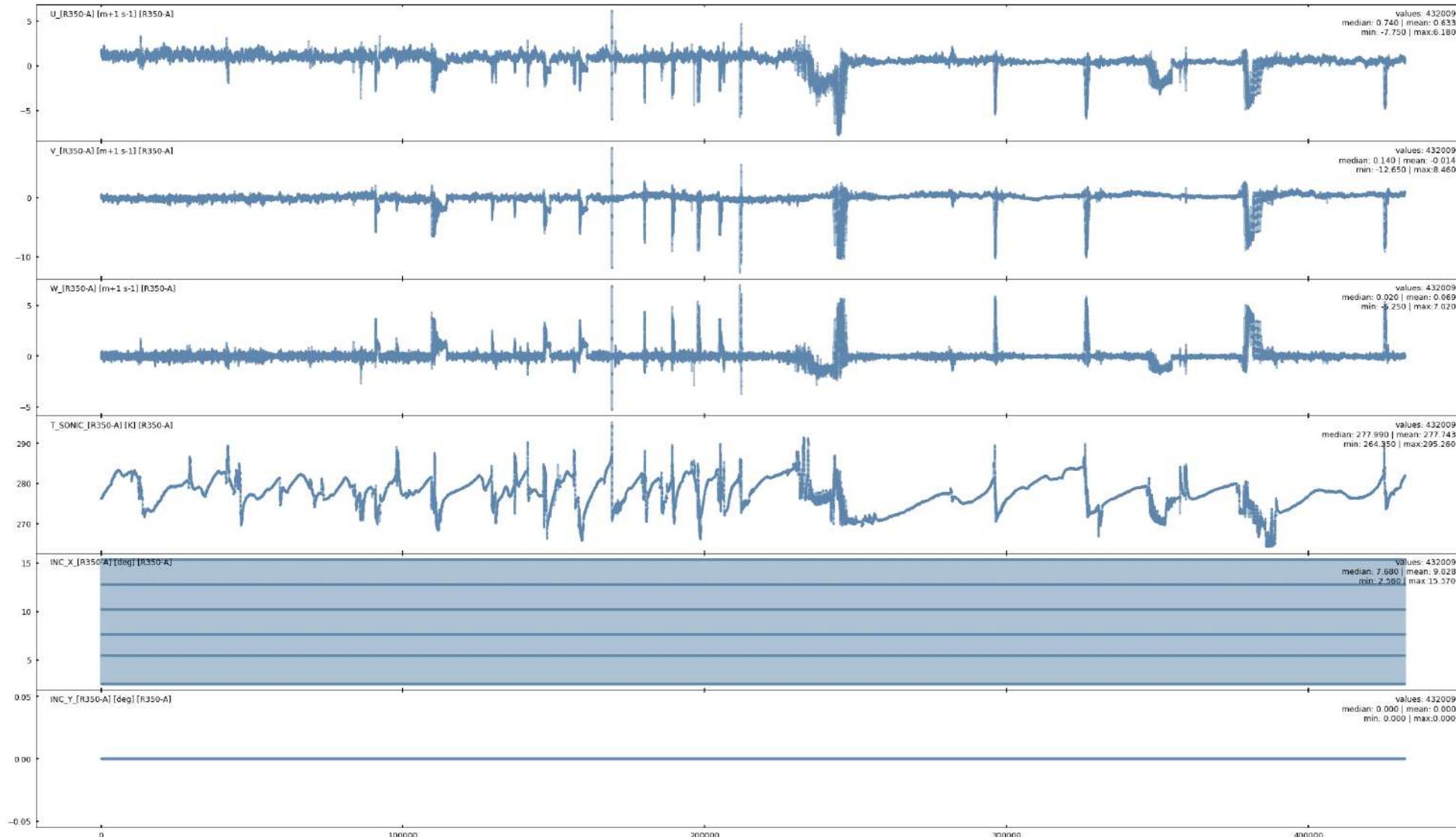




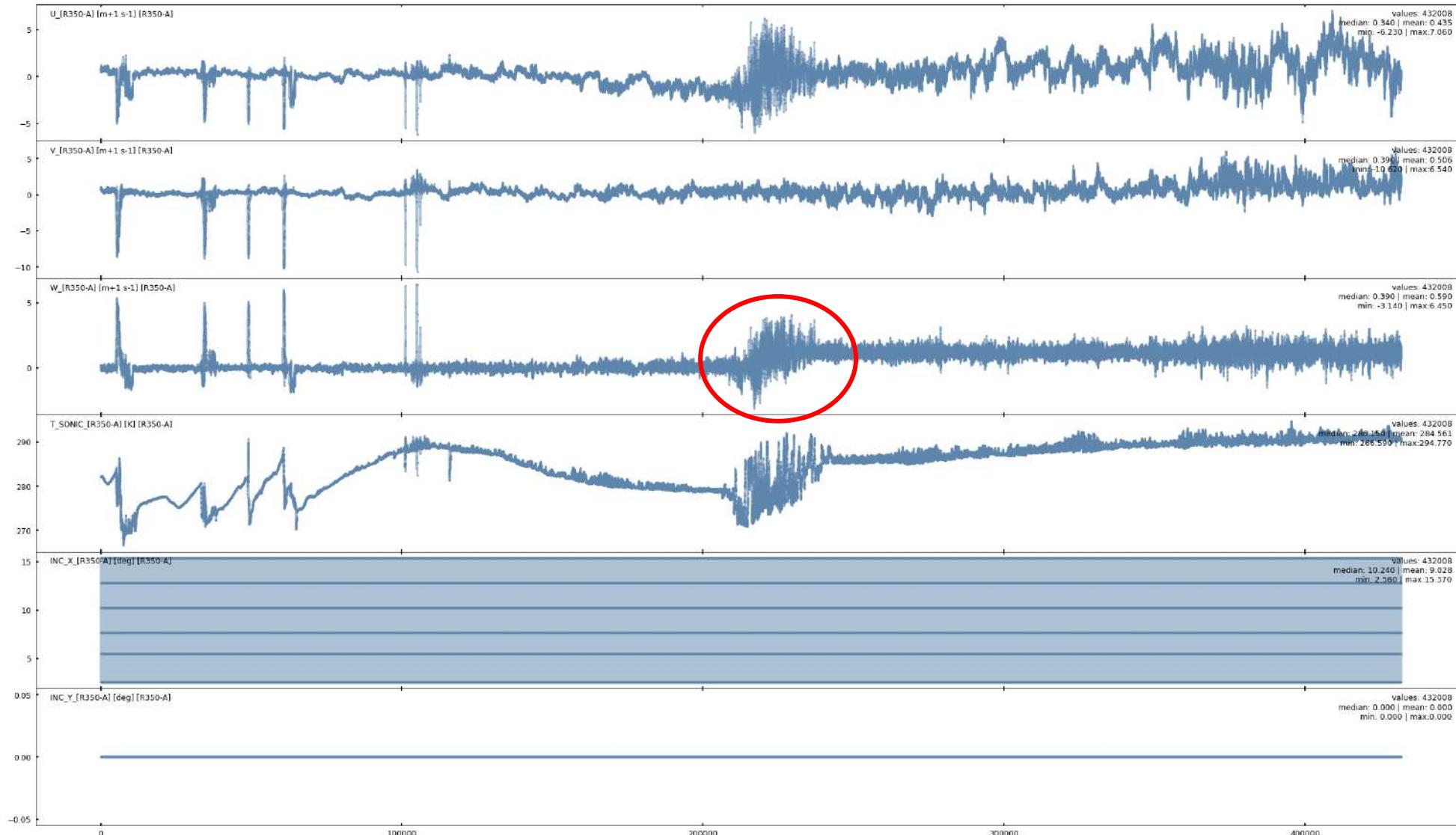
Before the offset started



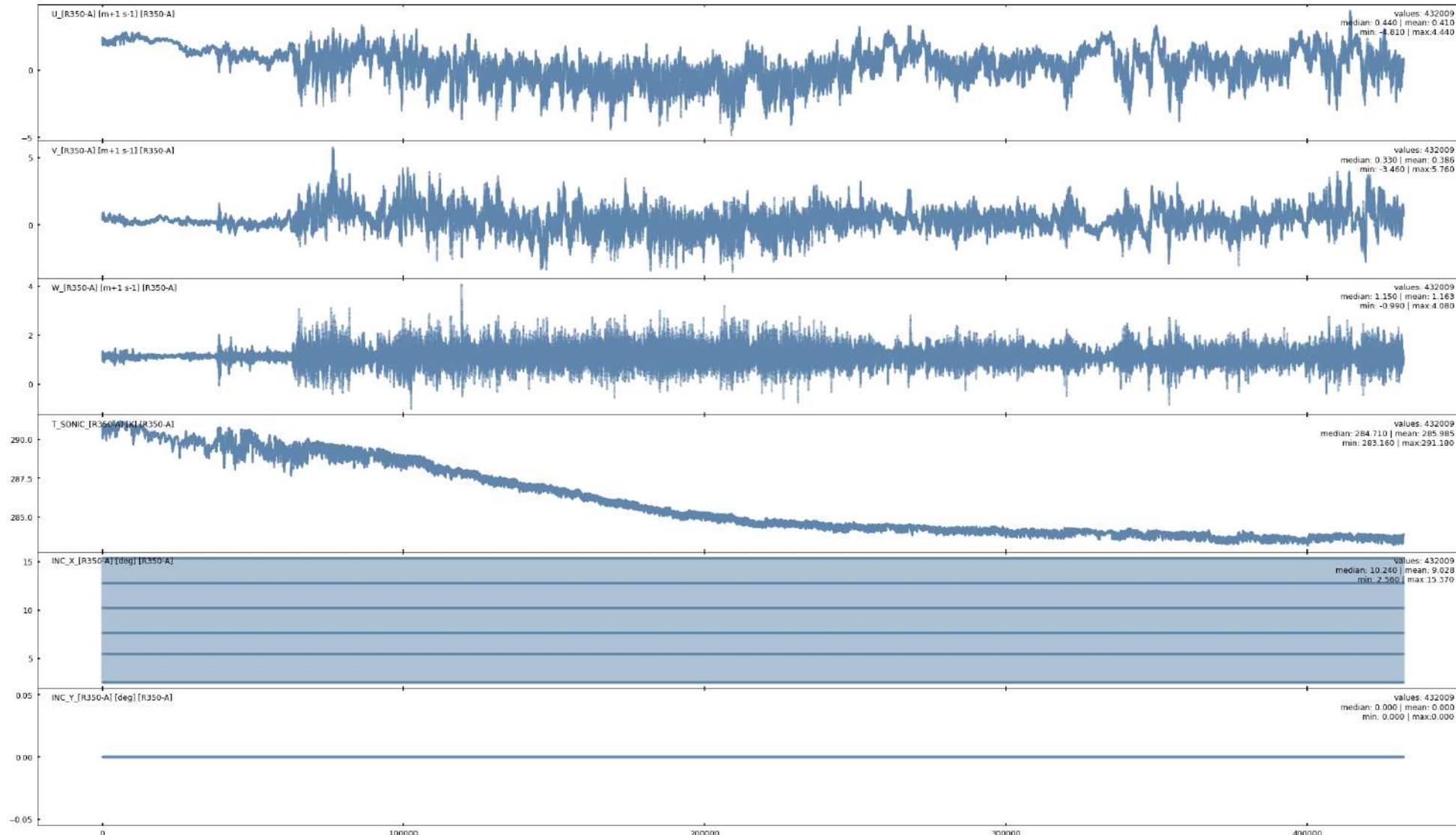
Before the offset started



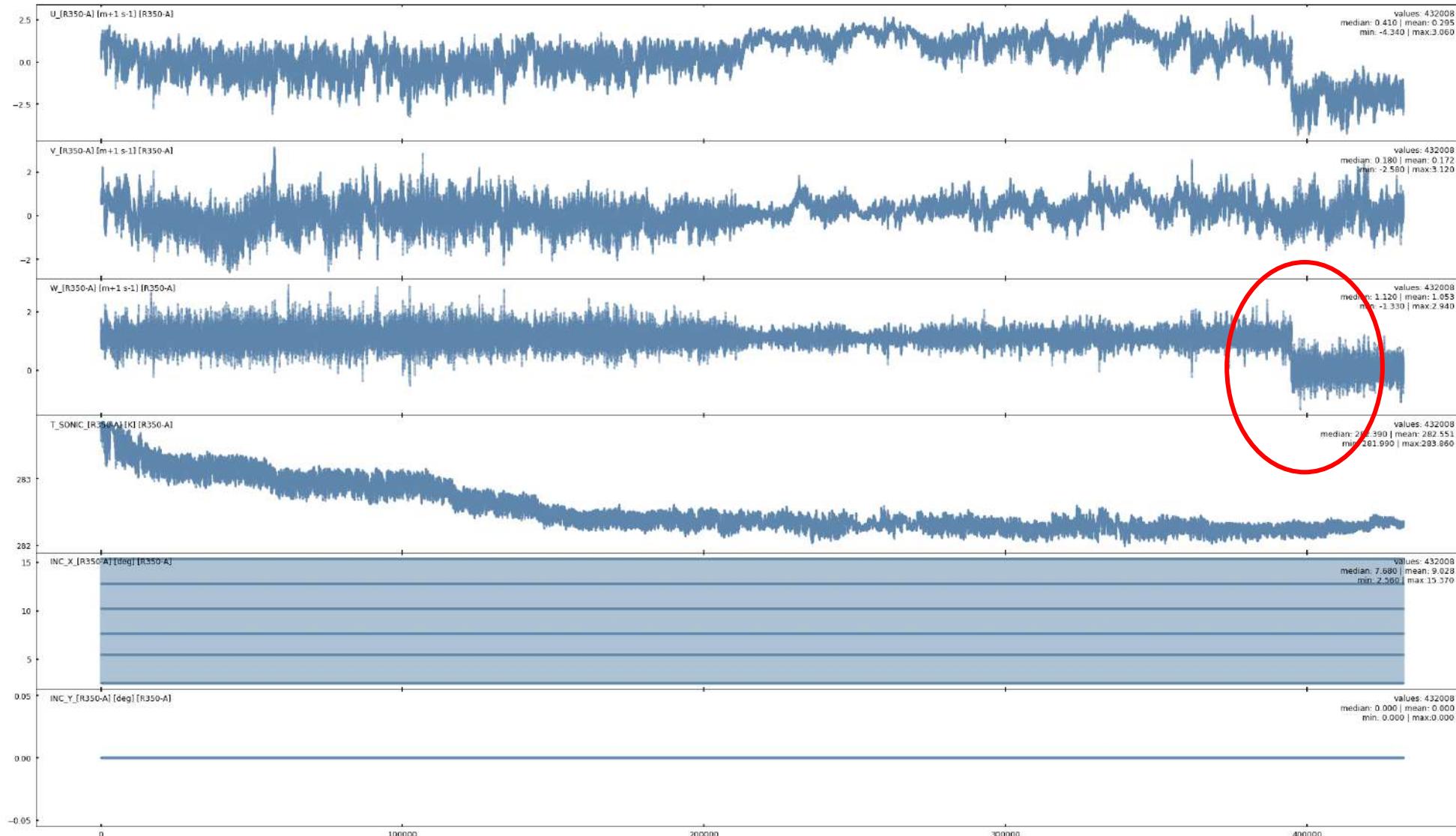
Then the offset happened



Then it stabilized



And it's gone (2 days later)



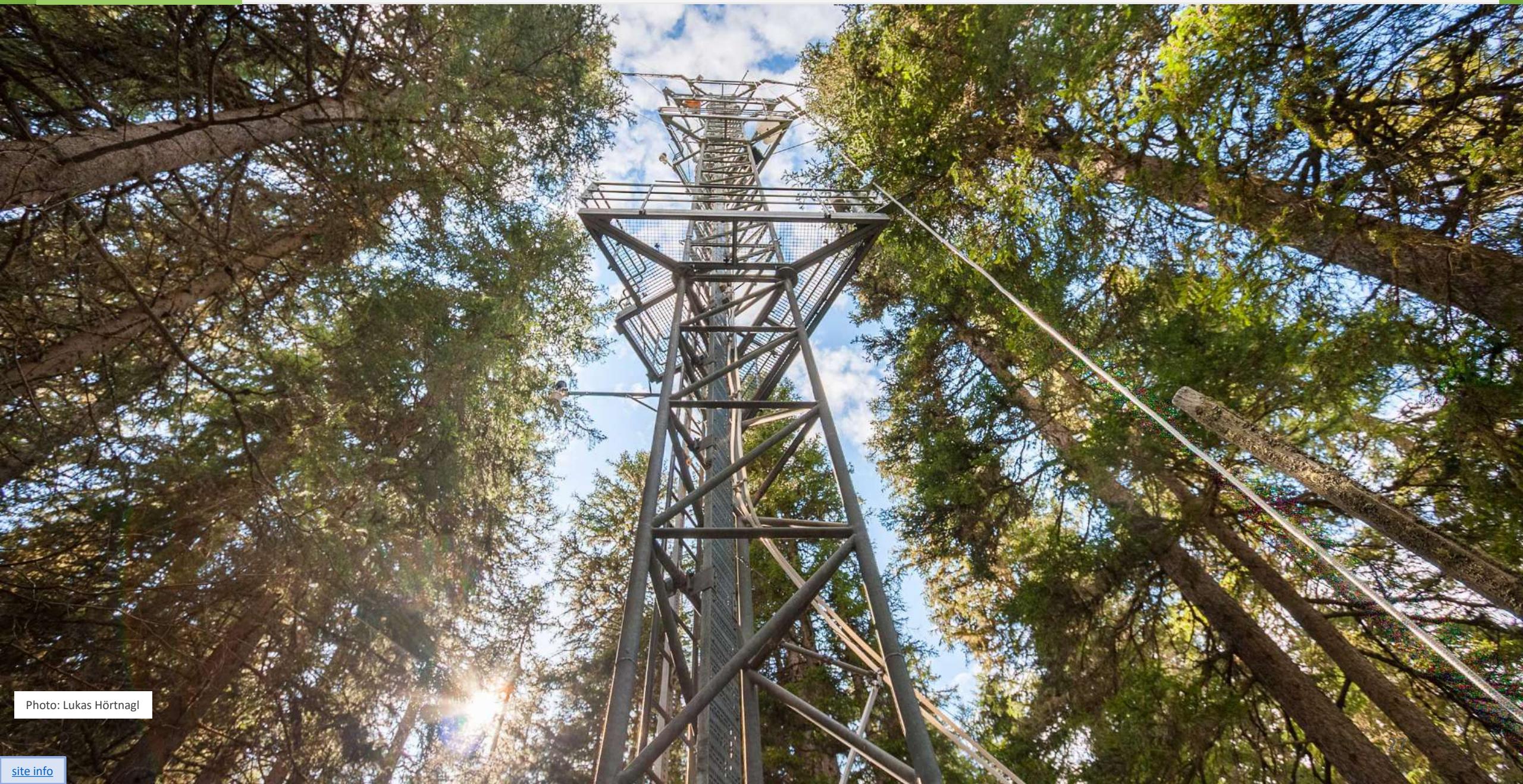
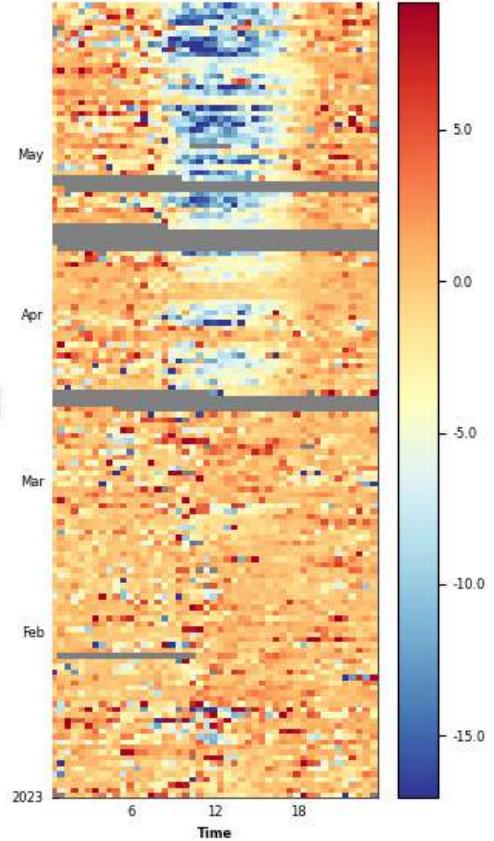
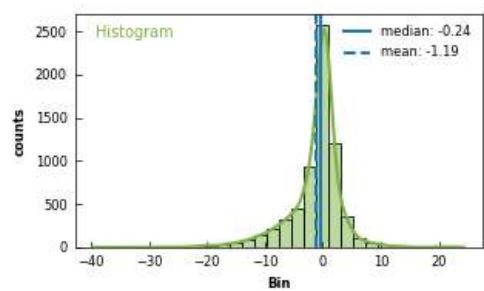
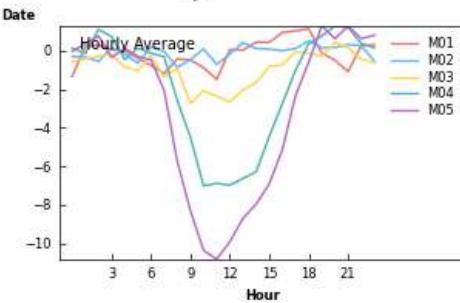
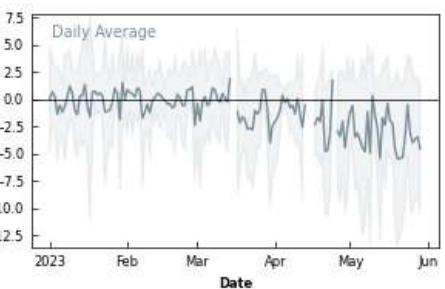
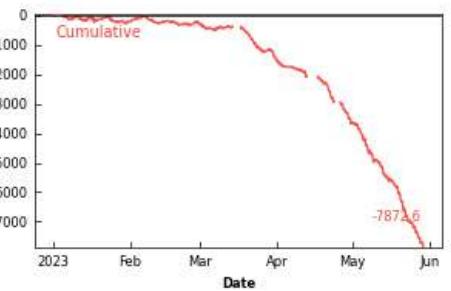
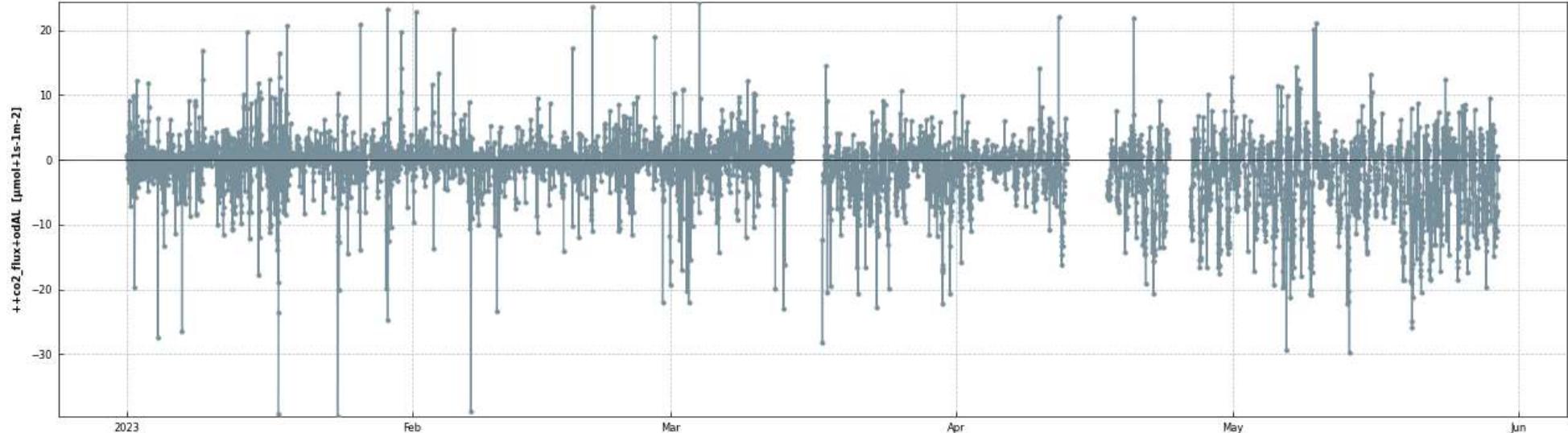
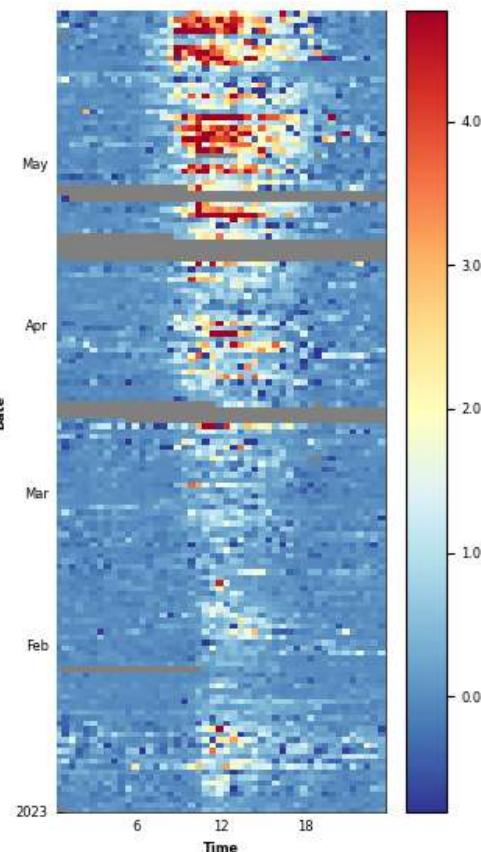
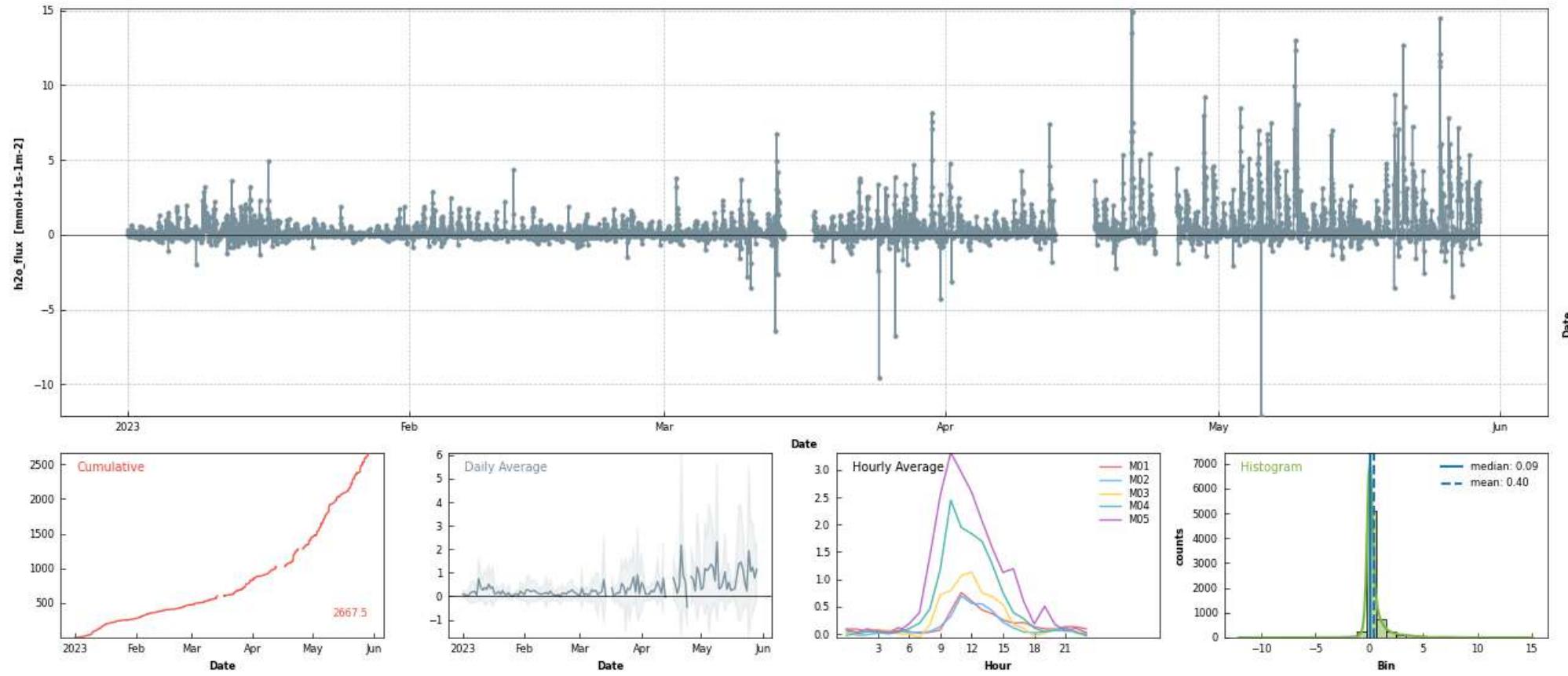
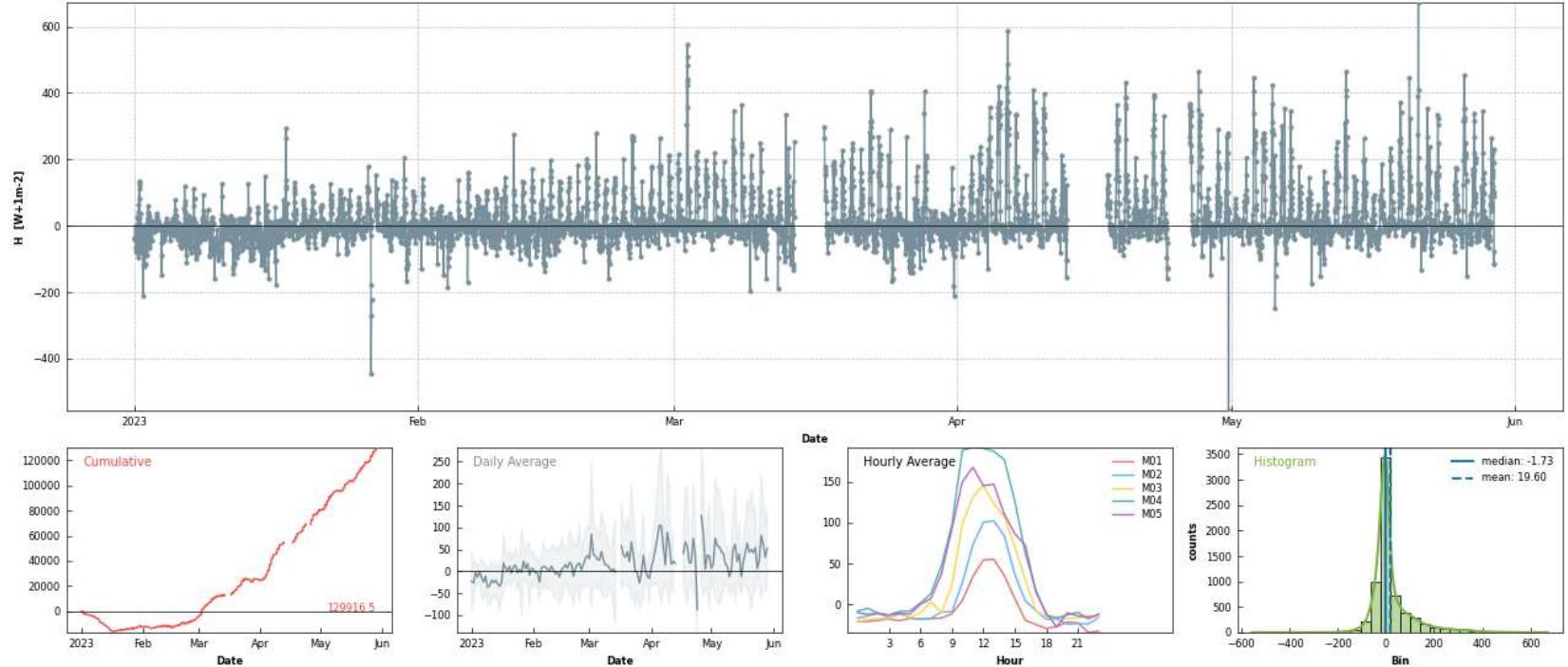


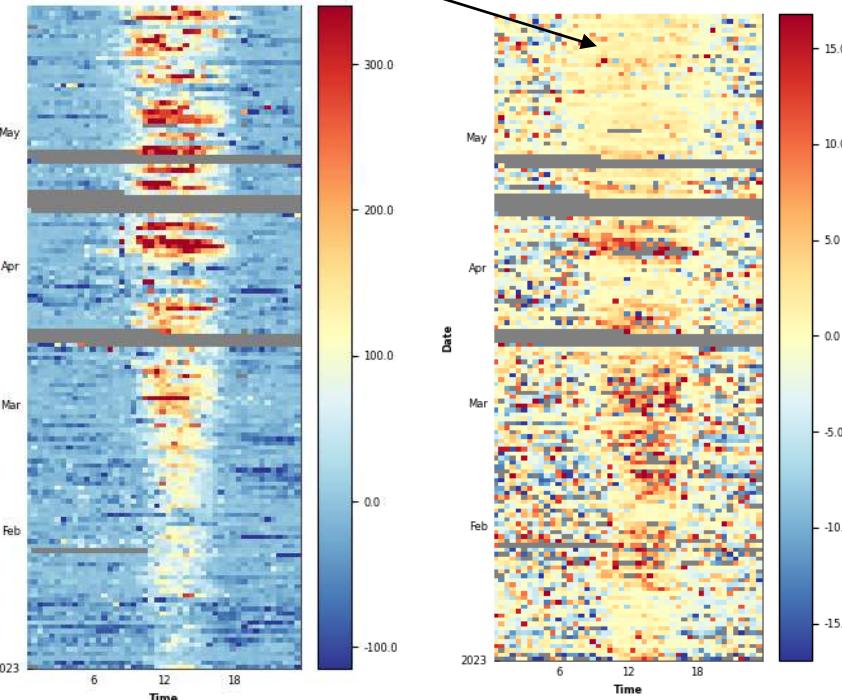
Photo: Lukas Hörnagl







- H decreased in May while H<sub>2</sub>O flux increased in May compared to April
- Bowen ratio (H/LE) decreases



**Unrotated****Wind**

- u, v and w
- typically between -5 and +5 m+1 s<sup>-1</sup>
- directly from the sonic

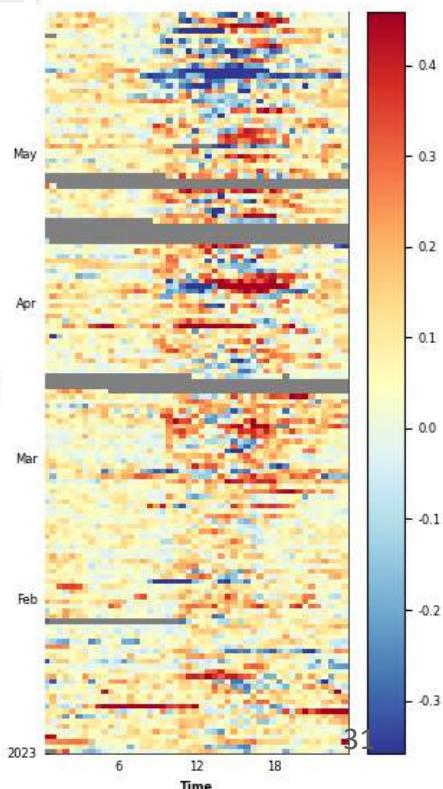
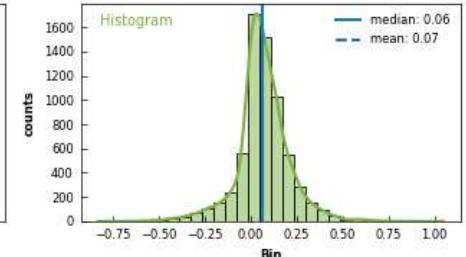
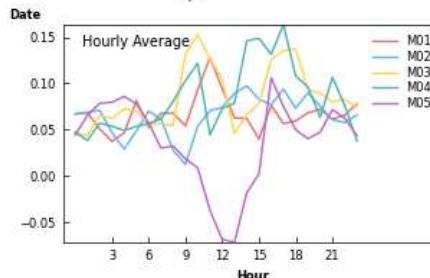
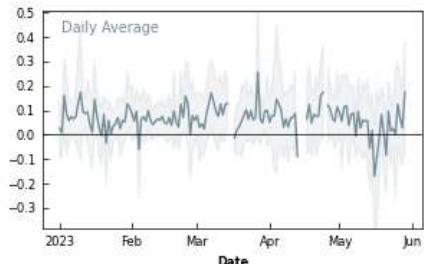
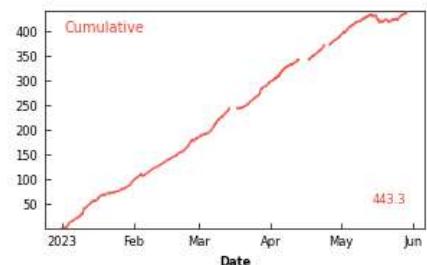
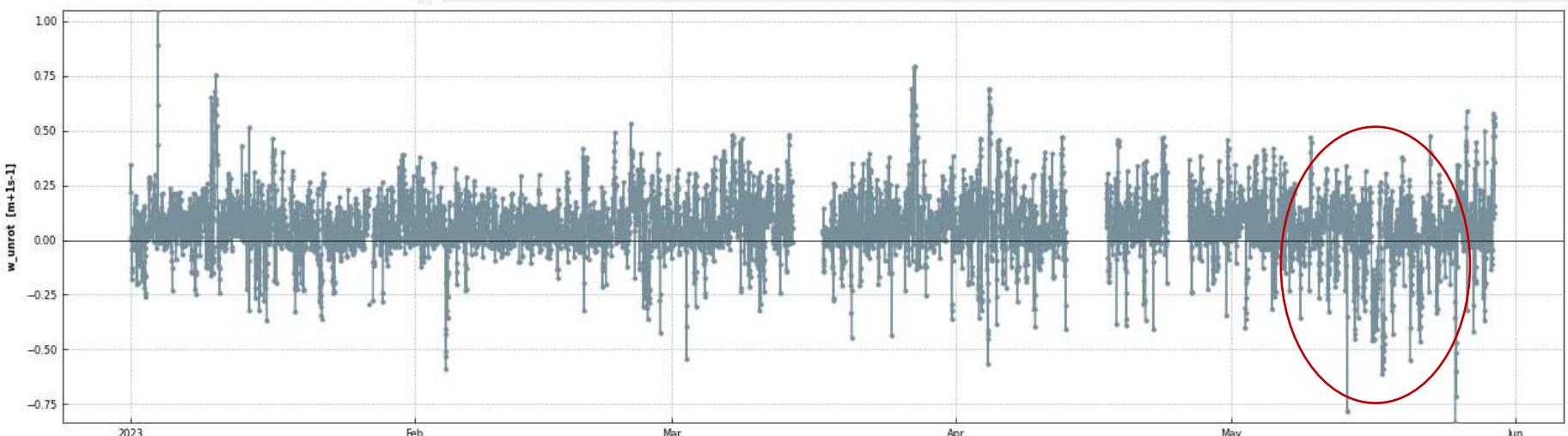
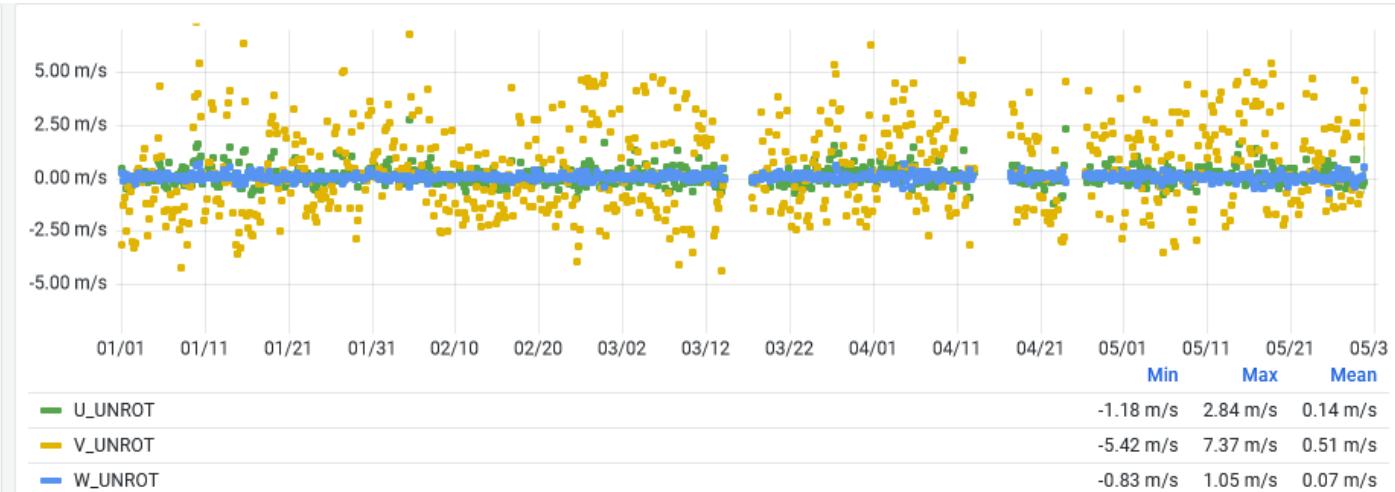
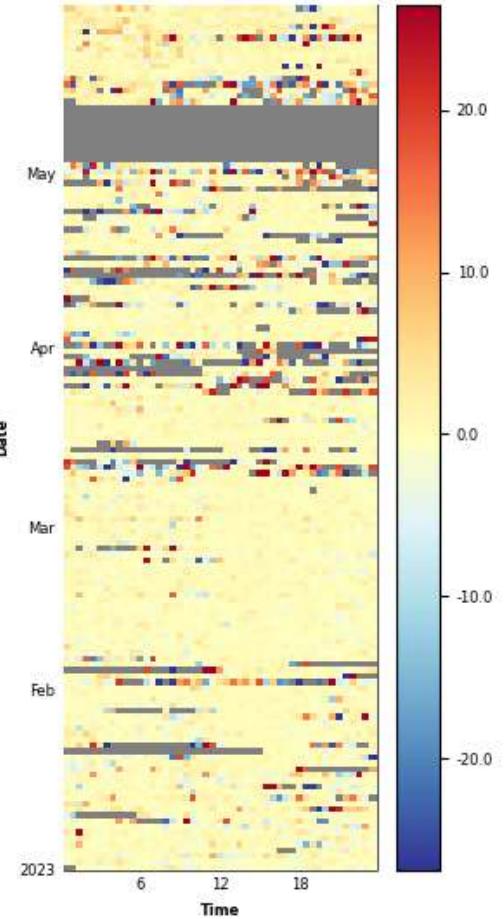
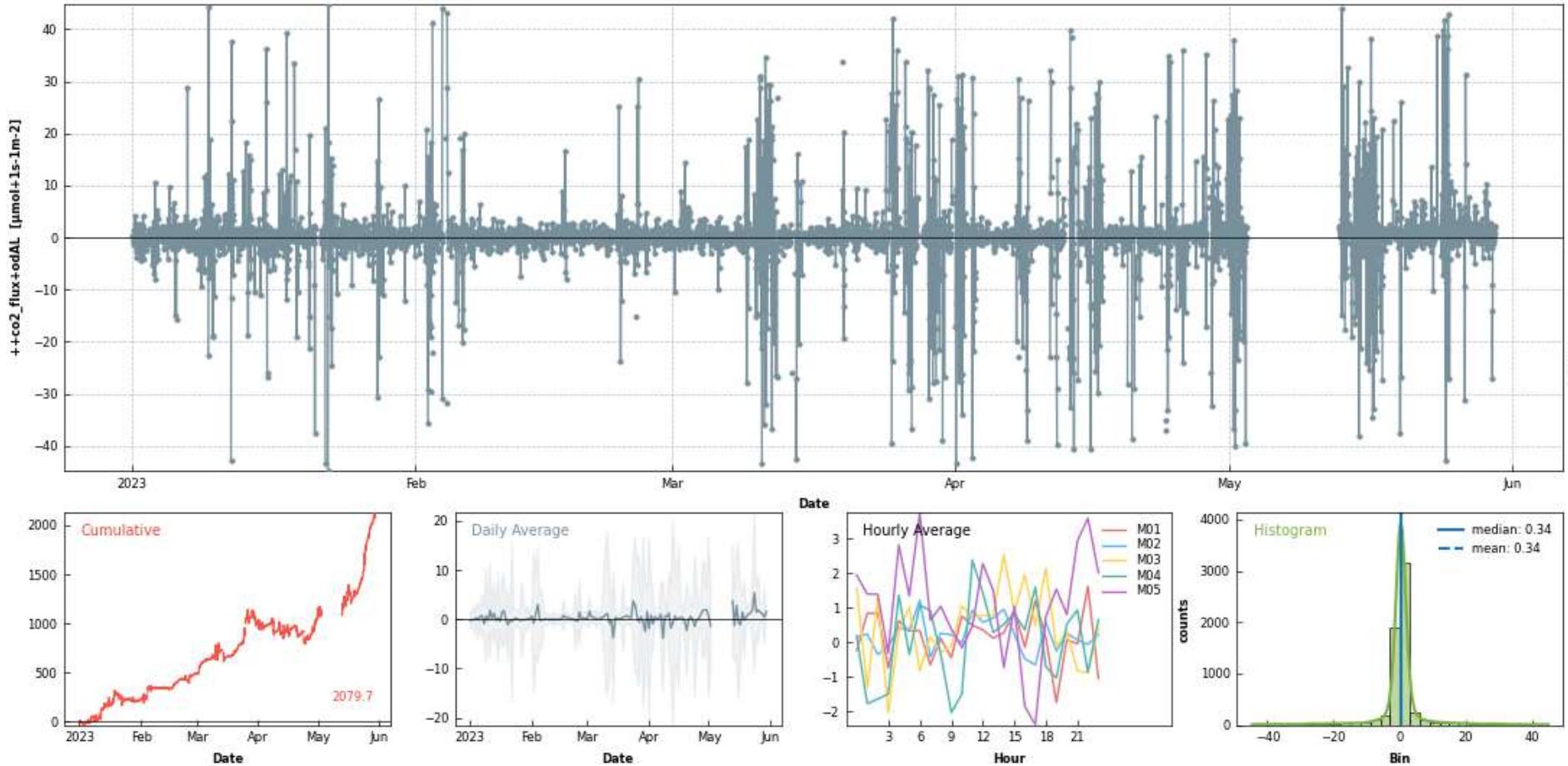
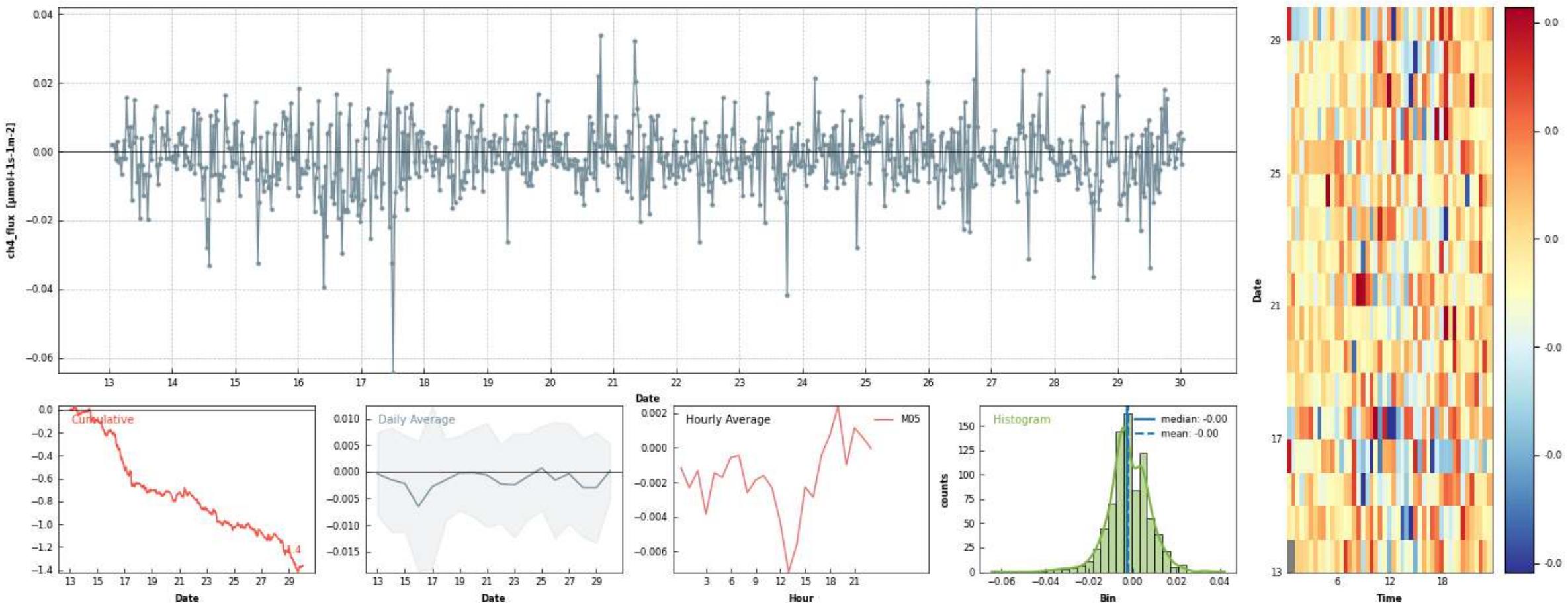
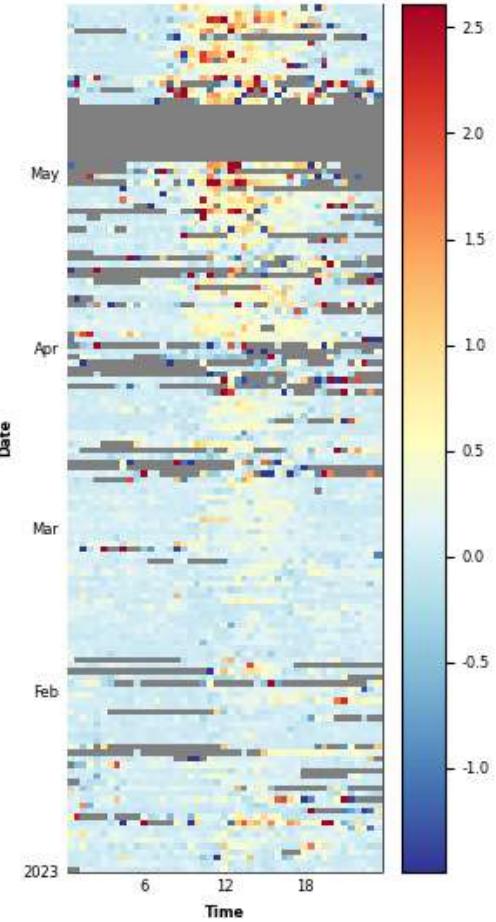
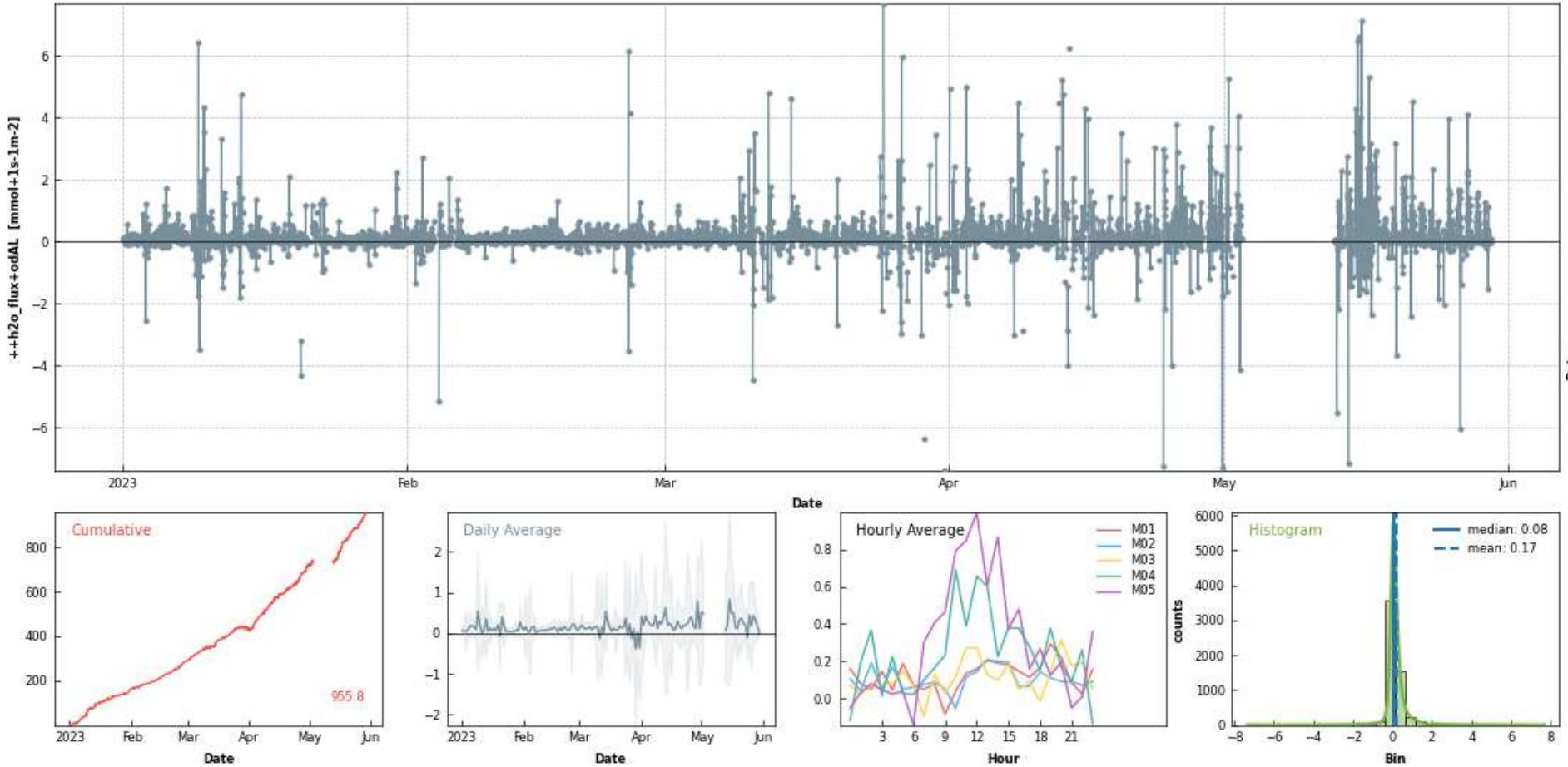


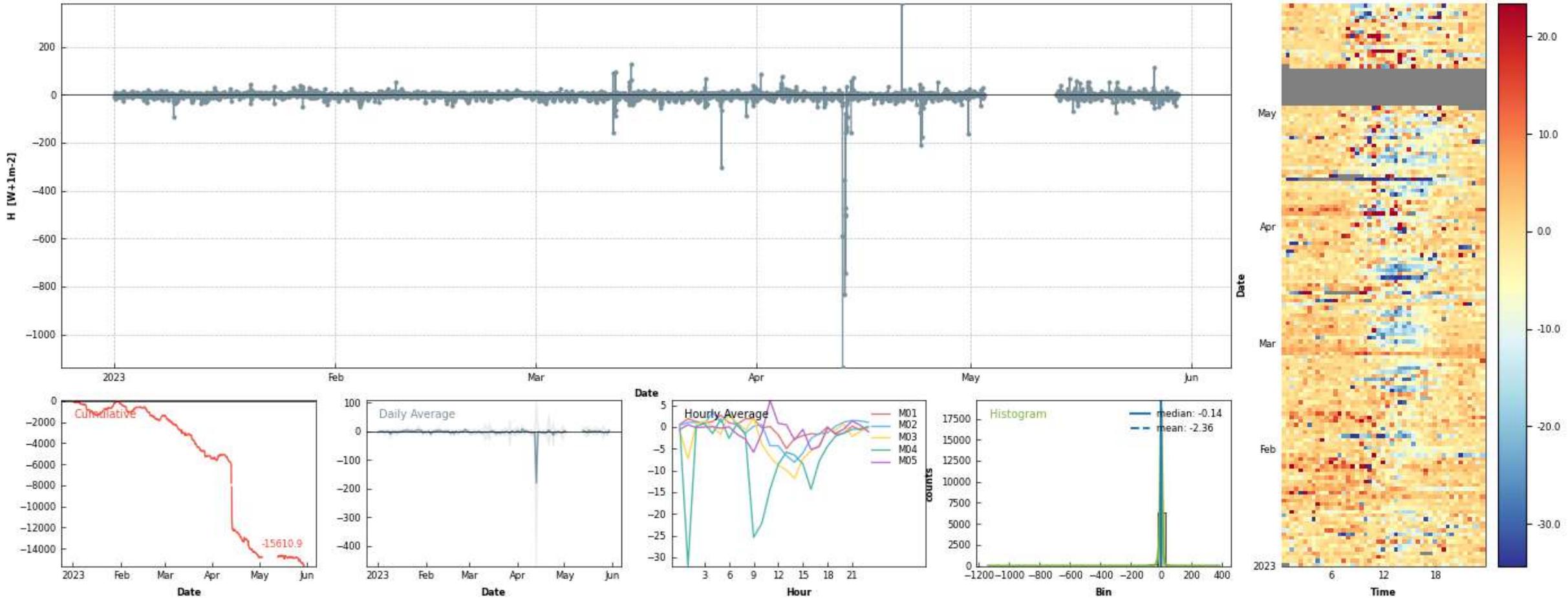


Photo: Luana Krebs









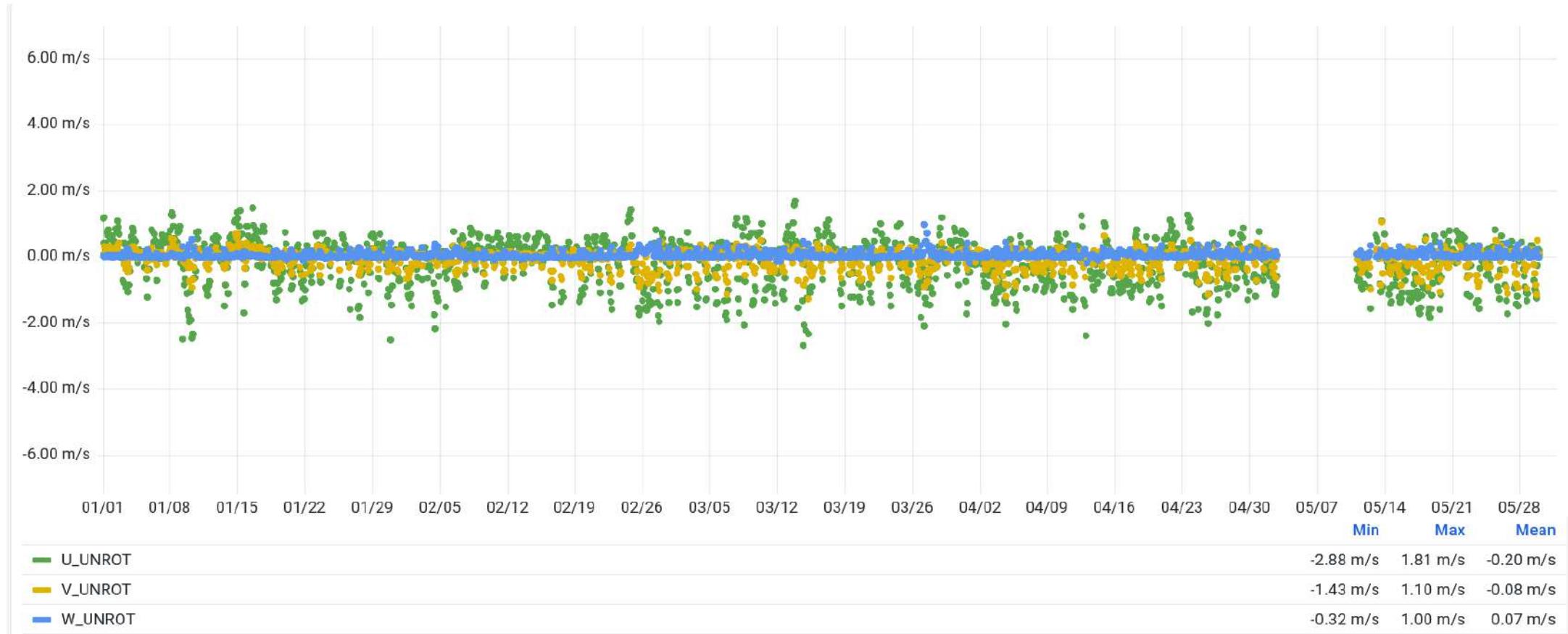
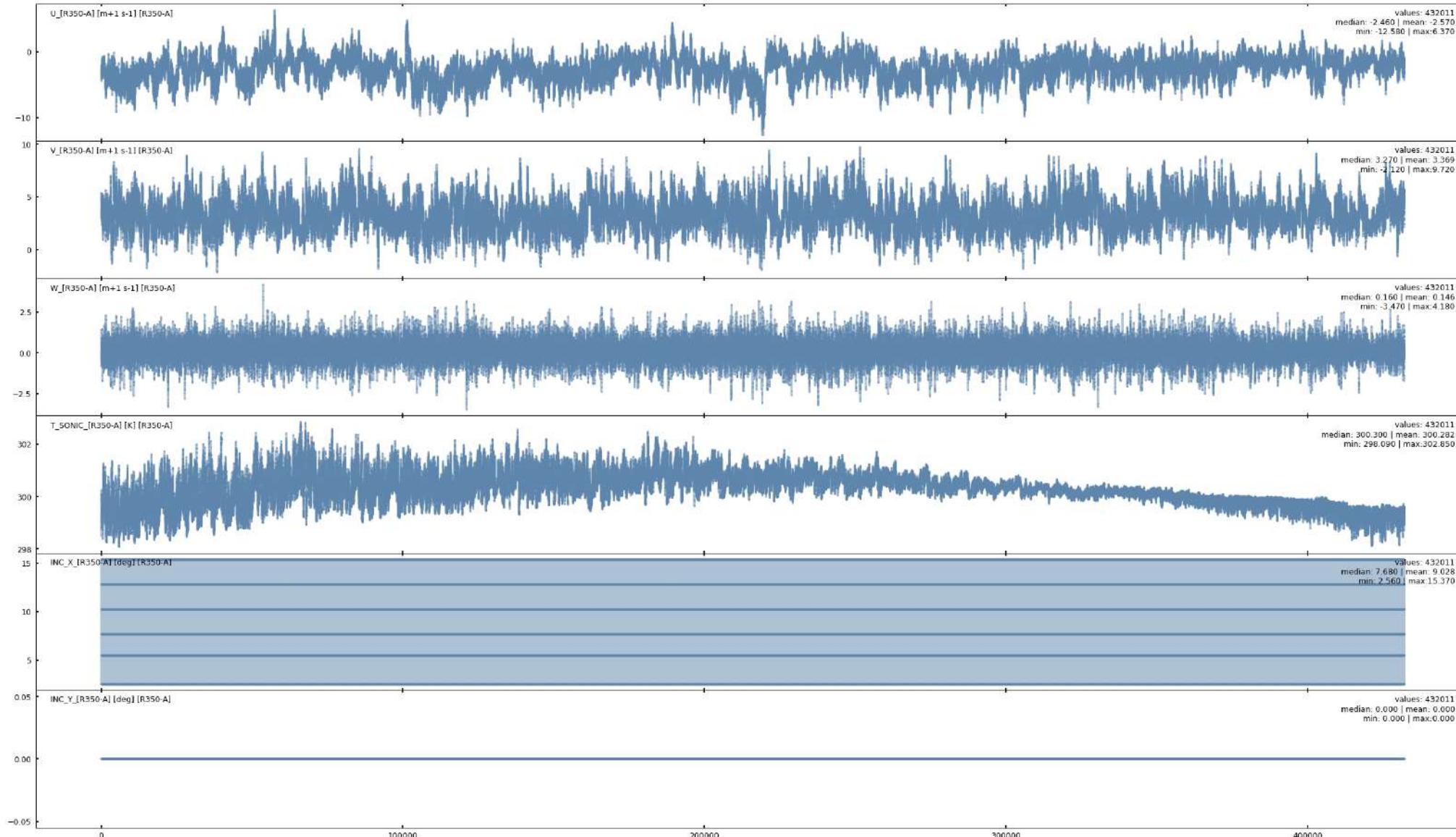


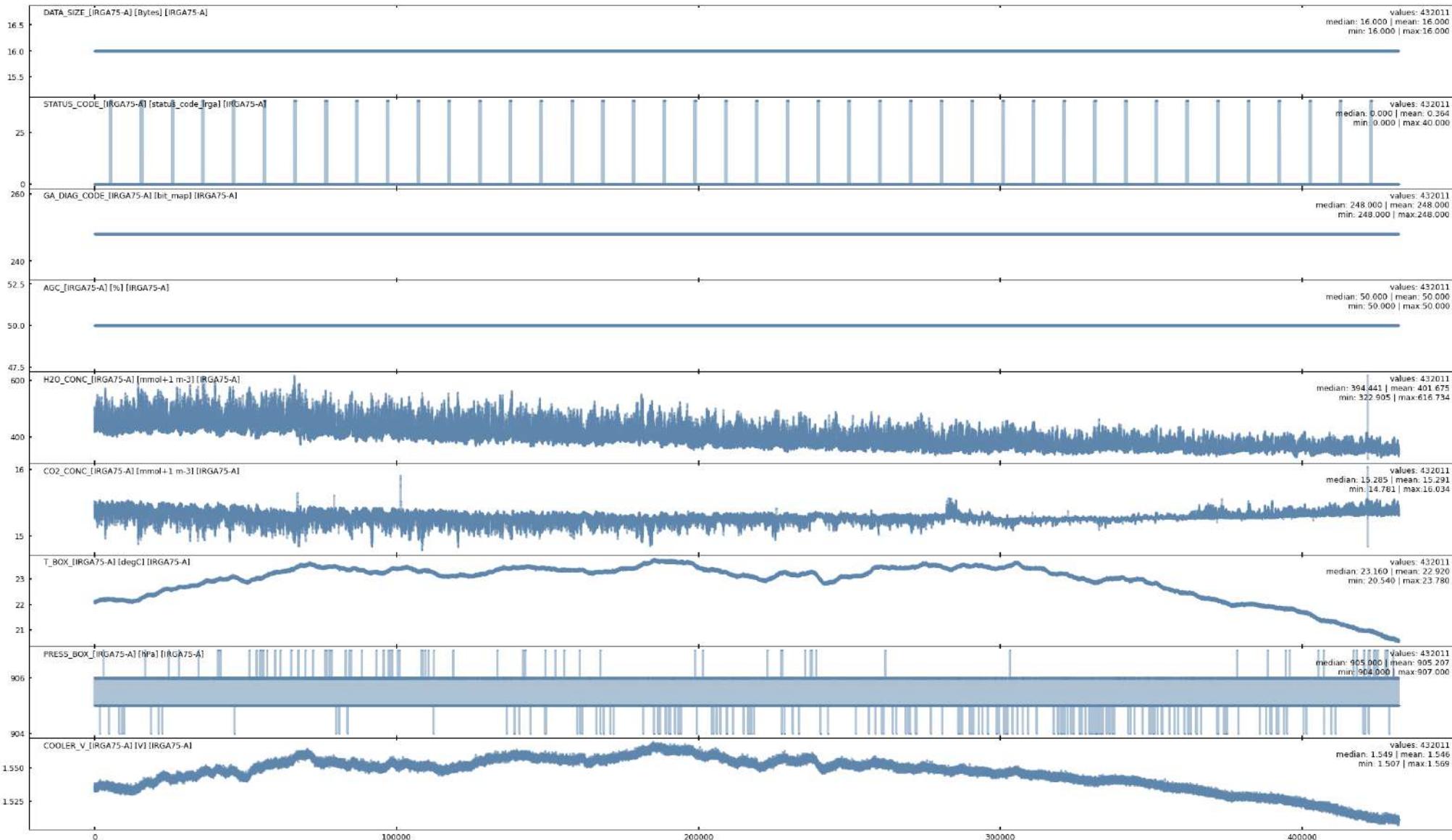


Photo: Lukas Hörtnagl

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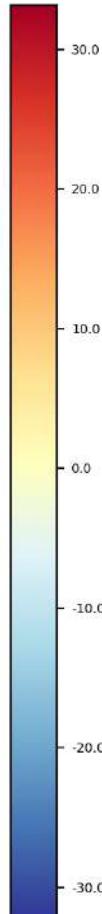
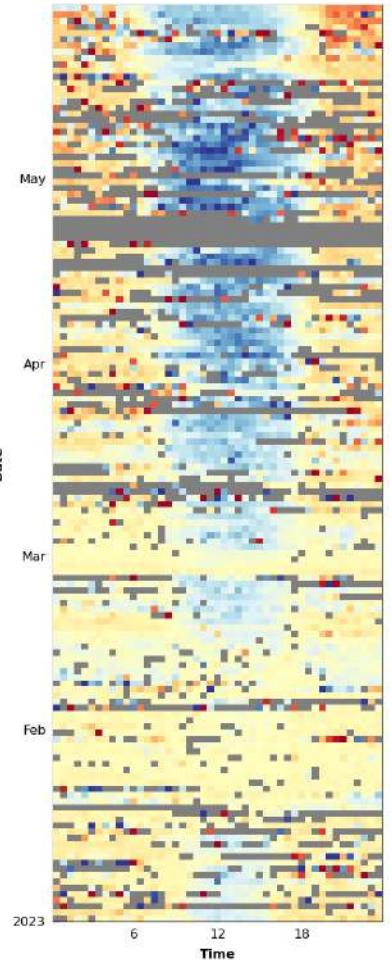
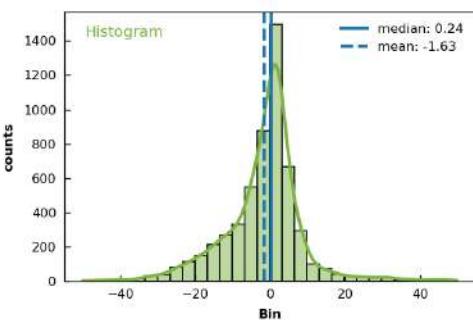
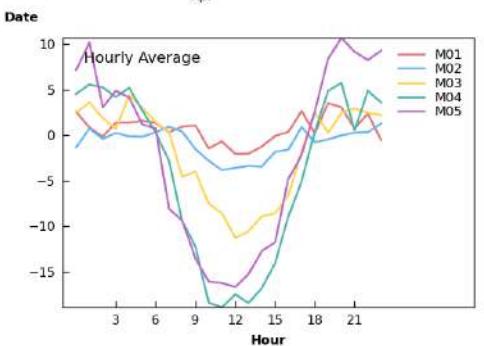
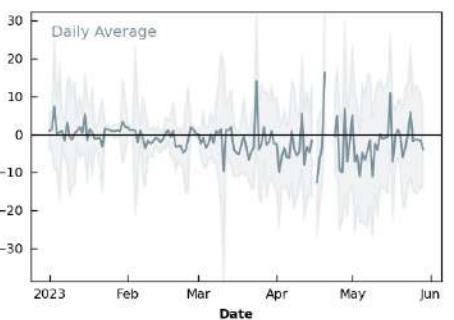
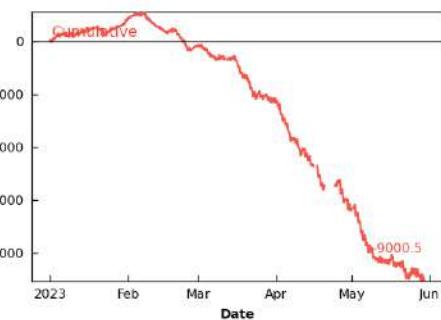
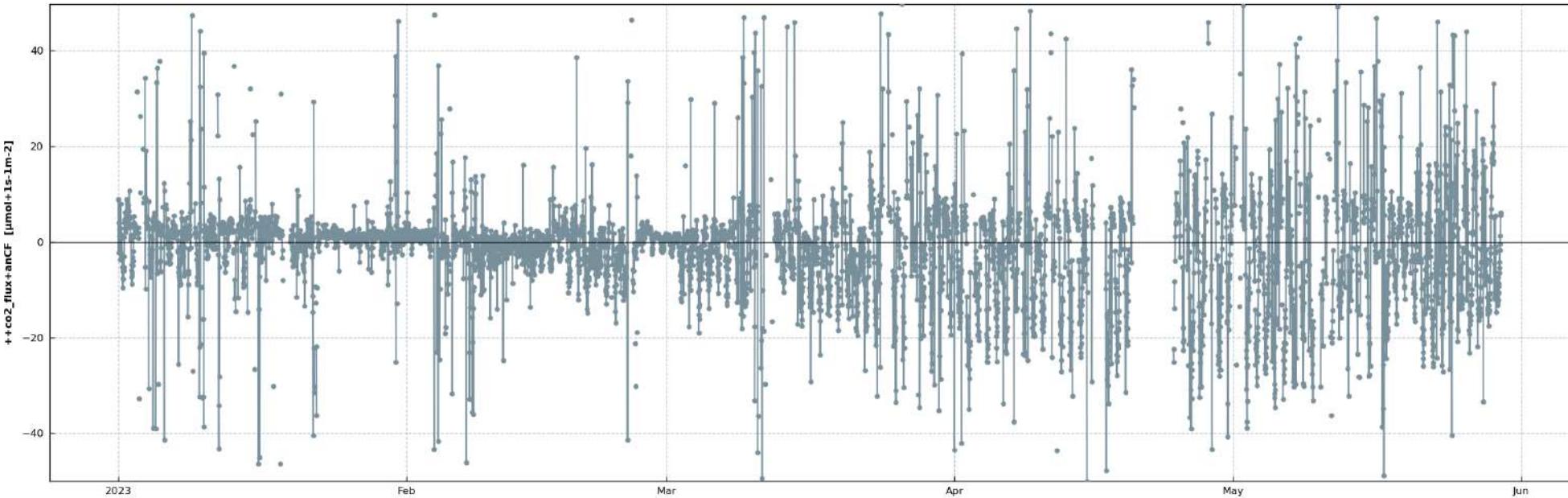
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++co2\_flux+anCF [ $\mu\text{mol}\cdot\text{s}^{-1}\text{m}^{-2}$ ]

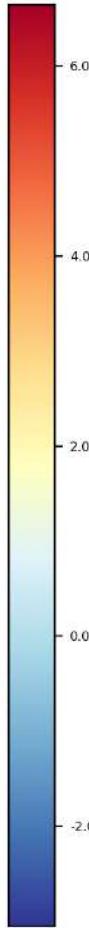
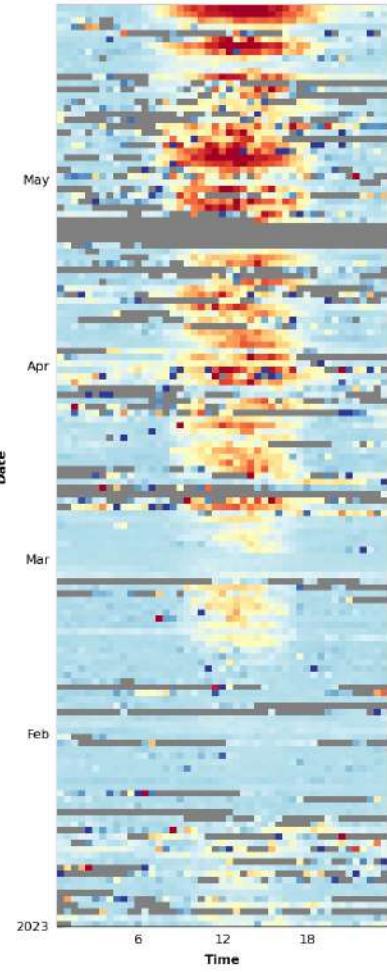
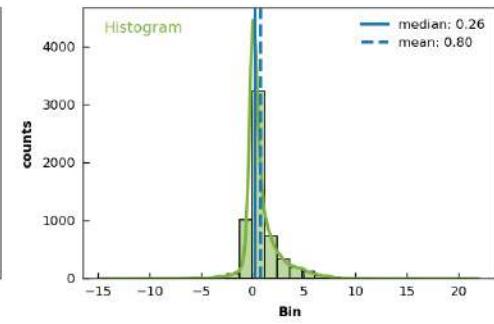
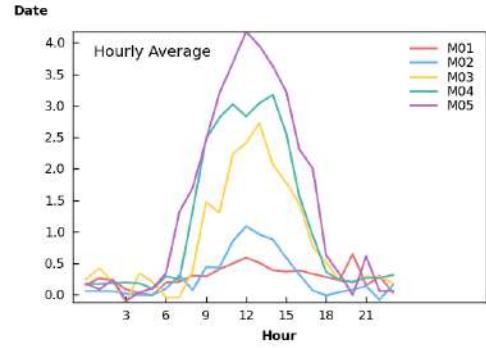
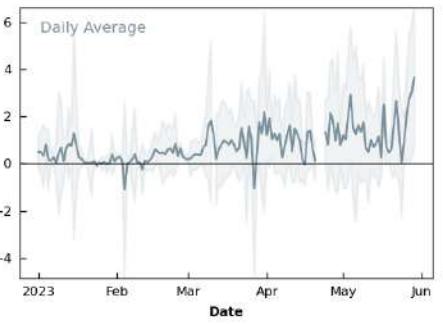
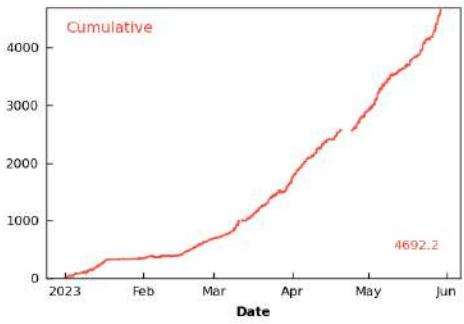
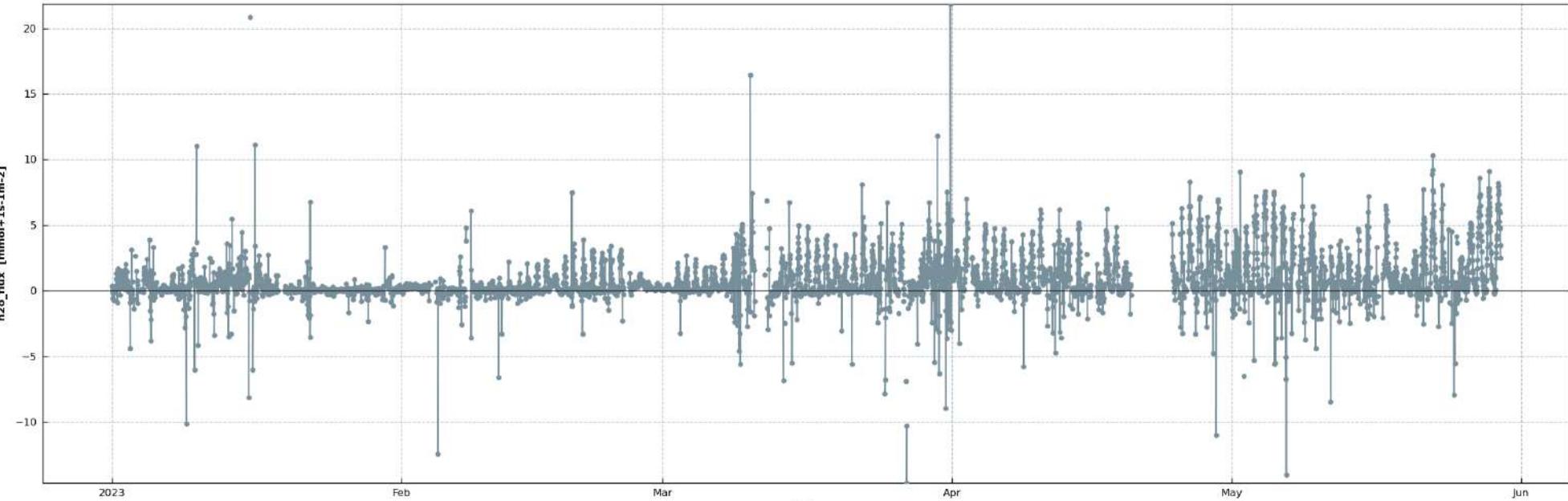
applied quality checks (qc\_co2\_flux) and absolute limits

START Year 2023 Month 1 Day 1 | END Year 2023 Month 5 Day 29 | Apply Reset



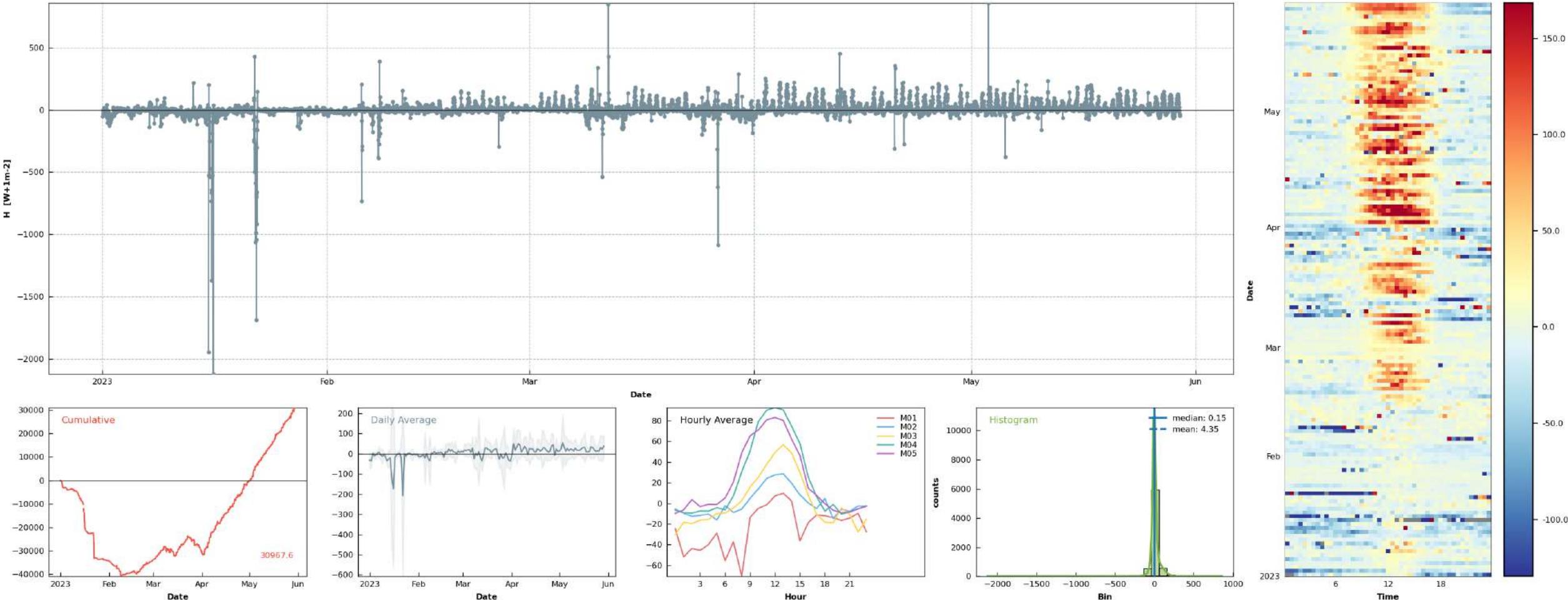
h2o\_flux [mmol+1s-1m-2]

START Year 2023 Month 1 Day 1 | END Year 2023 Month 5 Day 29 | Apply Reset



H [W+1m-2]

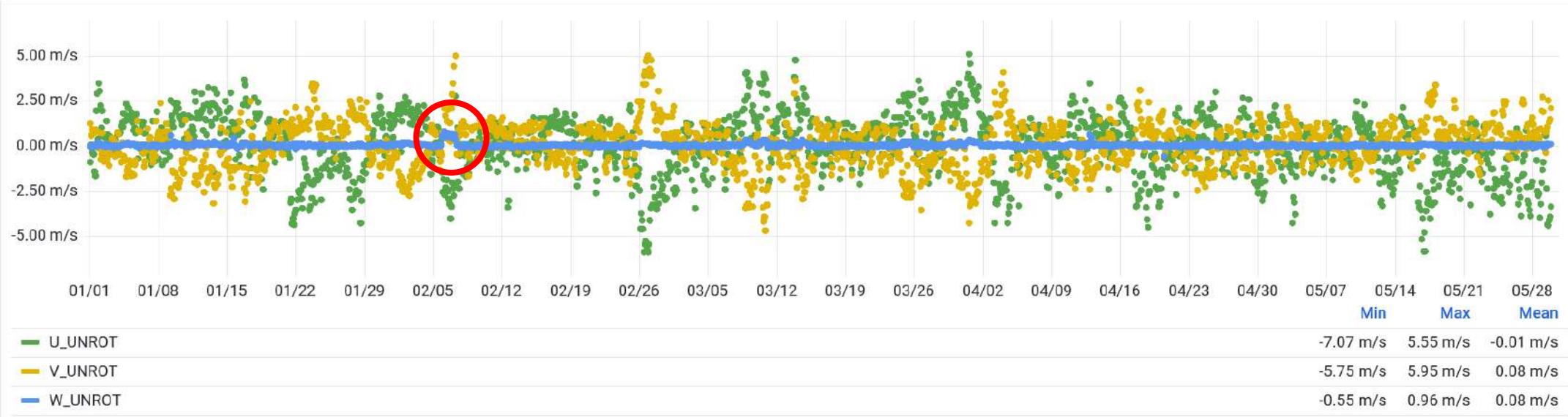
START Year 2023 Month 1 Day 1 | END Year 2023 Month 5 Day 29 | Apply Reset



### Unrotated Wind

- u, v and w
- typically between -5 and +5 m+1 s<sup>-1</sup>
- directly from the sonic

wind component w shows offset



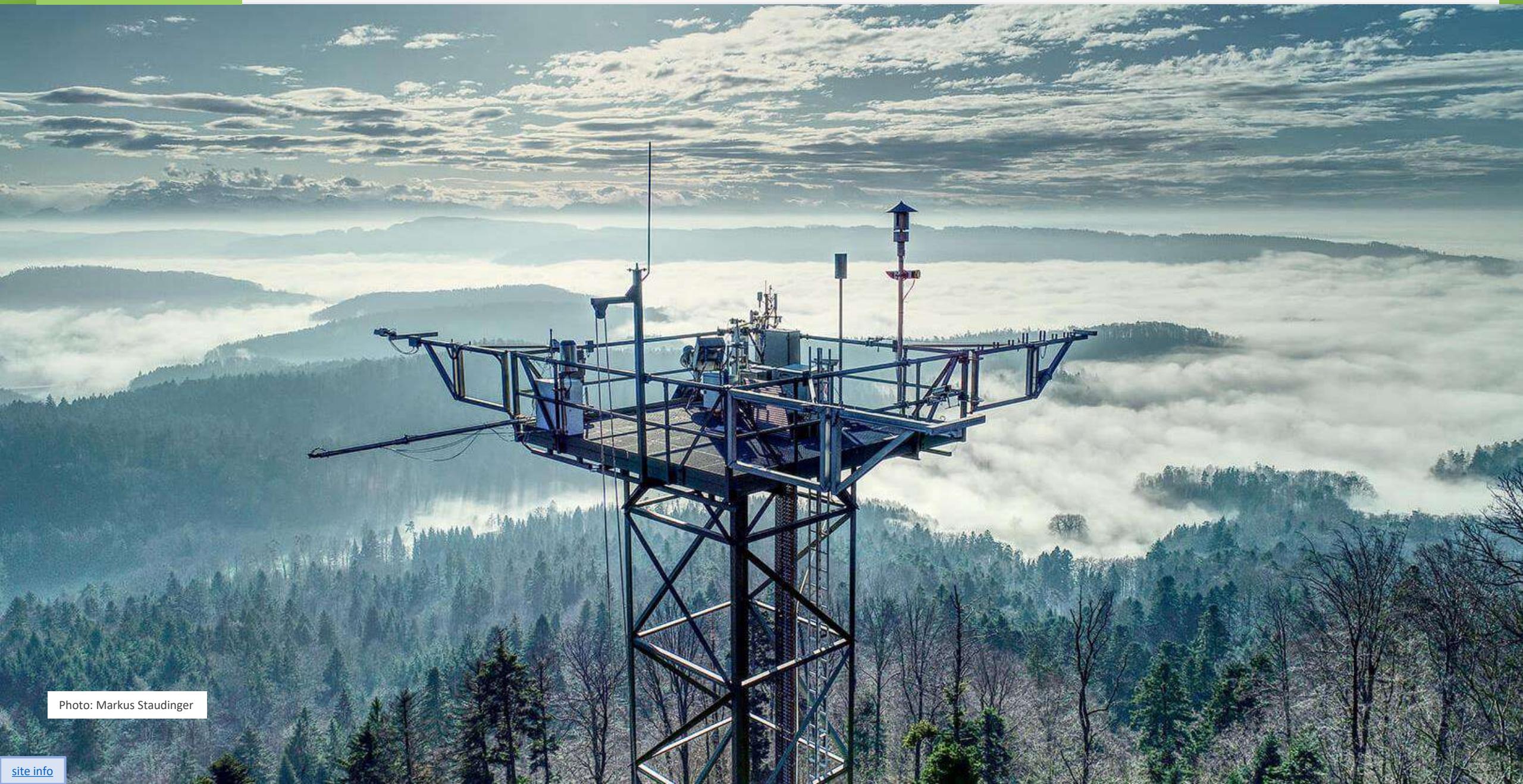
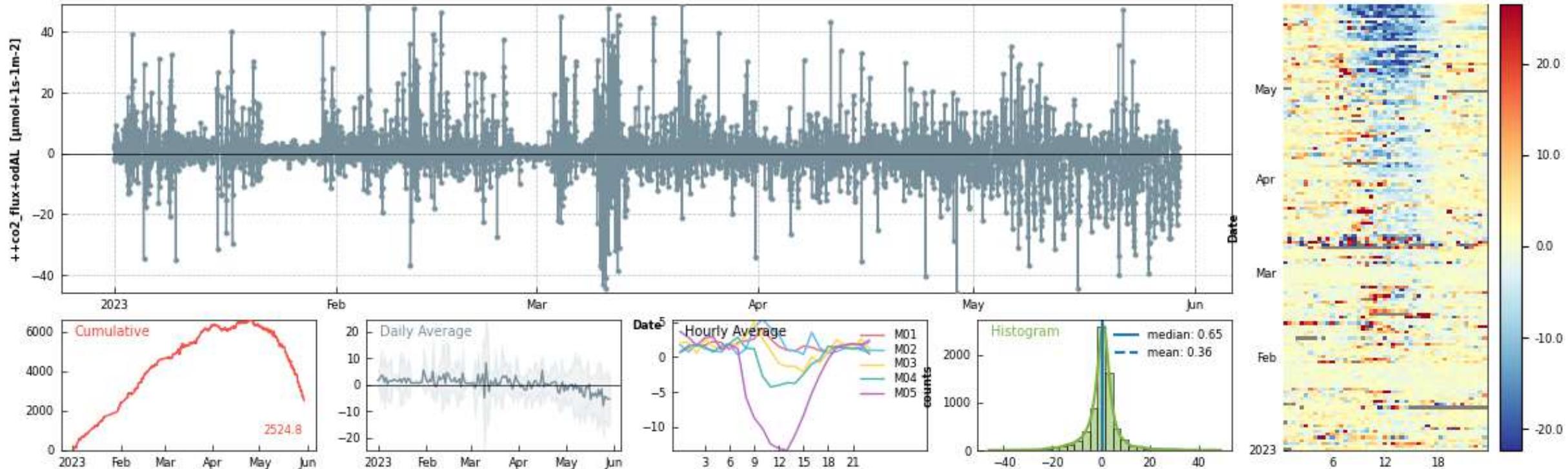
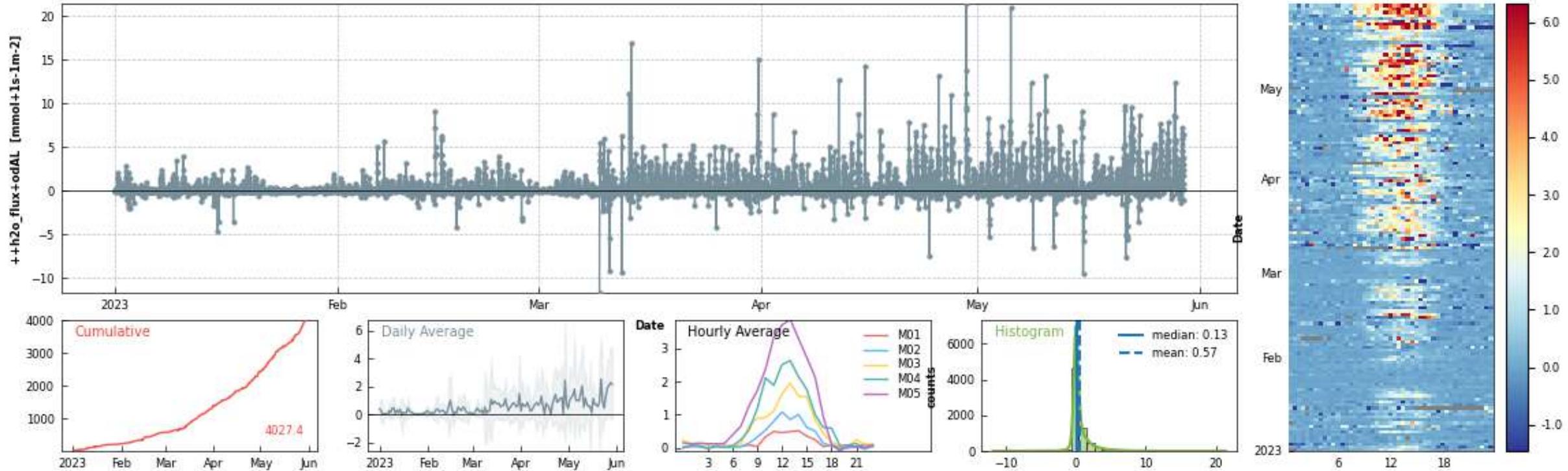
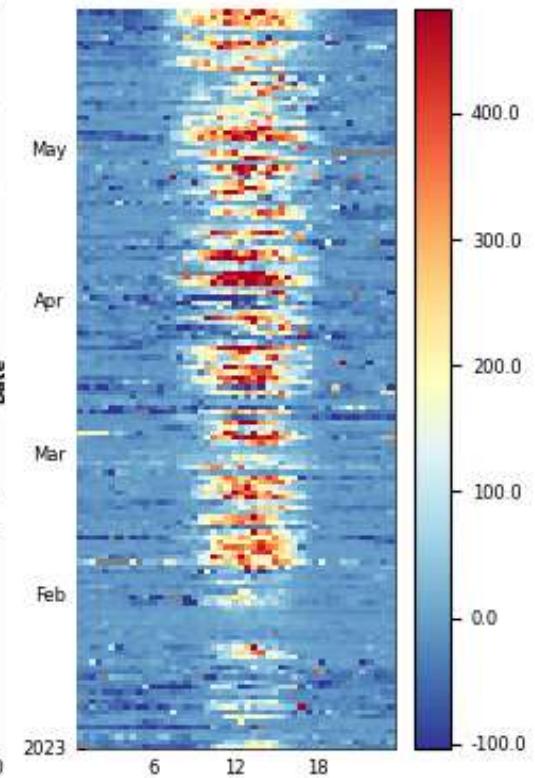
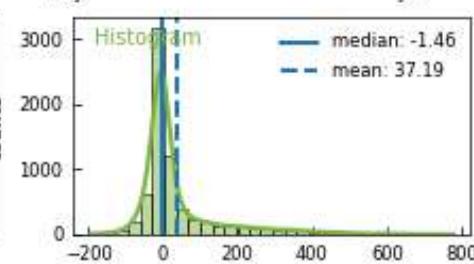
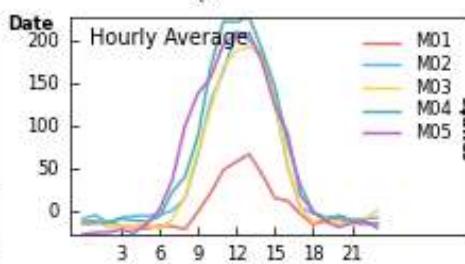
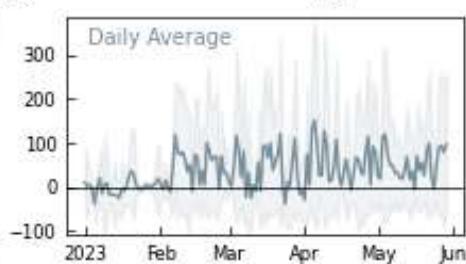
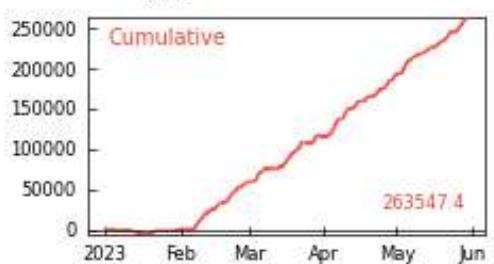
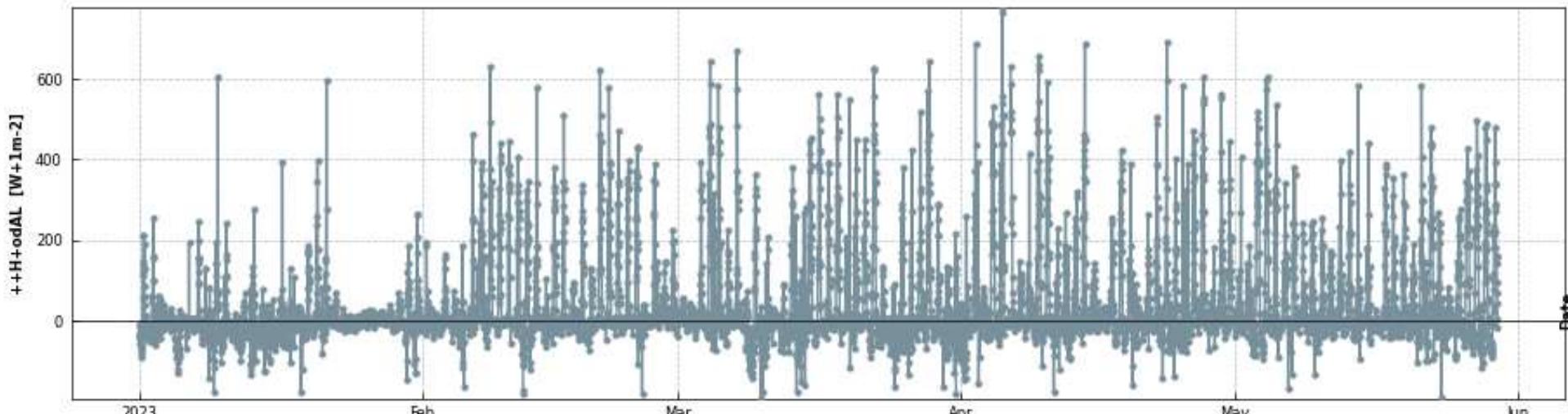


Photo: Markus Staudinger







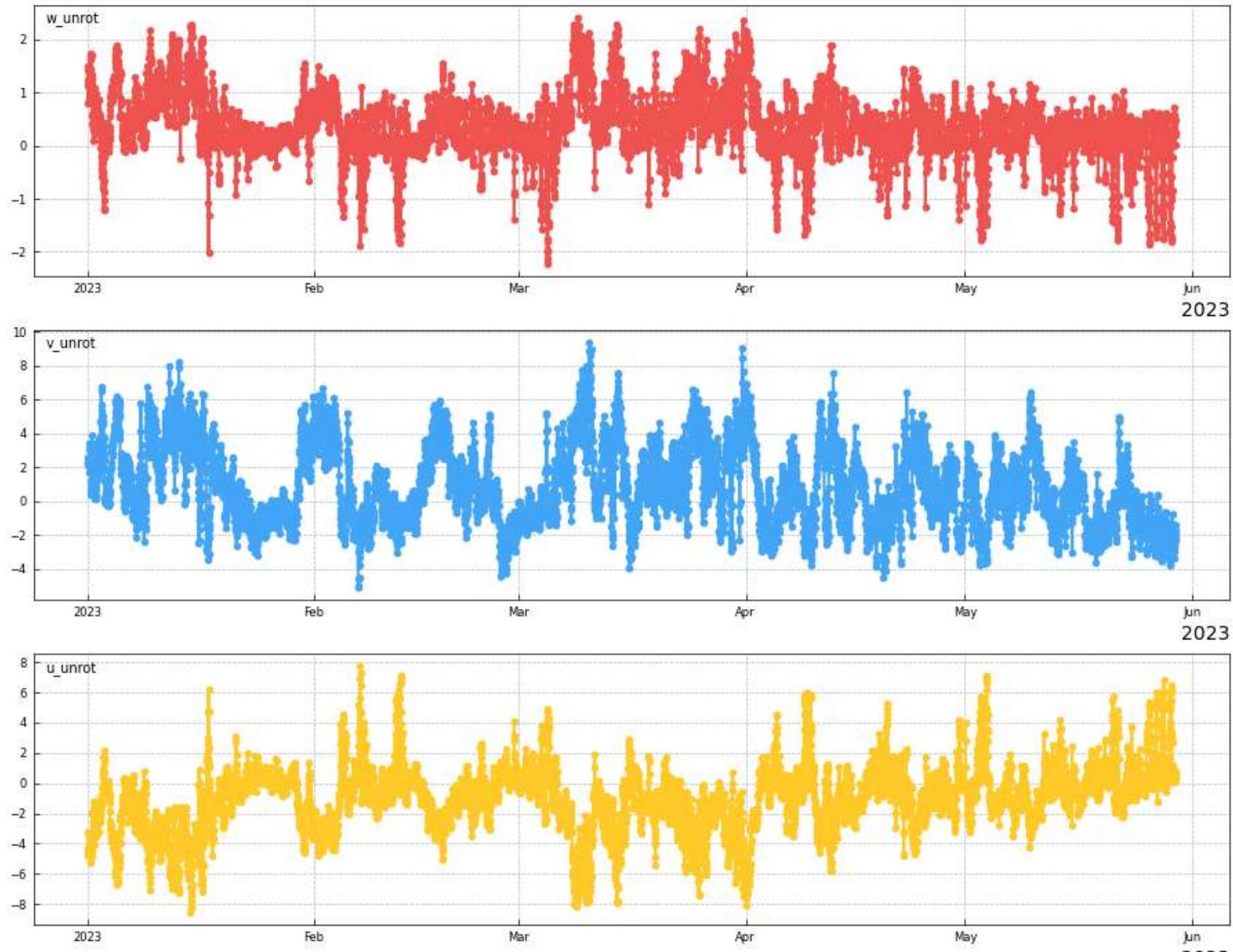
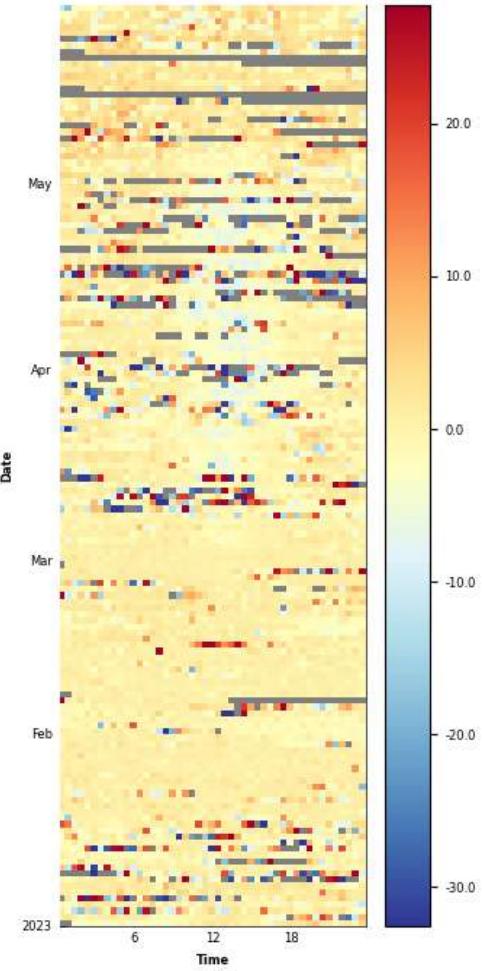
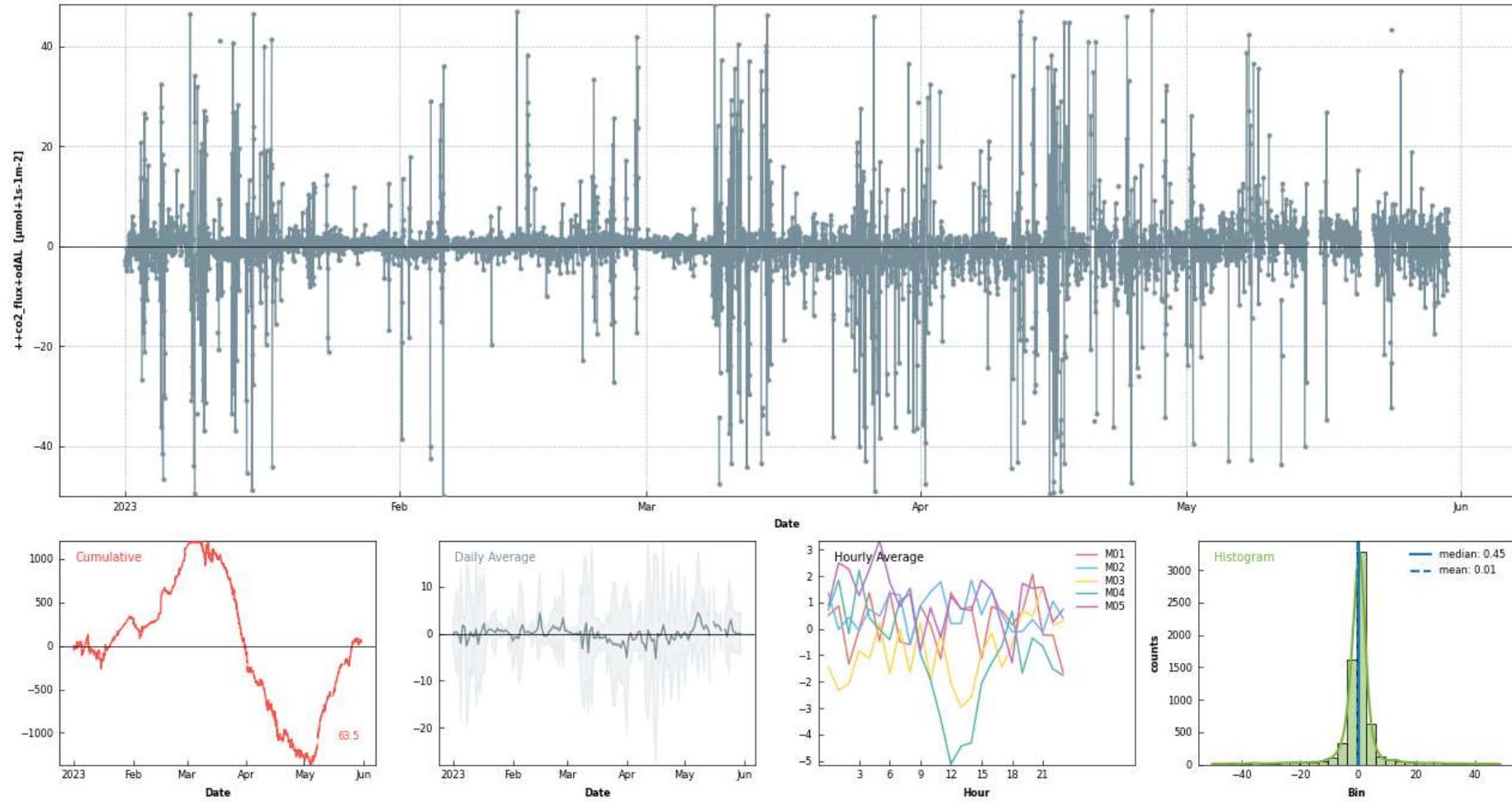
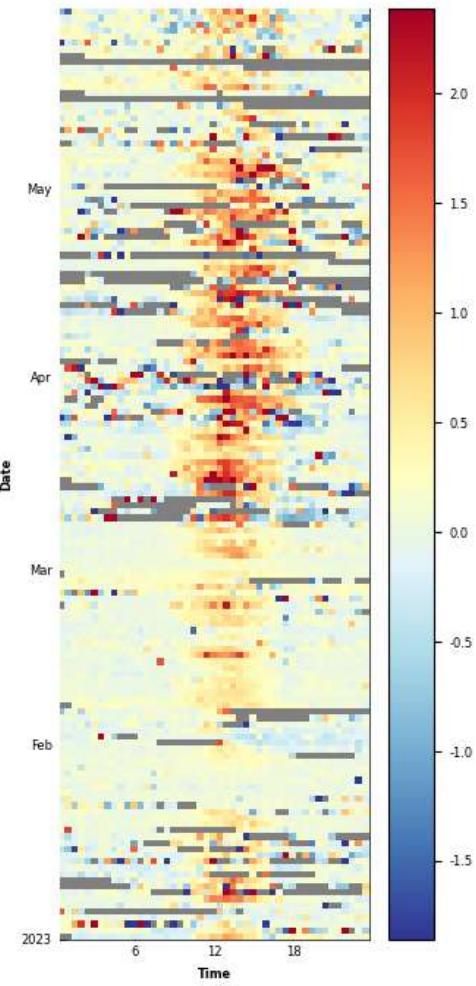
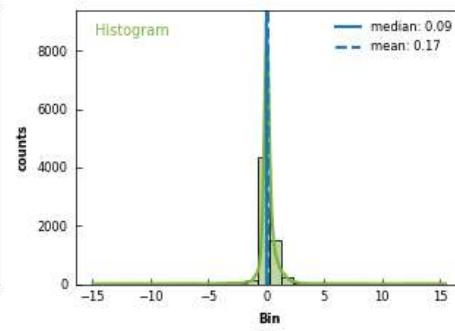
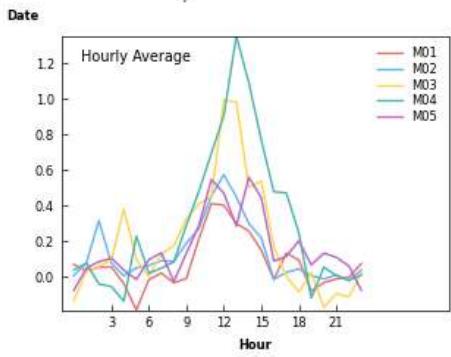
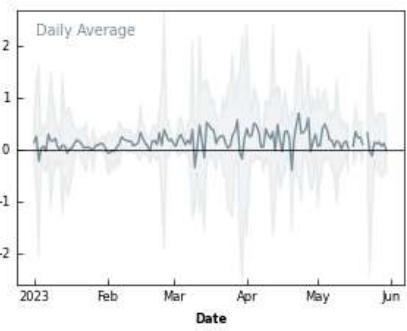
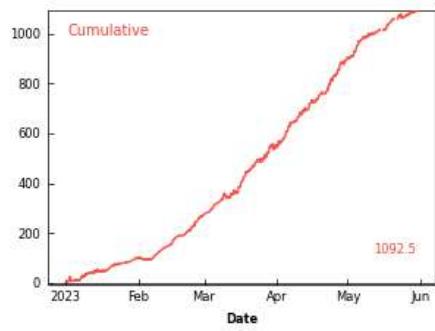
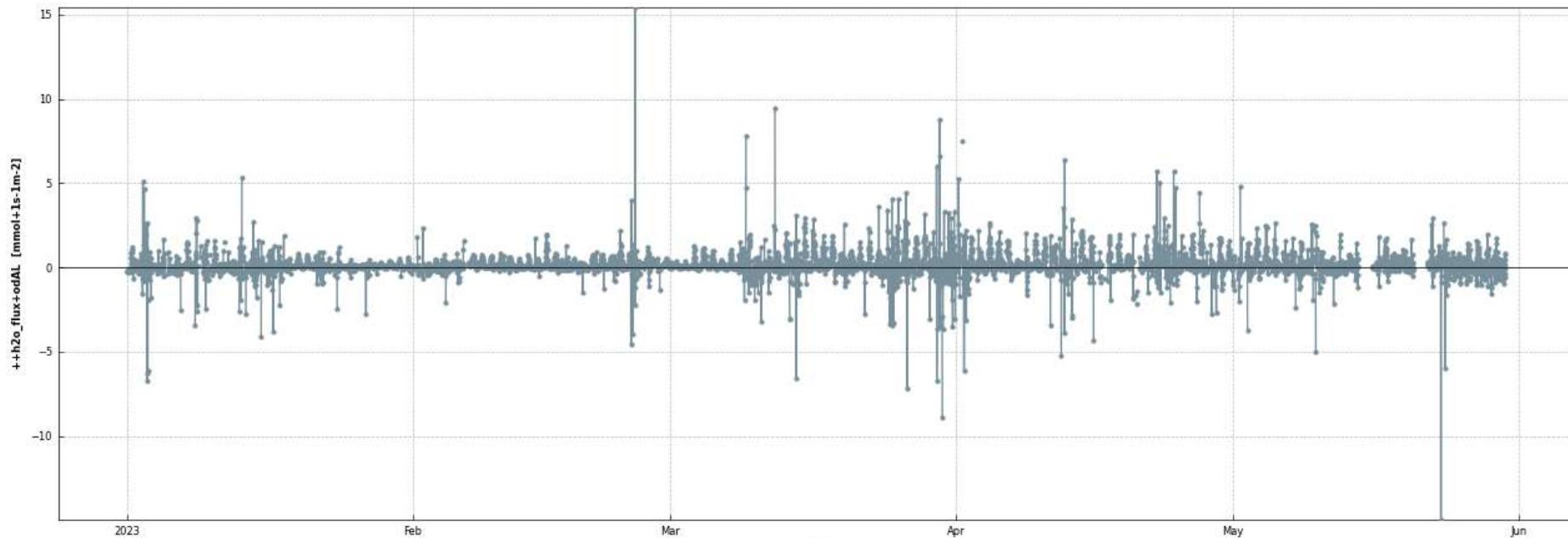
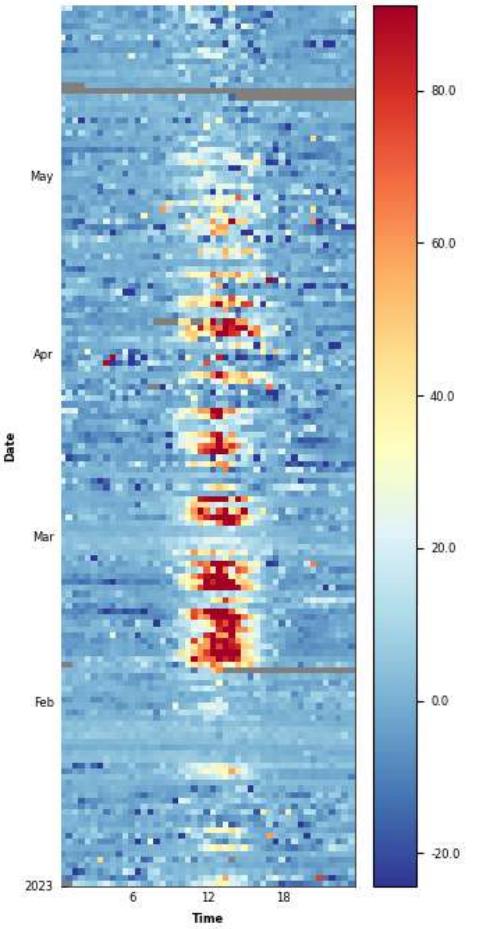
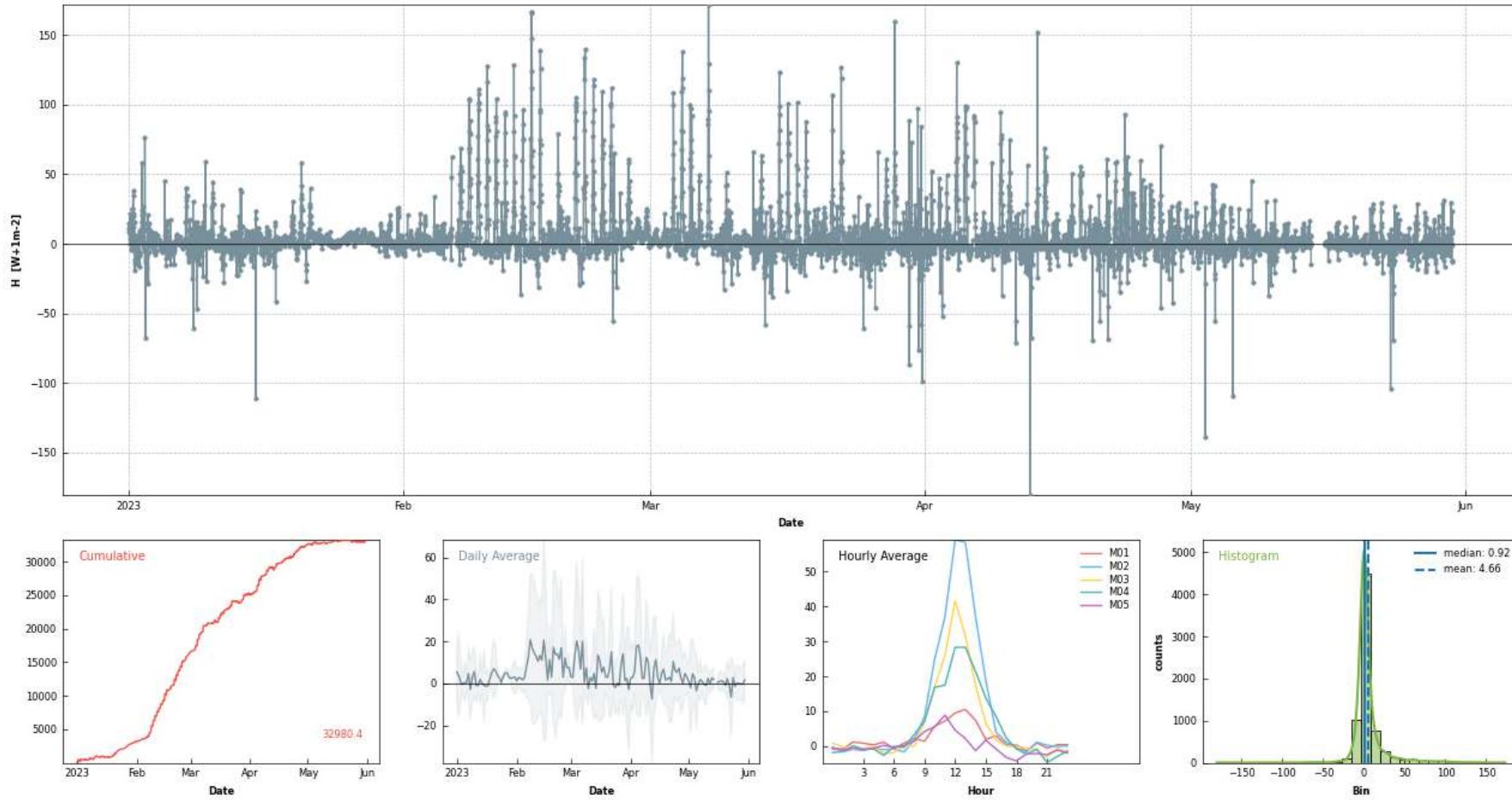


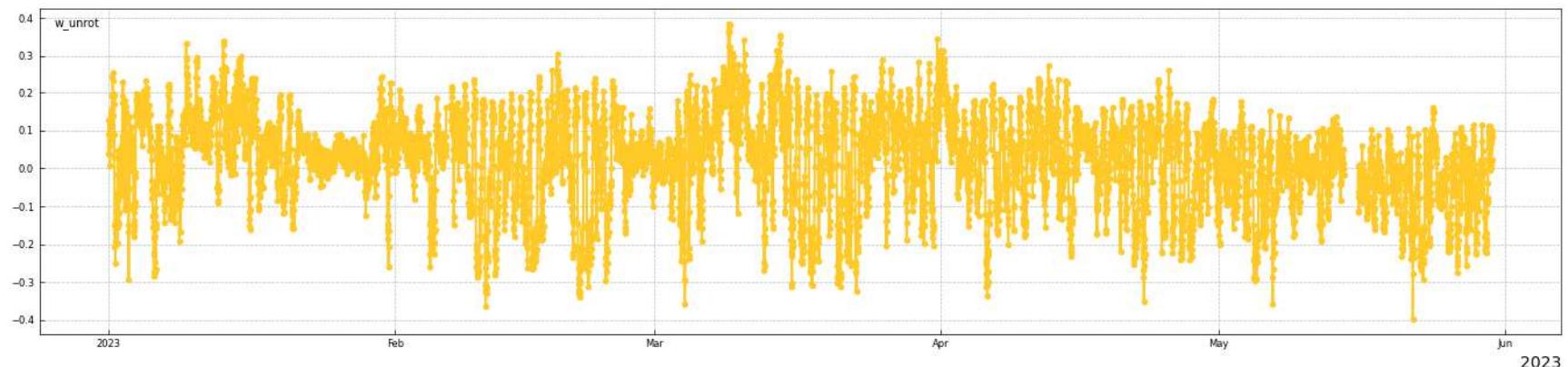
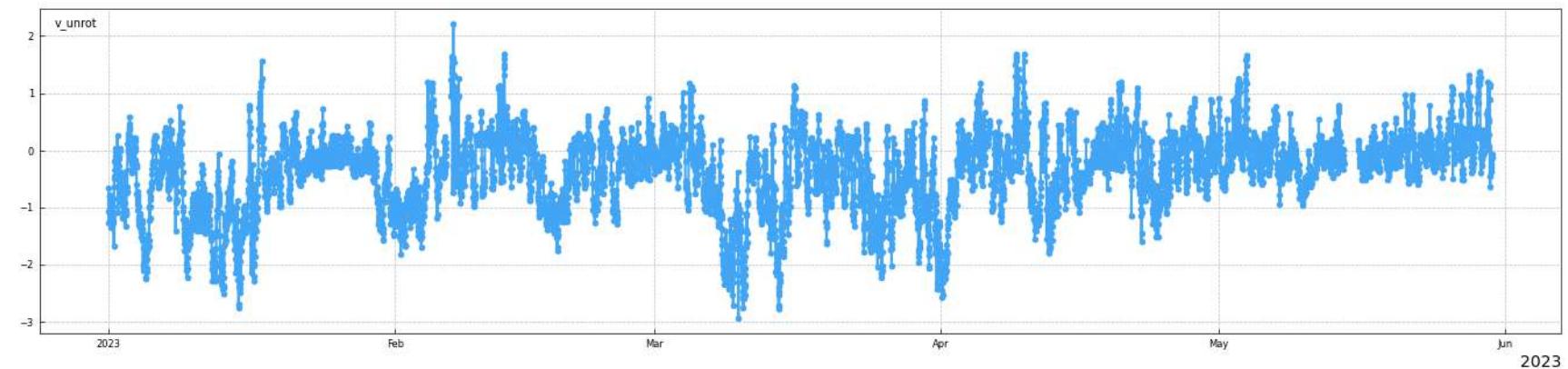
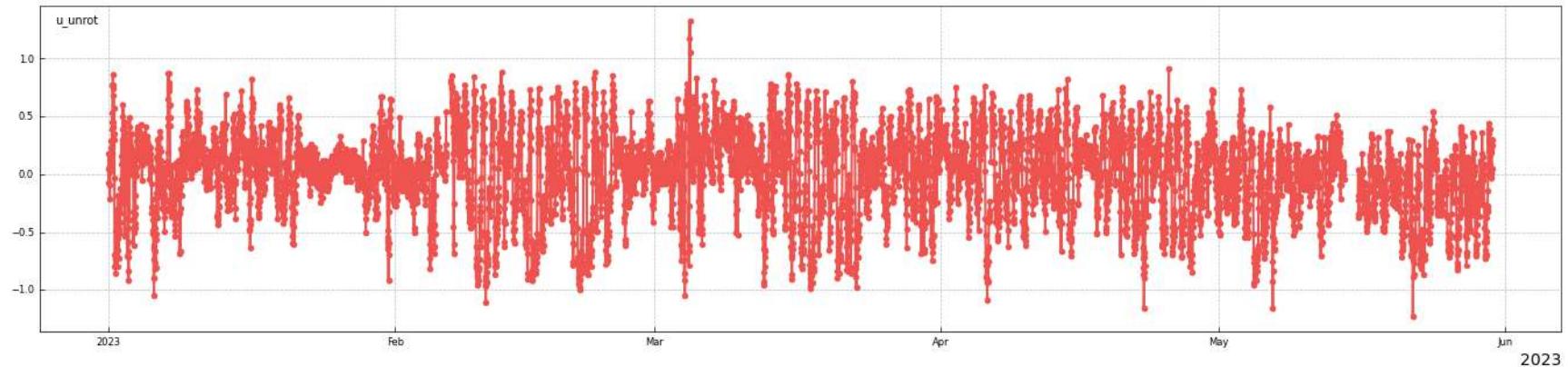


Photo: ETH GL Group









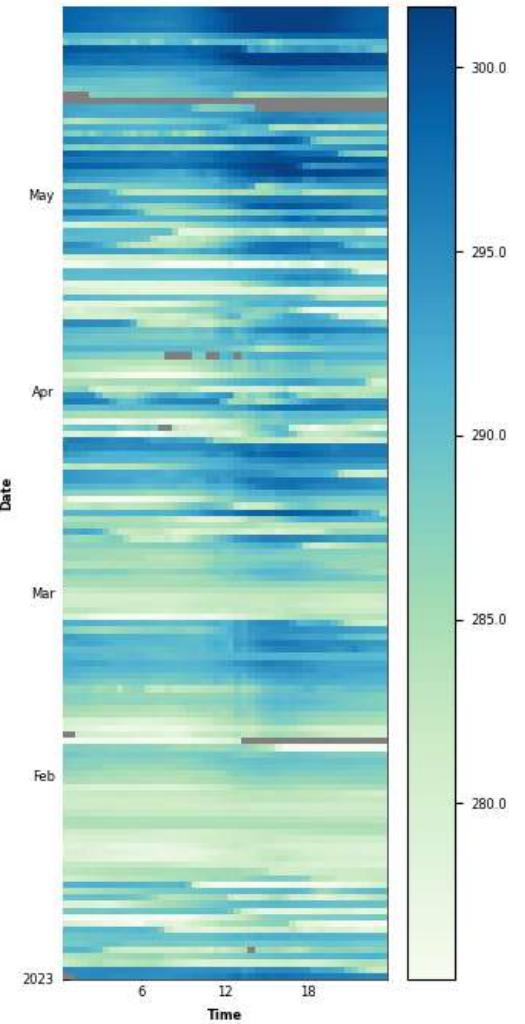
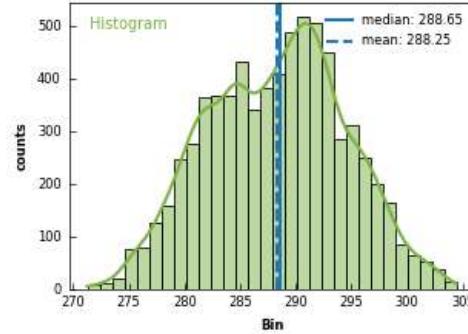
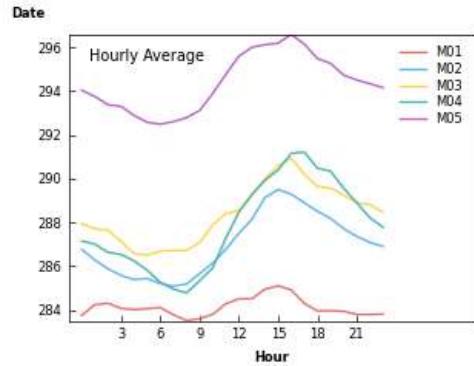
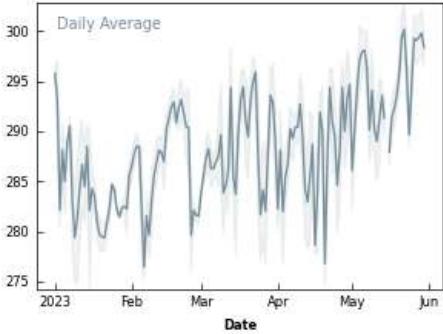
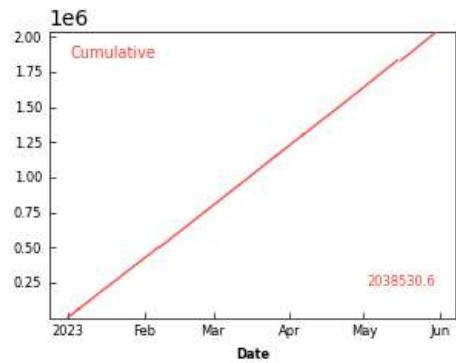
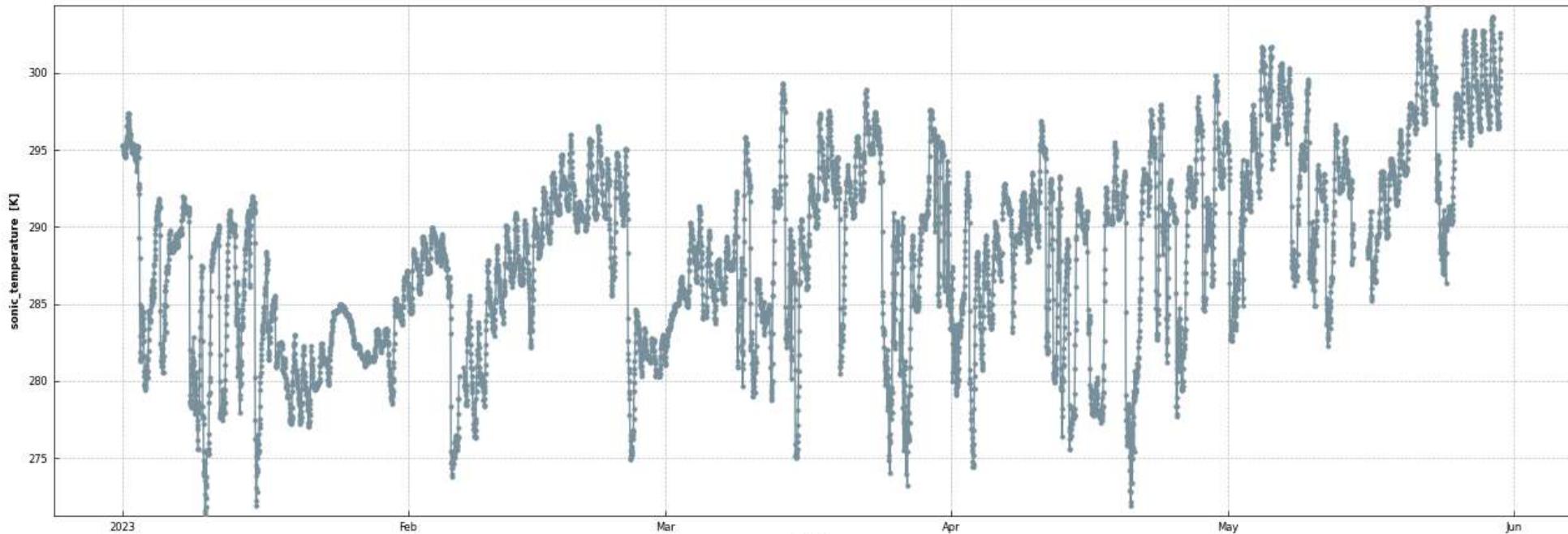




Photo: Regine Maier

