Supplementary material

S1 Code section. Configuration file settings used in the example with one month of data (January 2021).

[import]

src = [

 "indata/2021/\*\*/\*.dat"

]

timestamp\_col = "EPOCH\_TIME"

[import.columns]

EPOCH\_TIME = "float64"

solenoid\_valves = "float16"

ALARM\_STATUS = "int8"

CO2 = "float32"

N2O\_dry = "float32"

CH4\_dry = "float32"

[filters.\_\_TIMESTAMP\_\_]

min\_value = "2021-01-01 00:00:01"

max\_value = "2021-01-31 23:59:59"

[filters.ALARM\_STATUS]

allow\_only = [0, 4]

disallow = []

[measurements]

chamber\_col = "solenoid\_valves"

max\_gap = 10 # 10 seconds

min\_duration = "00:19:30"

max\_duration = "00:24:30"

[chamber\_labels]

1 = "RAS 1"

2 = "RAS 2"

3 = "RAS 3"

4 = "RAS 4"

5 = "RAS 5"

6 = "RAS 6"

7 = "RAS 7"

8 = "RAS 8"

9 = "RAS 9"

10 = "RAS 10"

11 = "RAS 11"

12 = "RAS 12"

13 = "RAS 13"

14 = "RAS 14"

15 = "RAS 15"

[fluxes]

gases = ["N2O\_dry", "CH4\_dry", "CO2"]

t0\_delay = "00:06:10"

t0\_margin = "00:02:00"

A = 0.25

Q = 4.16e-6

V = 50e-3

S2 Figure. Fragment of the output data after calculating the volumetric flux with fluxes command.



S3 Code section. The commands in the command prompt for importing and transforming data into fluxes in Picarrito.

**(venv) C:\>picarrito import**

INFO Reading database from ‘picarrito\database.feather' (0.3 MiB).

Reading source files [###############################] 522/522

INFO Database updated:

Size in memory (MB) Rows

Before 0.0 0

New data 48.9 2,229,120

After 48.9 2,229,120

INFO Saved database to 'picarrito\database.feather’ (40.6 MiB).

**(venv) C:\>picarrito fluxes**

INFO Reading database from ‘picarrito\database.feather’ (40.6 MiB).

INFO Database has 2,229,120 rows.

INFO Data excluded by filters:

Number rejected Share rejected

\_\_TIMESTAMP\_\_ 2,117 0.1%

ALARM\_STATUS 619 0.0%

All filters combined 2,736 0.1%

INFO Filtered database has 2,226,384 rows.

INFO

Number of chunks Average duration Total duration

All chunks 4,966 00:06:17 21 days 15:31:32

Rejected chunks 3,839 00:01:05 2 days 21:38:29

Final measurements 1,127 00:23:57 18 days 17:53:03

Analyzing measurements [####################################] 1127/1127

INFO Estimated 3381 fluxes (N20\_dry, CH4\_dry, C02) in 1127 measurements.

INFO Saved fluxes to ‘picarrito\fluxes.csv'.

**(venv) C:\>picarrito plot flux-fits**

INFO Reading database from ‘picarrito\database.feather’ (40.6 MiB).

INFO Database has 2,229,120 rows.

INFO Data excluded by filters:

 Number rejected Share rejected

\_\_TIMESTAMP\_\_ 2,117 0.1%

ALARM\_STATUS 619 0.0%

All filters combined 2,736 0.1%

INFO Filtered database has 2,226,384 rows.

INFO

Number of chunks Average duration Total duration

All chunks 4,966 00:06:17 21 days 15:31:32

Rejected chunks 3,839 00:01:05 2 days 21:38:29

Final measurements 1,127 00:23:57 18 days 17:53:03

Plotting measurements [########################################] 1127/1127