

# SAVANT 2018

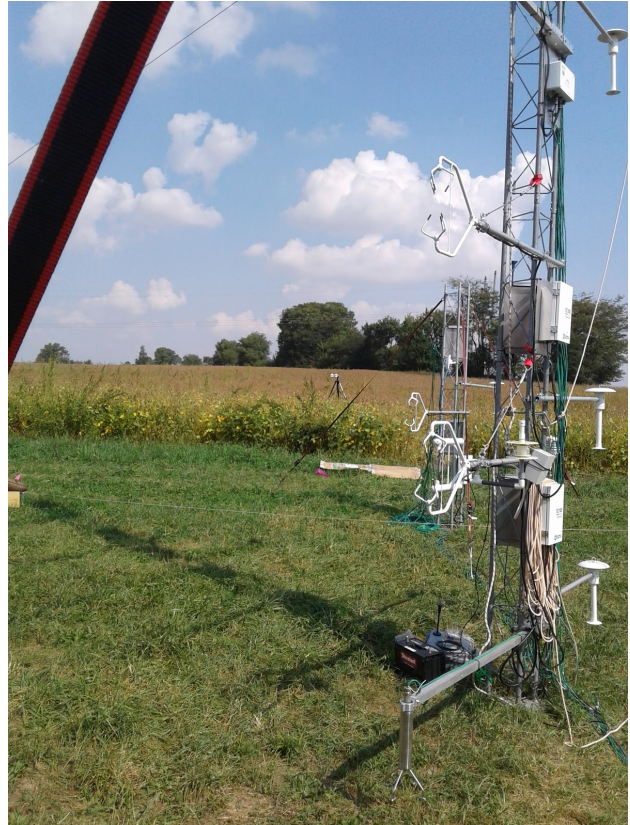
## ISFS High Rate Surface Meteorology and Flux Products Data Report: Intensive Operating Periods

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## Websites

SAVANT Homepage: [https://www.eol.ucar.edu/field\\_projects/savant](https://www.eol.ucar.edu/field_projects/savant)

SAVANT Field Catalog: <http://catalog.eol.ucar.edu/savant/tools/missions>

ISFS Operations during SAVANT: <https://www.eol.ucar.edu/content/isfs-savant>

ISFS Homepage: <https://www.eol.ucar.edu/node/152>

## Related Documentation

netCDF File Conventions: <https://www.eol.ucar.edu/content/isfs-netcdf-files>

ISFS Guides: <https://www.eol.ucar.edu/content/isfs-guides>

## Dataset Citation

If these data are used for research resulting in publications or presentations, please acknowledge EOL and NSF and include the following citations in your paper as appropriate:

*NCAR/EOL In-situ Sensing Facility. 2021. SAVANT: NCAR/EOL ISFS High Rate Surface Meteorology and Flux Products. Version 1.0. UCAR/NCAR - Earth Observing Laboratory. <https://doi.org/10.26023/BV8X-1090-180Z>. Accessed 19 Apr 2021.*

## High rate data during IOPs and additional requested dates

Time resolution = Up to 1s - refer to <https://www.eol.ucar.edu/content/isfs-netcdf-files>

Geographic coordinates = Yes

Tilt corrected = Yes

High rate data have been generated for the SAVANT Intensive Operating Periods (IOP) and specific dates requested by the PI's. Note that data samples have been removed where the GPS times are mis-matched with the system clock times. Refer to **Table 1** below for a list of IOP dates and UTC times. Included are sites that were removed due to asynchronous time stamps when re-gridding onto the 1s time grid. The GPS is the reference clock and high rate sampling uses the nearest-in-time approach.

**Note, this is final data - there are no plans to apply additional data QC processing.**

IOP #	Start Date UTC	End Date UTC	Sites removed due to asynchronous time stamps
2	2018-09-30 03:00	2018-09-30 06:30	uconv2
3	2018-10-12 06:00	2018-10-12 12:00	
4	2018-10-16 04:23	2018-10-16 11:30	initm
5	2018-10-18 04:00	2018-10-18 12:00	
6	2018-10-24 04:00	2018-10-24 12:00	p4, initm
7	2018-10-28 01:00	2018-10-28 04:00	
8	2018-10-29 22:30	2018-10-30 06:00	
9	2018-11-03 00:00	2018-11-03 13:00	
10	2018-11-08 01:00	2018-11-08 05:00	
11	2018-11-11 00:00	2018-11-11 05:00	
12	2018-11-12 00:00	2018-11-12 06:00	
13	2018-11-14 04:00	2018-11-14 13:00	lconvm
PI Request - full days			
Oct-10	2018-10-10 00:00	2018-10-10 23:59	
Oct-18	2018-10-18 00:00	2018-10-18 23:59	initm
Oct-21	2018-10-21 00:00	2018-10-21 23:59	p4, initm
Oct-25	2018-10-25 00:00	2018-10-25 23:59	p4, initm
Nov-4	2018-11-04 00:00	2018-11-04 23:59	uconv1
Nov-10	2018-11-10 00:00	2018-11-10 23:59	

Table 1. IOPs, requested full days and sites removed due to asynchronous time stamps.

Measurements from the following sensors are included in the high rate product:

- Gill 2D sonic WindObserver - U, V, Tc
- NCAR hygrothermometer (TRH) - T, RH
- CSAT 3AW sonic anemometer - u, v, w, tc
- CSAT EC-150 IRGA - h2o, co, Pirga, Tirga, diagnostic variables
- Paroscientific 6000 and Vaisala PTB barometers - P

Refer to '[ISFS Operations during SAVANT](#)' report for a list of tower site names and locations, as well as, detailed documentation on sensor issues during operations.

## Known Data Issues

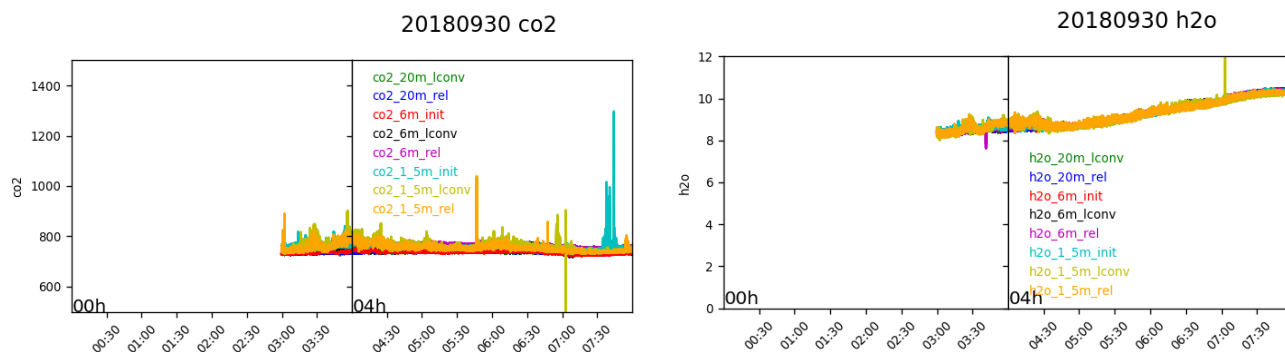
### H<sub>2</sub>O/CO<sub>2</sub> IRGA

CSAT EC-150 infrared absorption gas analyzers were used for H<sub>2</sub>O and CO<sub>2</sub>. Field staff noted very large CO<sub>2</sub> values at night early in the project, as respired air built up in the gully, that probably are real. These sensors did have some short-duration resets that may have been related to power availability. Also, frequent dew formation at night caused readings to be overly high. For the high-rate data files, we have implemented a filter removing data when the 5min average H<sub>2</sub>O deviates by more than 2 g/kg from the mean of the TRH H<sub>2</sub>O values. This conservative filter still has some values that clearly are not correct, especially as the dew forms.

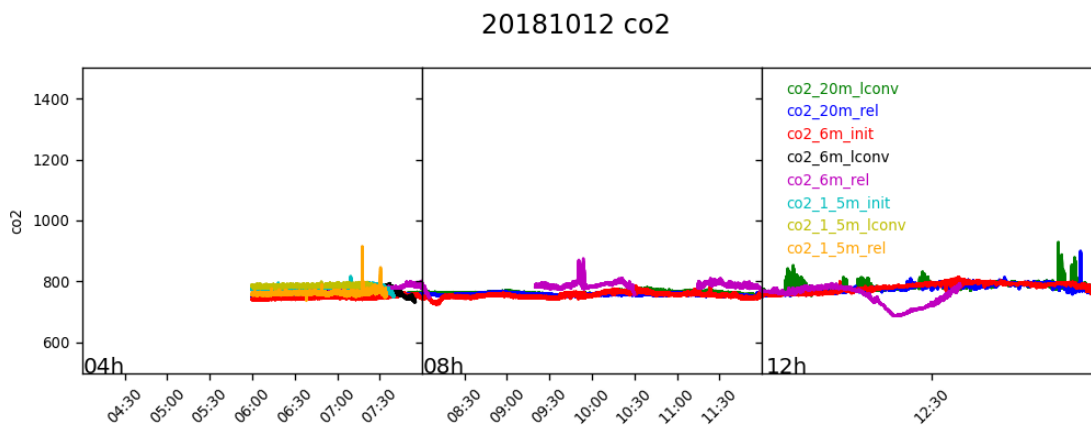
Specific notes: ec150.1.5m.lconv had a bad EC100 configuration (only CSAT) until 20 Sep.

Preview plots of CO<sub>2</sub> and H<sub>2</sub>O for all IOPs are shown below for user assessment.

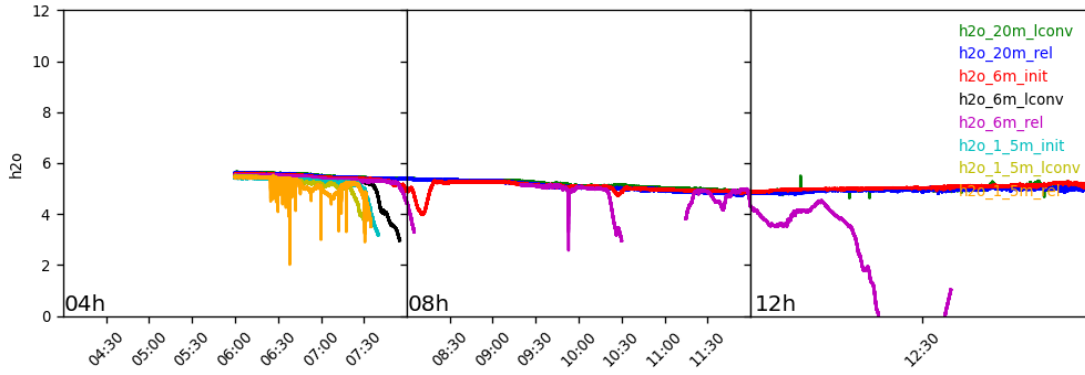
### IOP 02 2018-09-30



### IOP 03 2018-10-12

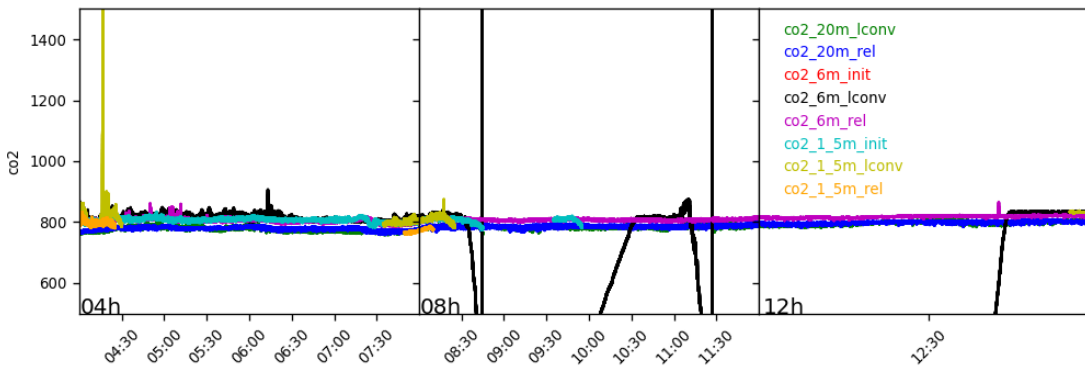


20181012 h2o

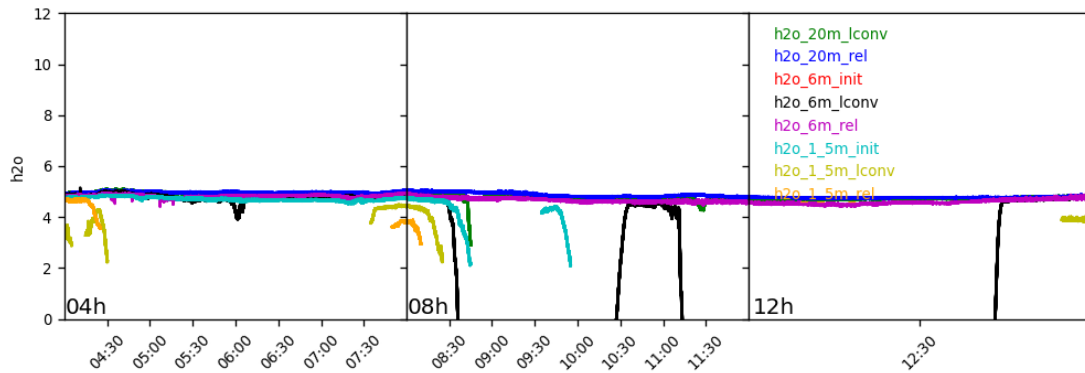


IOP 04 2018-10-16

20181016 co2



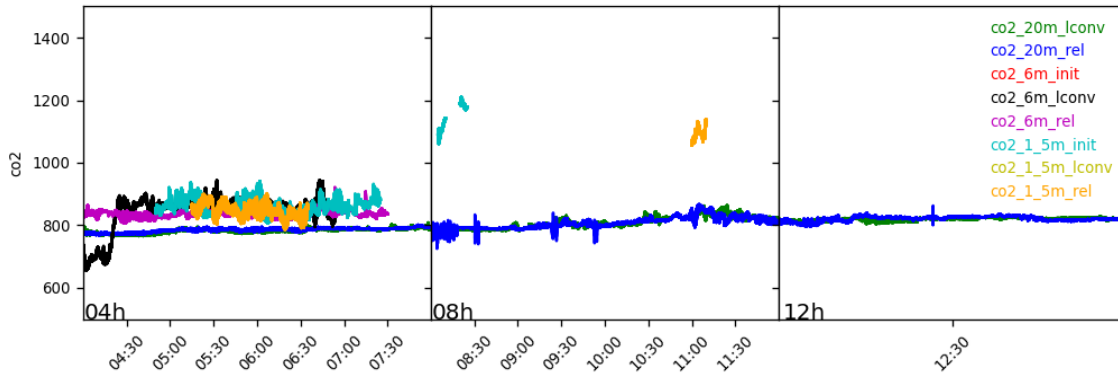
20181016 h2o



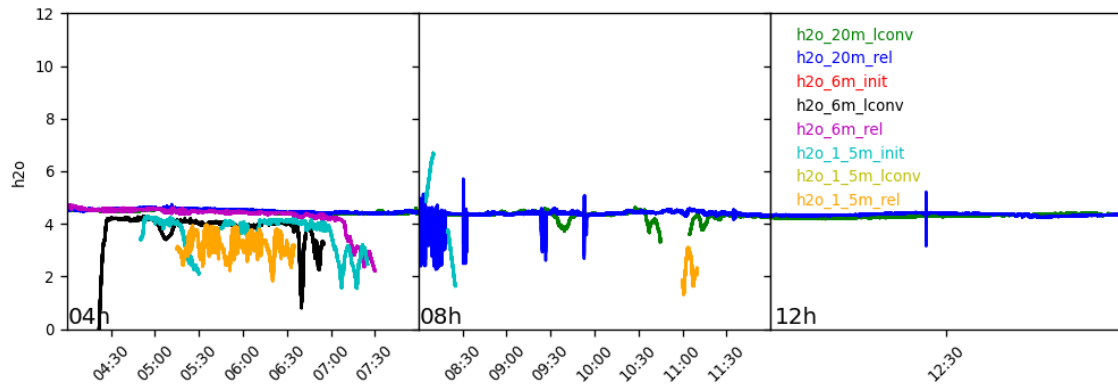


IOP 05 2018-10-18

20181018 co2

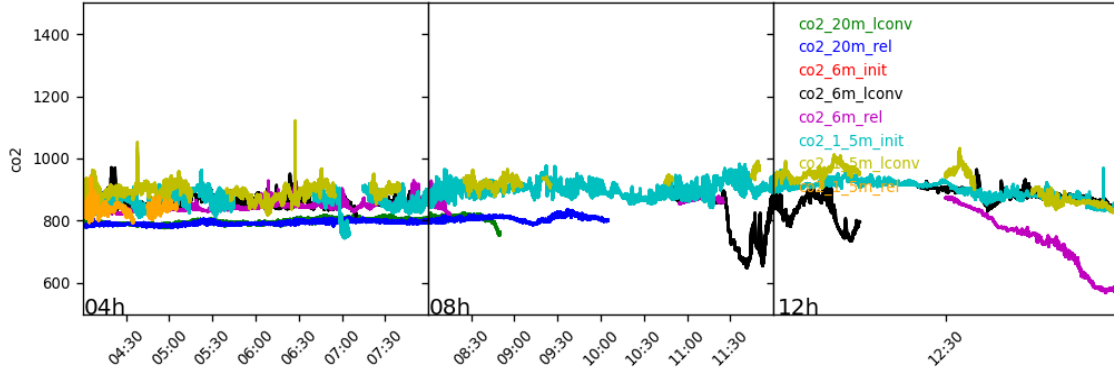


20181018 h2o

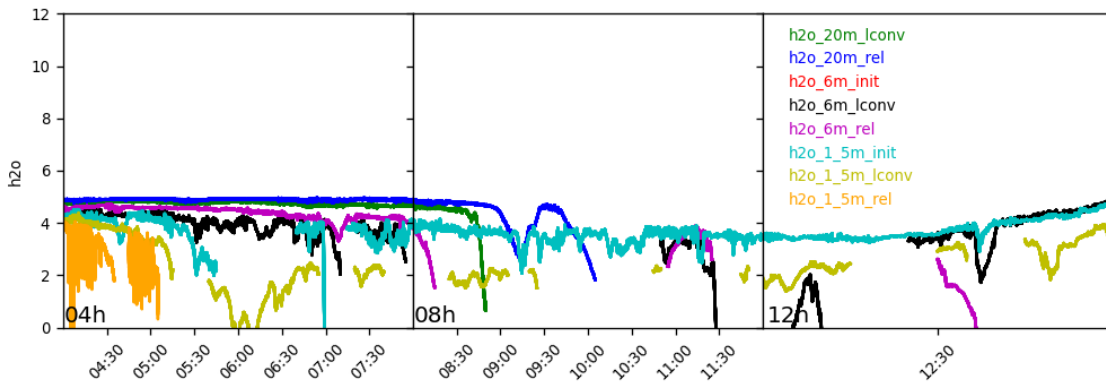


IOP 06 2018-10-24

20181024 co2

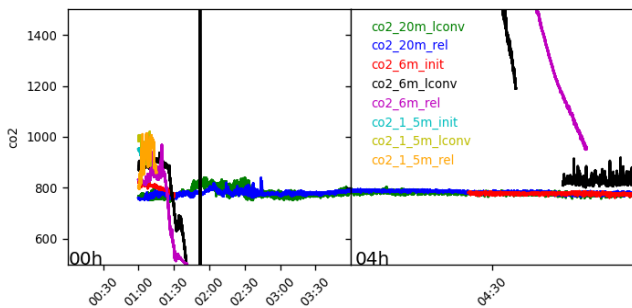


20181024 h2o

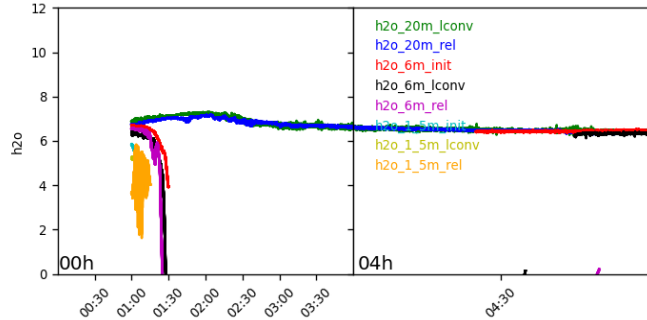


IOP 07 2018-10-28

20181028 co2

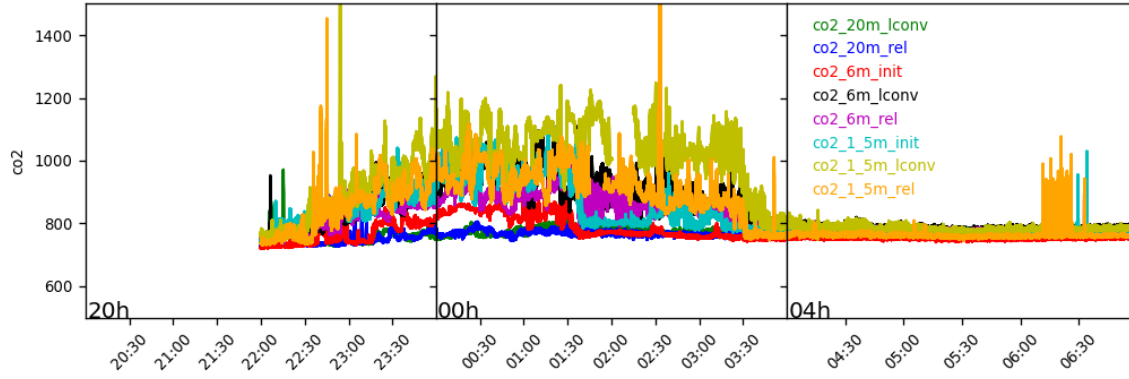


20181028 h2o

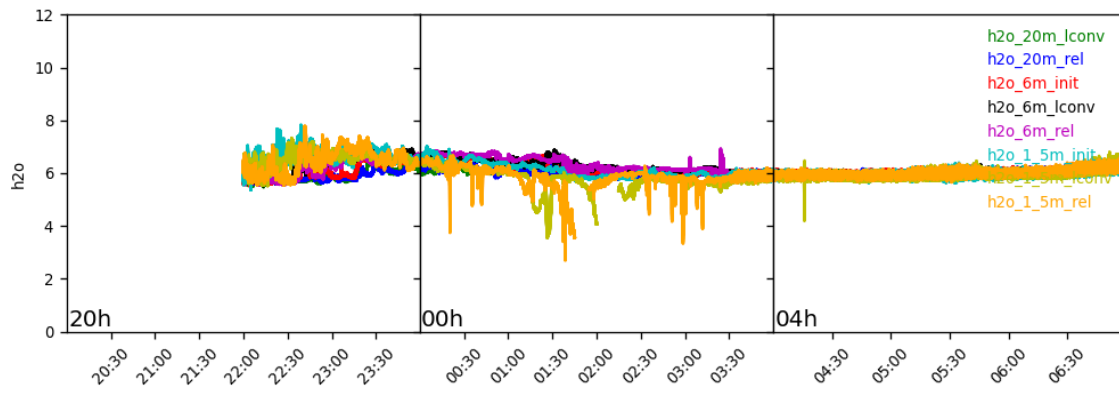


IOP 08 2018-10-29

20181030 co2



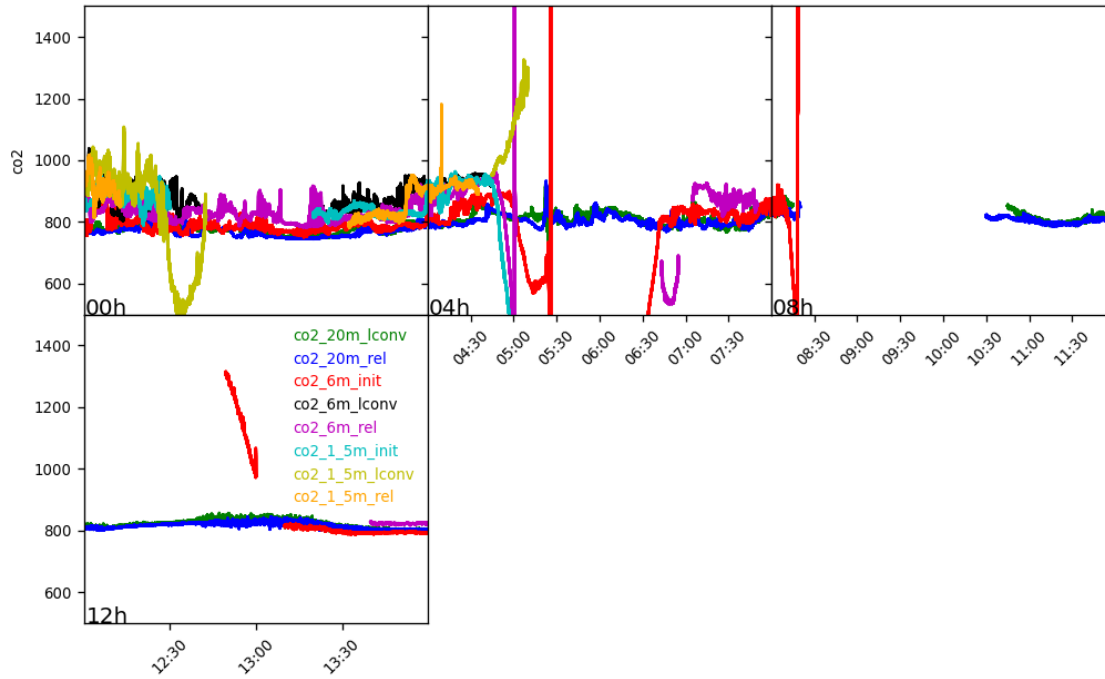
20181030 h2o



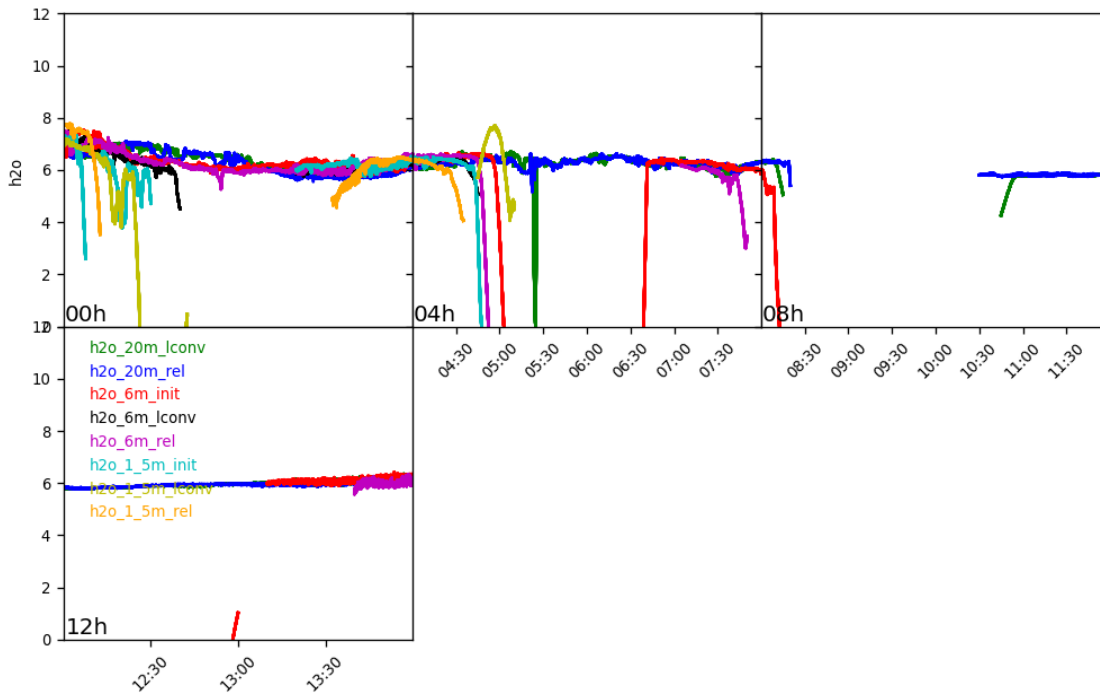


IOP 09 2018-11-03

20181103 co2

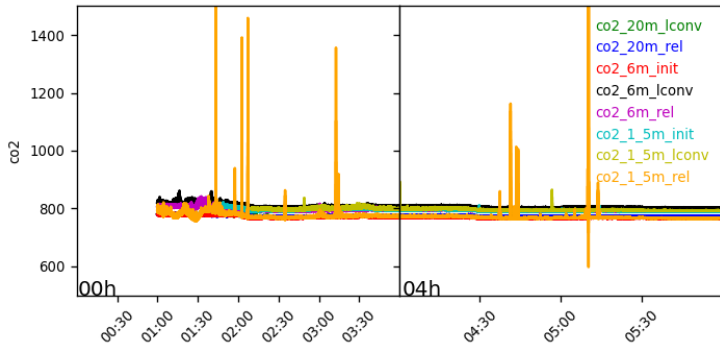


20181103 h2o

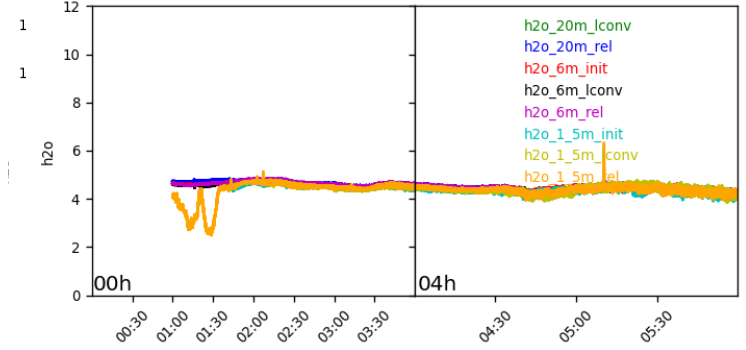


IOP 10 2018-11-08

20181108 co2

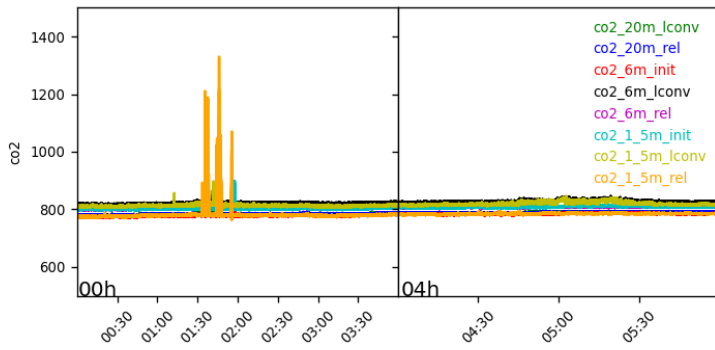


20181108 h2o

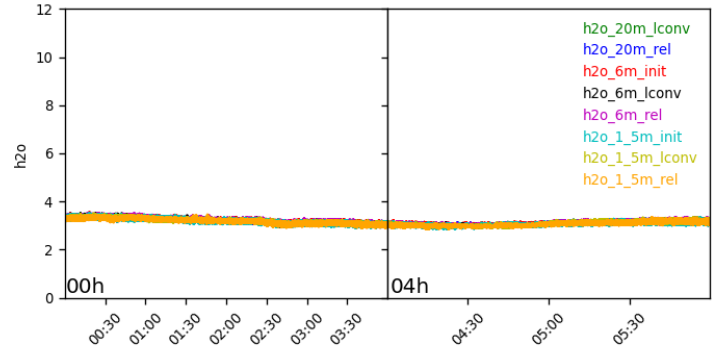


IOP 11 2018-11-11

20181111 co2

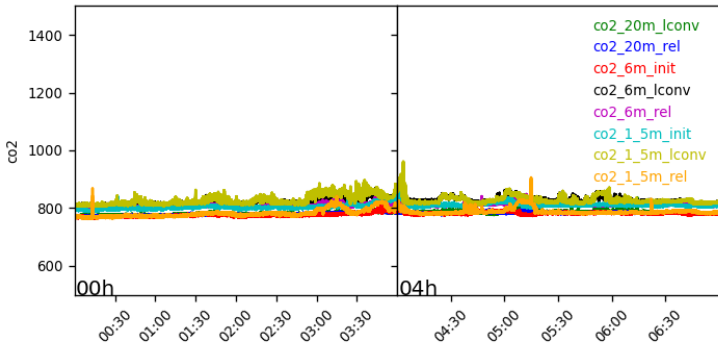


20181111 h2o

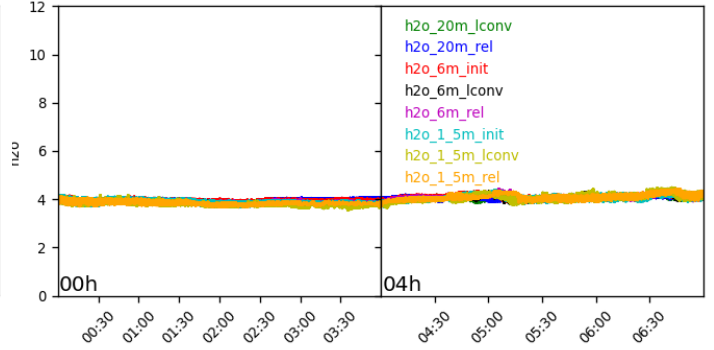


IOP 12 2018-11-12

20181112 co2

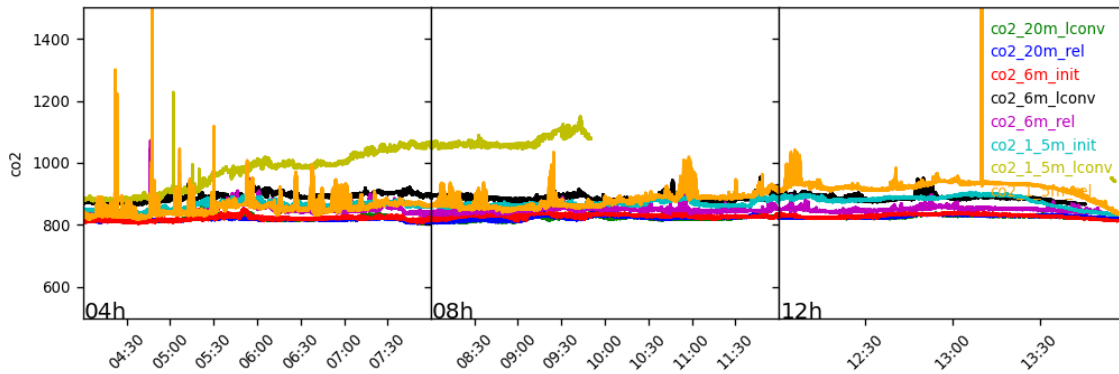


20181112 h2o

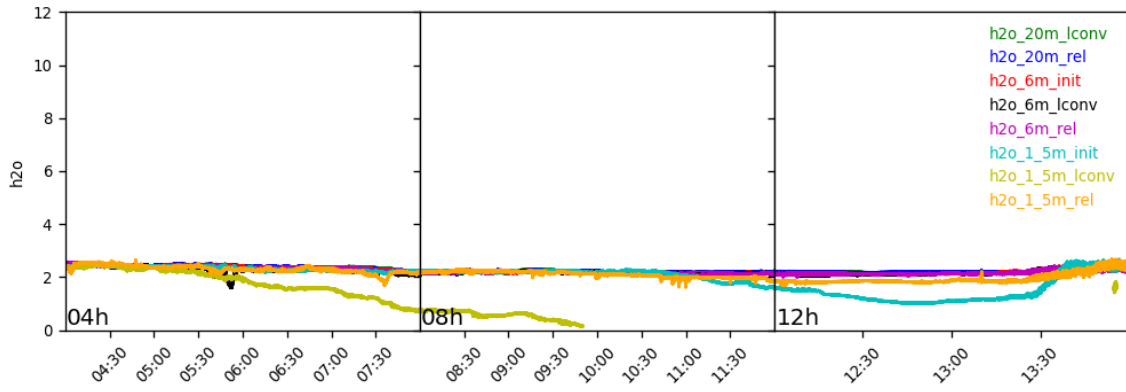


IOP 13 2018-11-14

20181114 co2



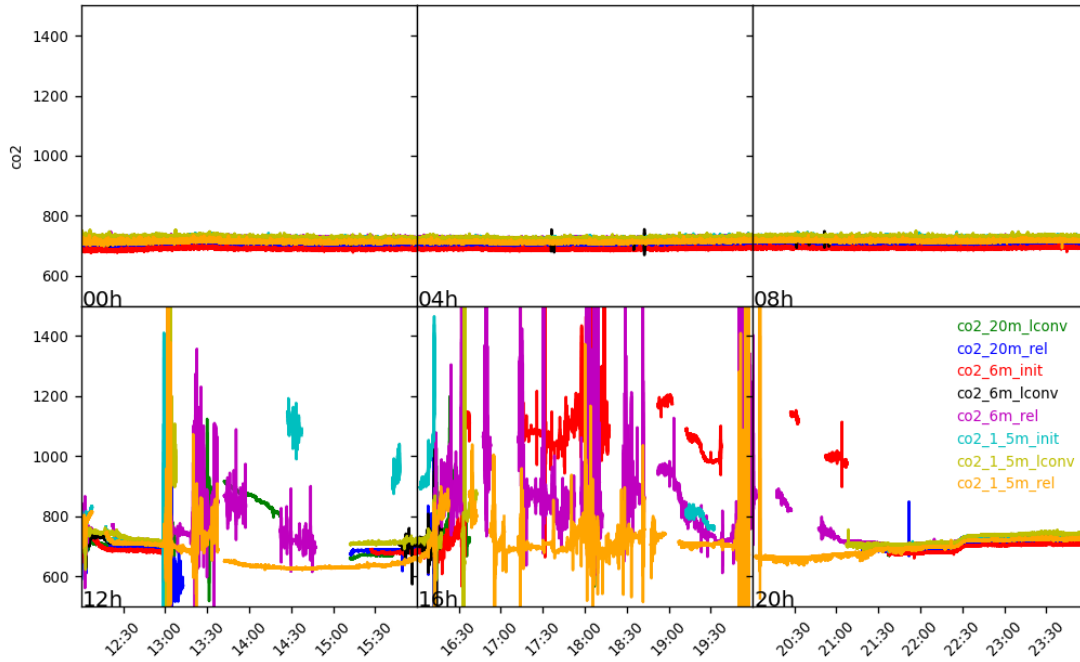
20181114 h2o



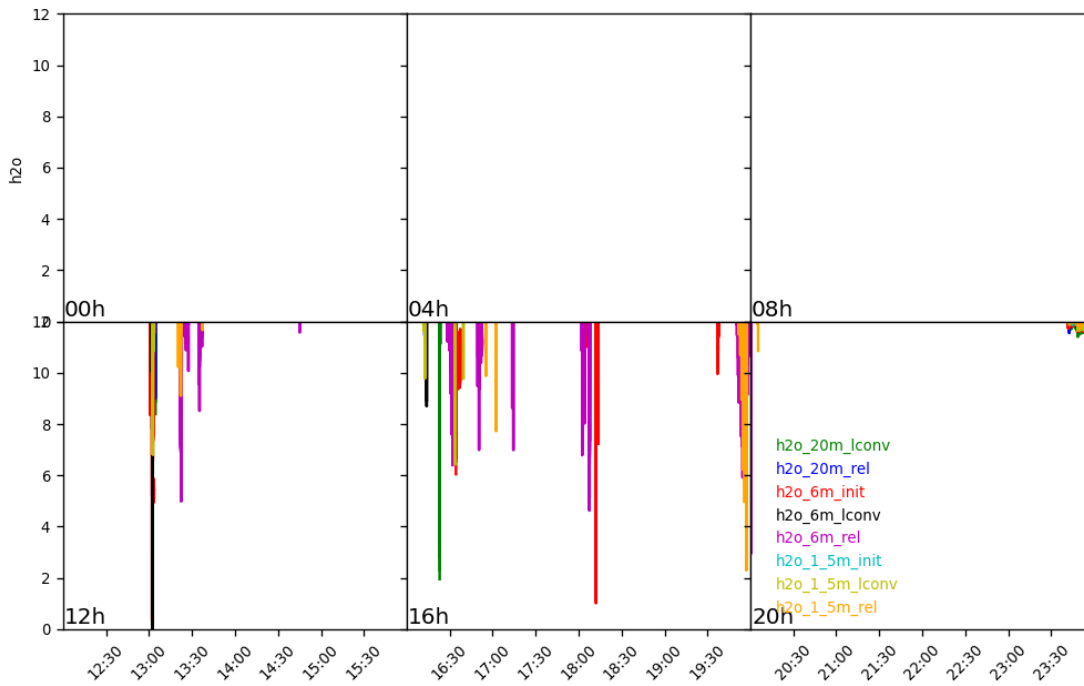
Special Dates Requested - Full days

2019-10-10

20181010 co2

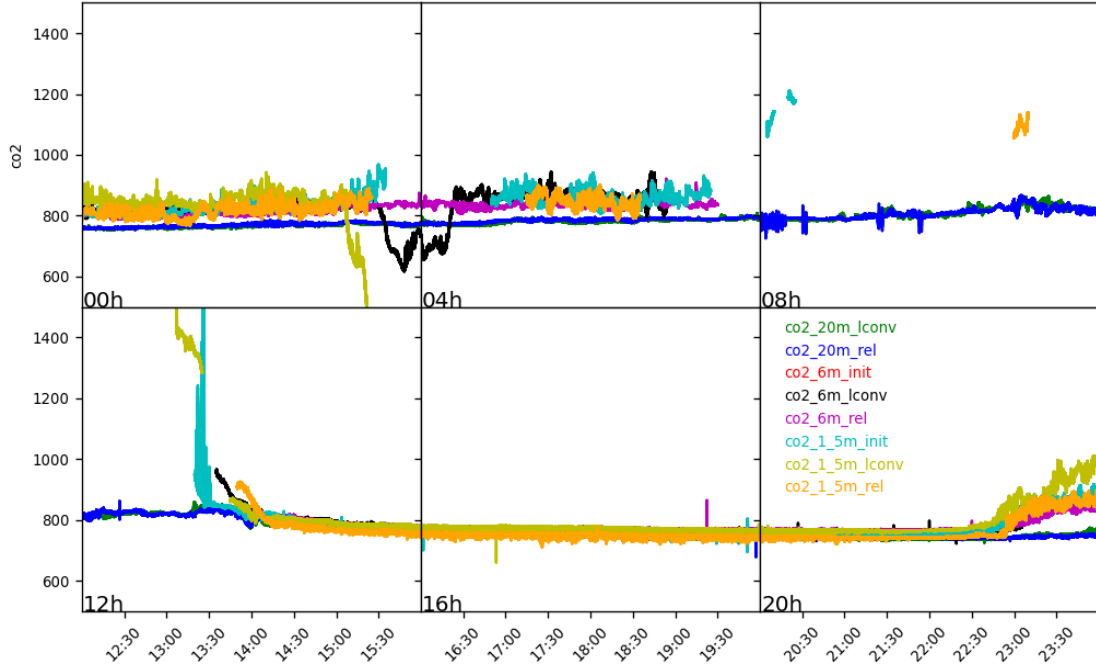


20181010 h2o

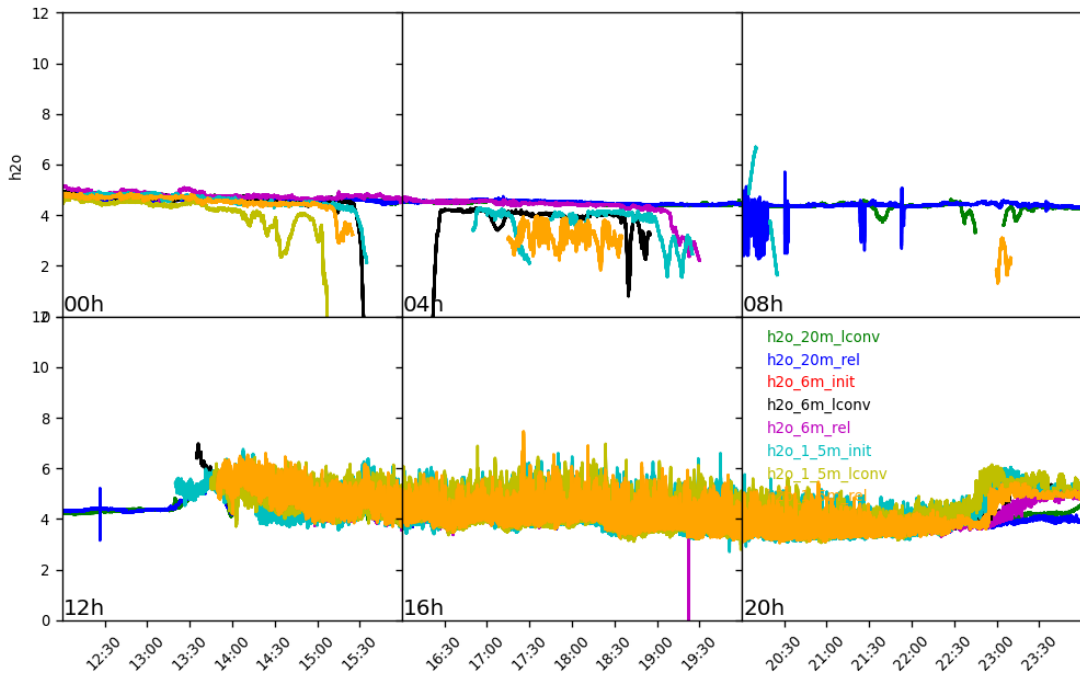


2018-10-18

20181018 co2



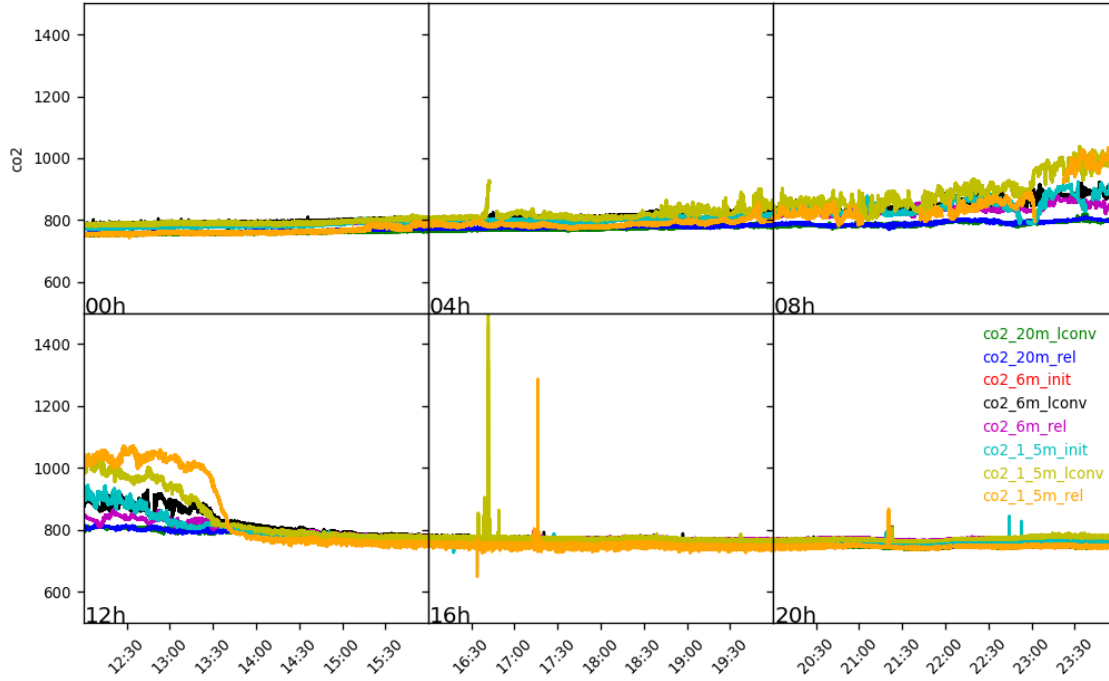
20181018 h2o



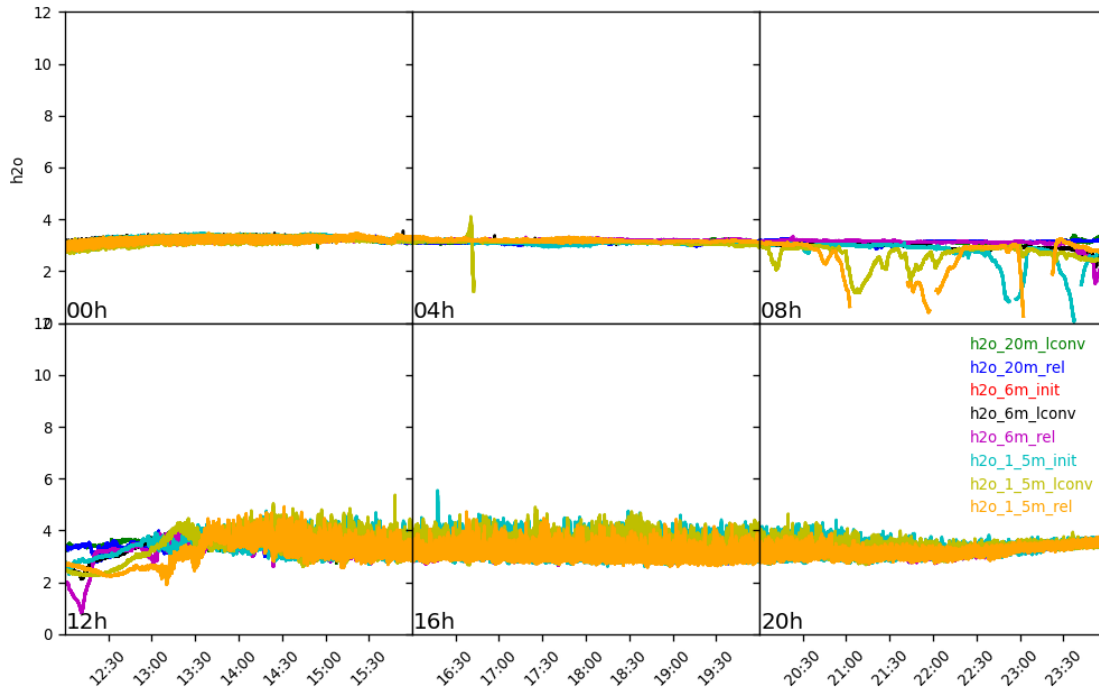


2018-10-21

20181021 co2

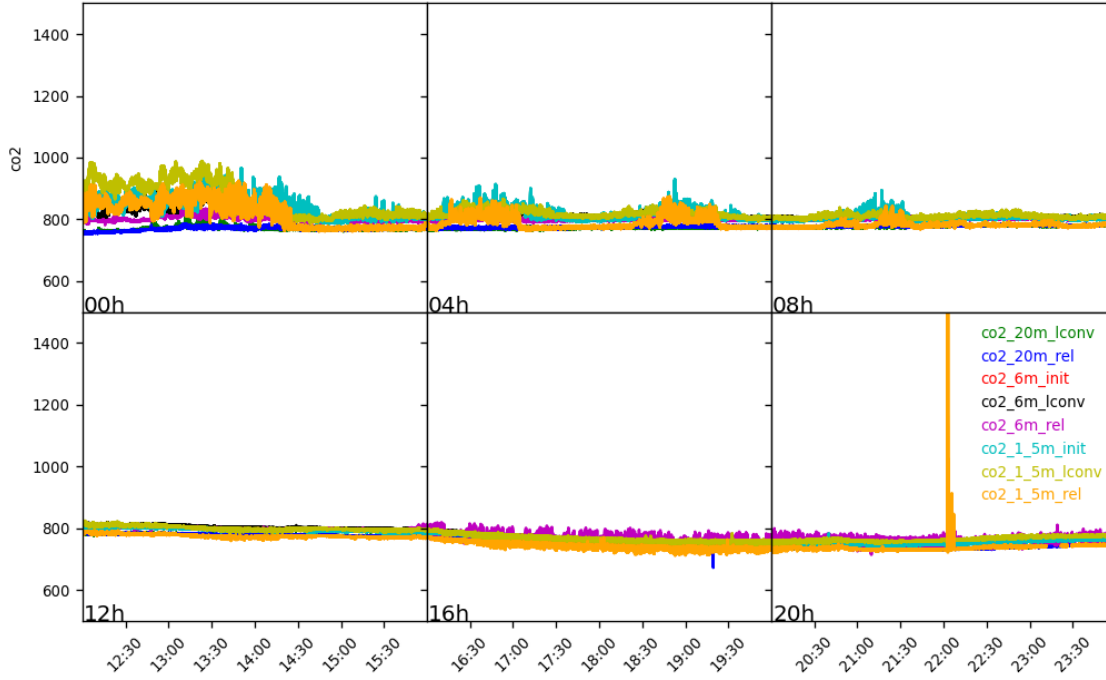


20181021 h2o

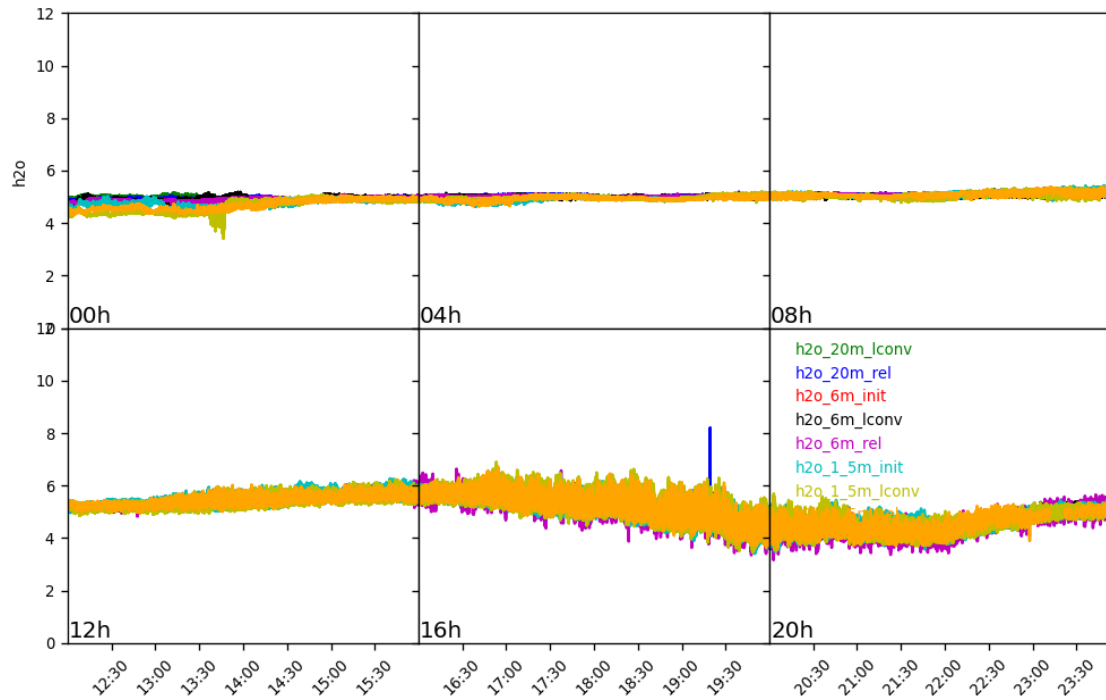


2018-10-25

20181025 co2

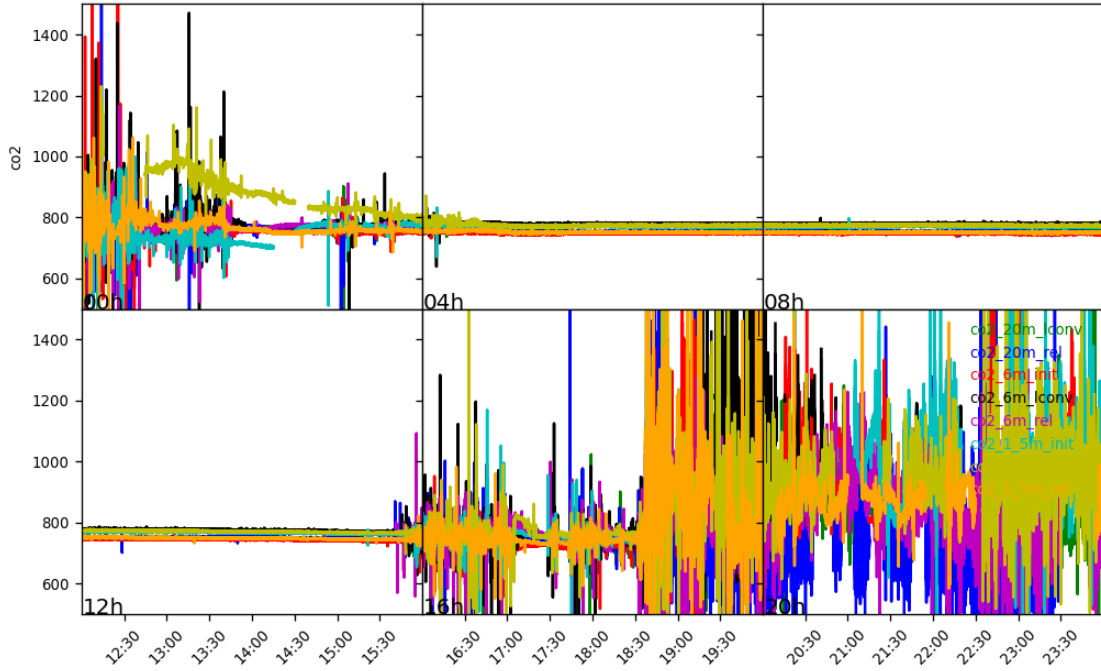


20181025 h2o

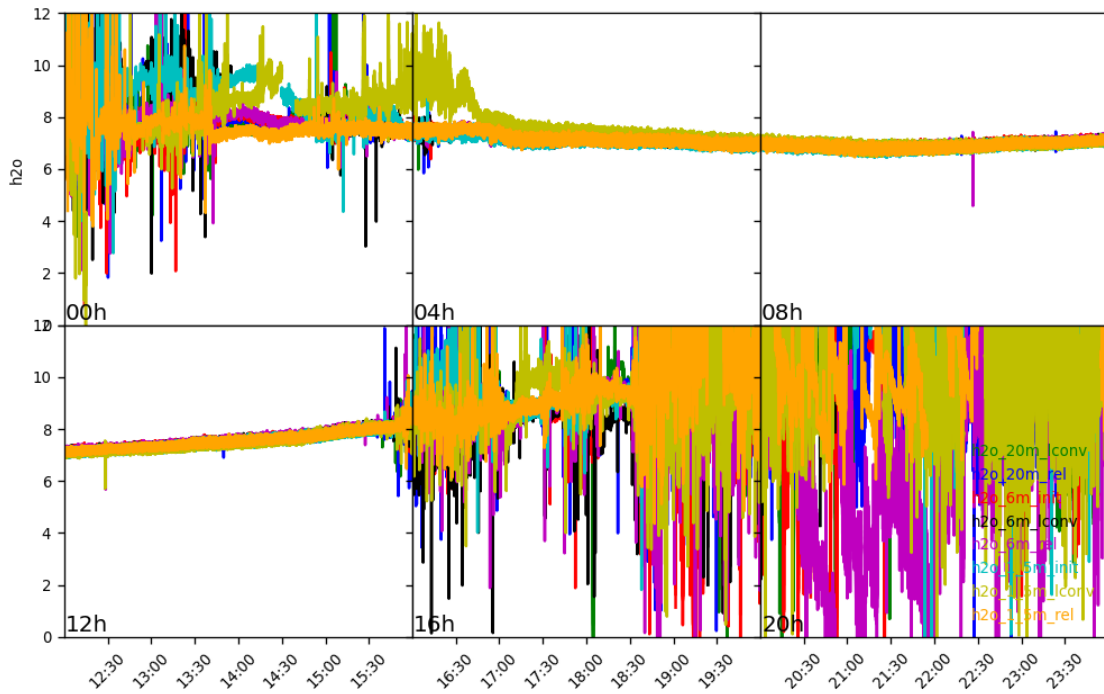


2018-11-04

20181104 co2

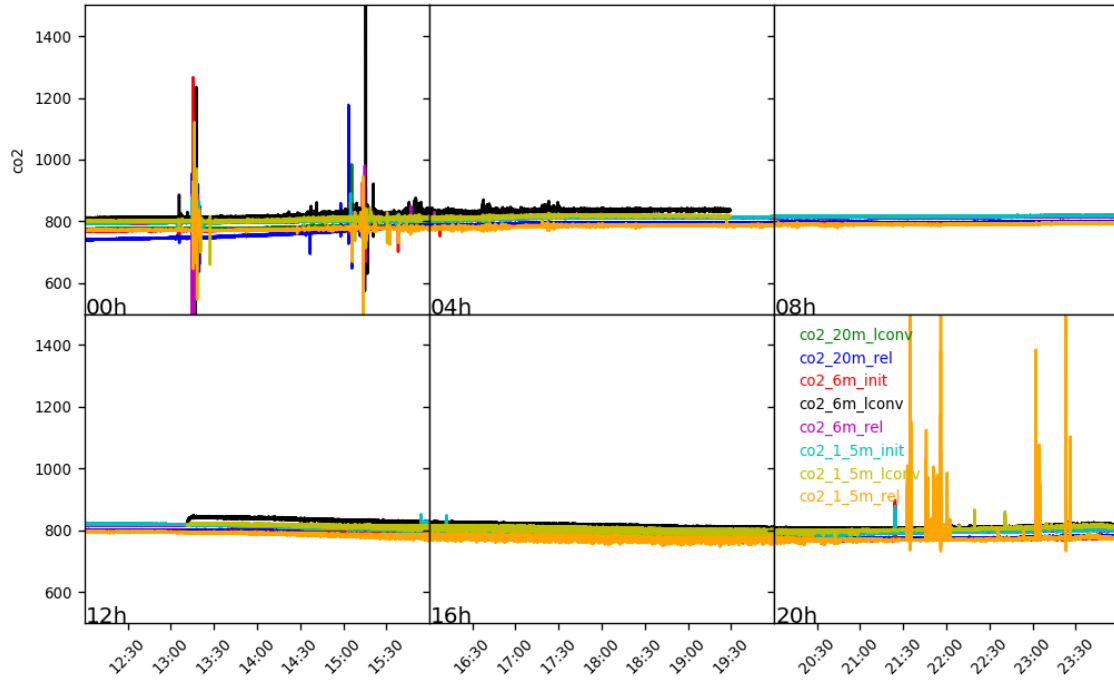


20181104 h2o



2018-11-10

20181110 co2



20181110 h2o

