

Checking instruments and data

Module

- Marta Galvagno

- 1. What do we need to check?**
2. Checking data
3. Checking instruments
4. Record information



From the field to the data

Sensor installation



Datalogger acquisition



Data Transmission



Import in dedicated database



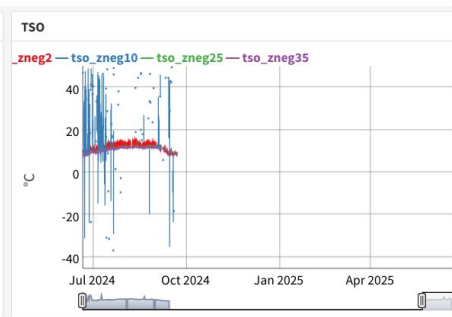
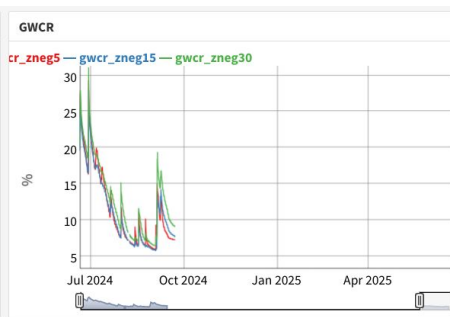
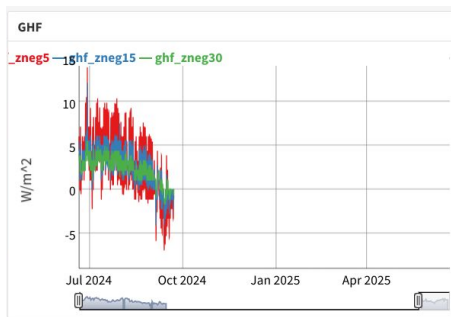
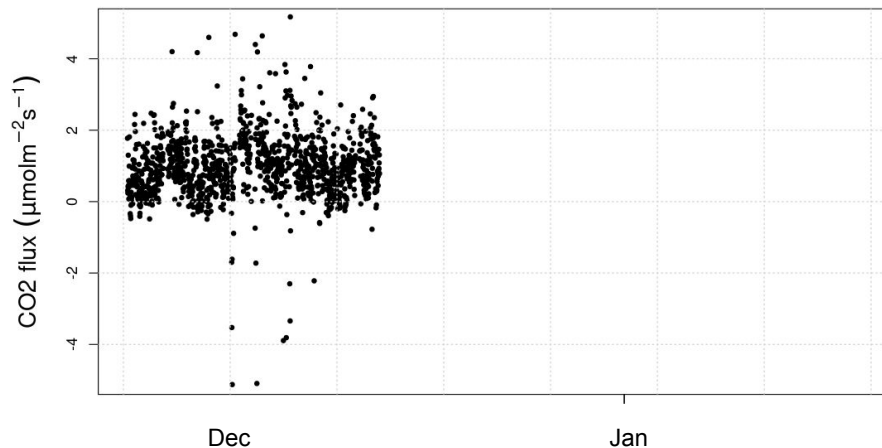
Quality control



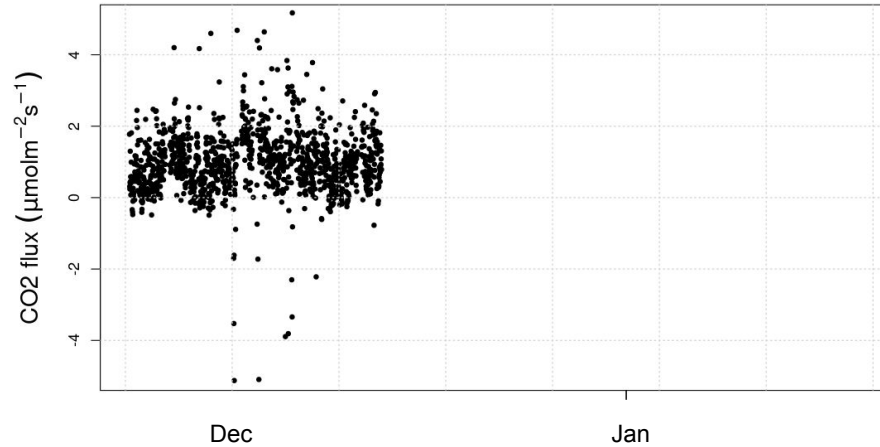
Instrument check and maintenance

Record of information and operations

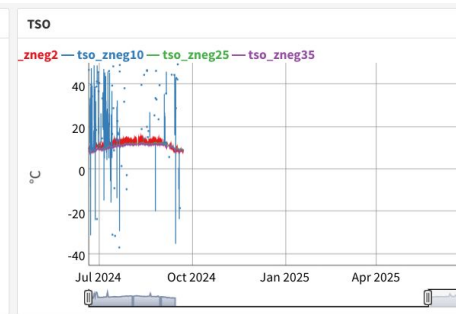
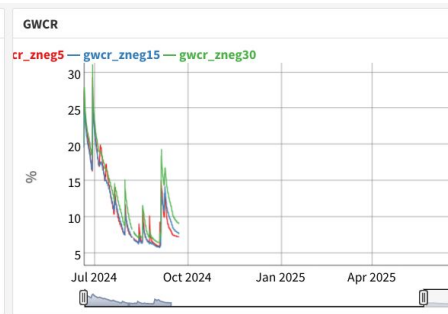
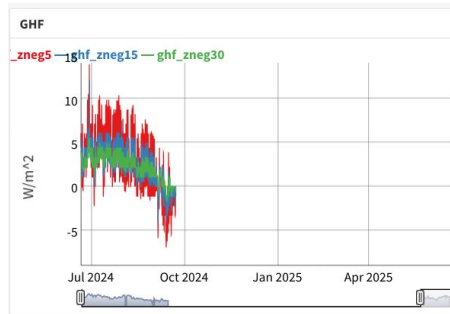
First things first: Are you even getting data?



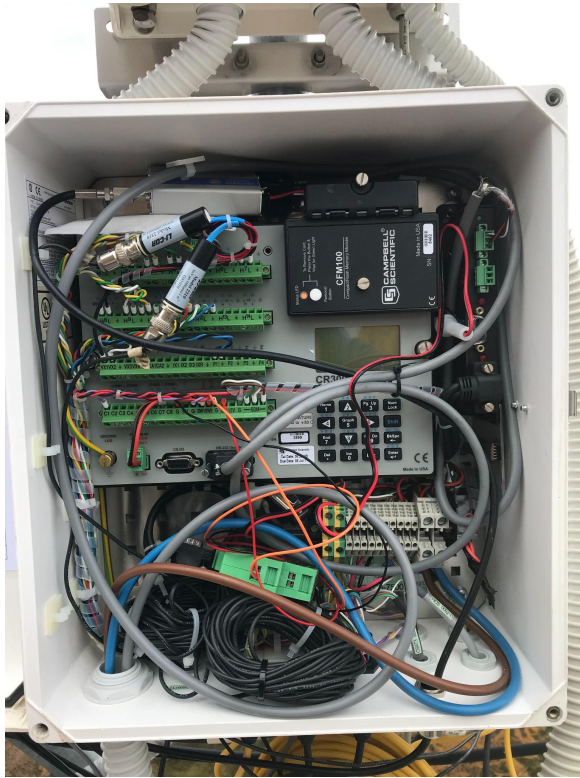
First things first: Are you even getting data?



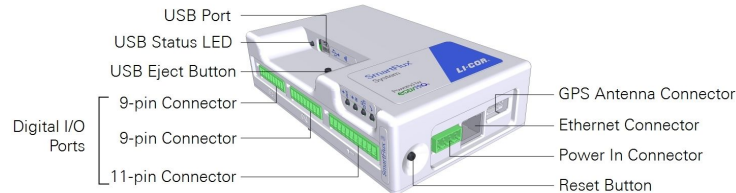
1. No data recorded on the datalogger
2. Power issue
3. Communication problem
4. Specific instrument issue



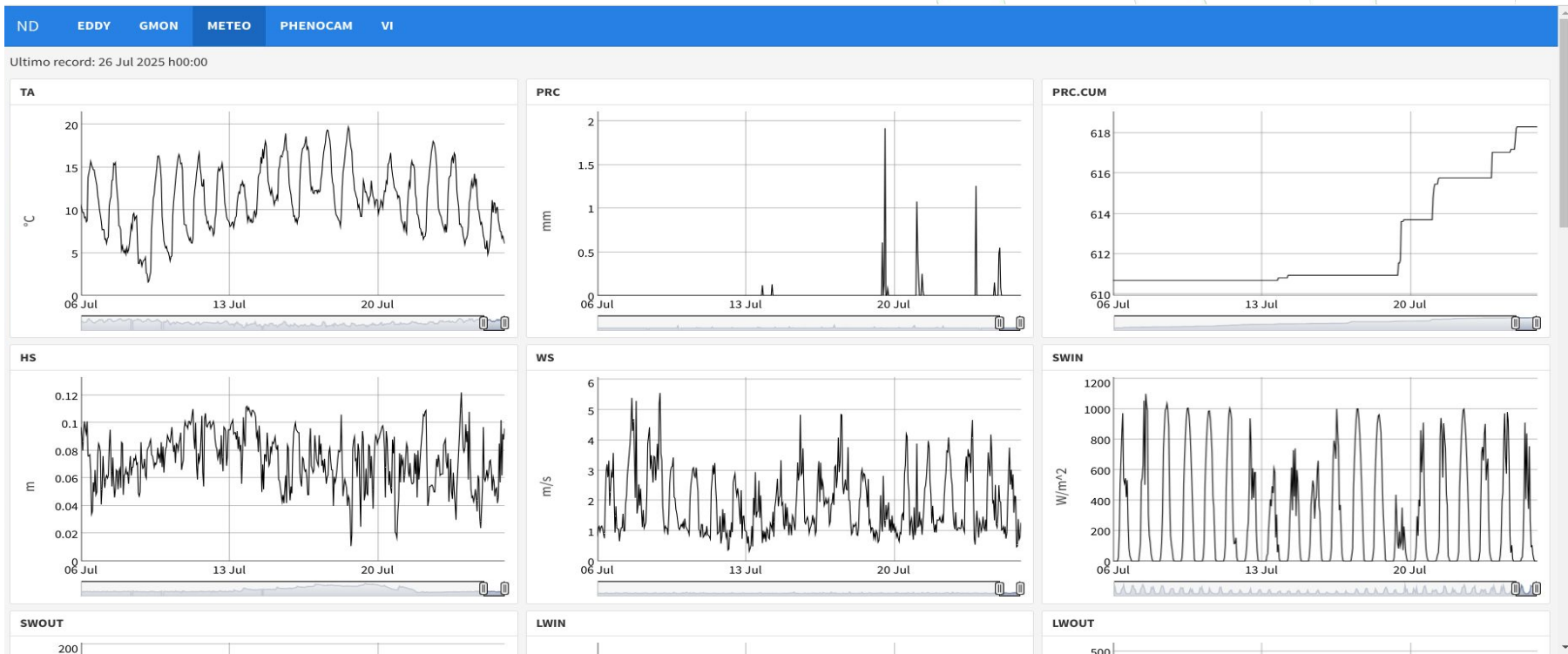
First things first: Are you even getting data?



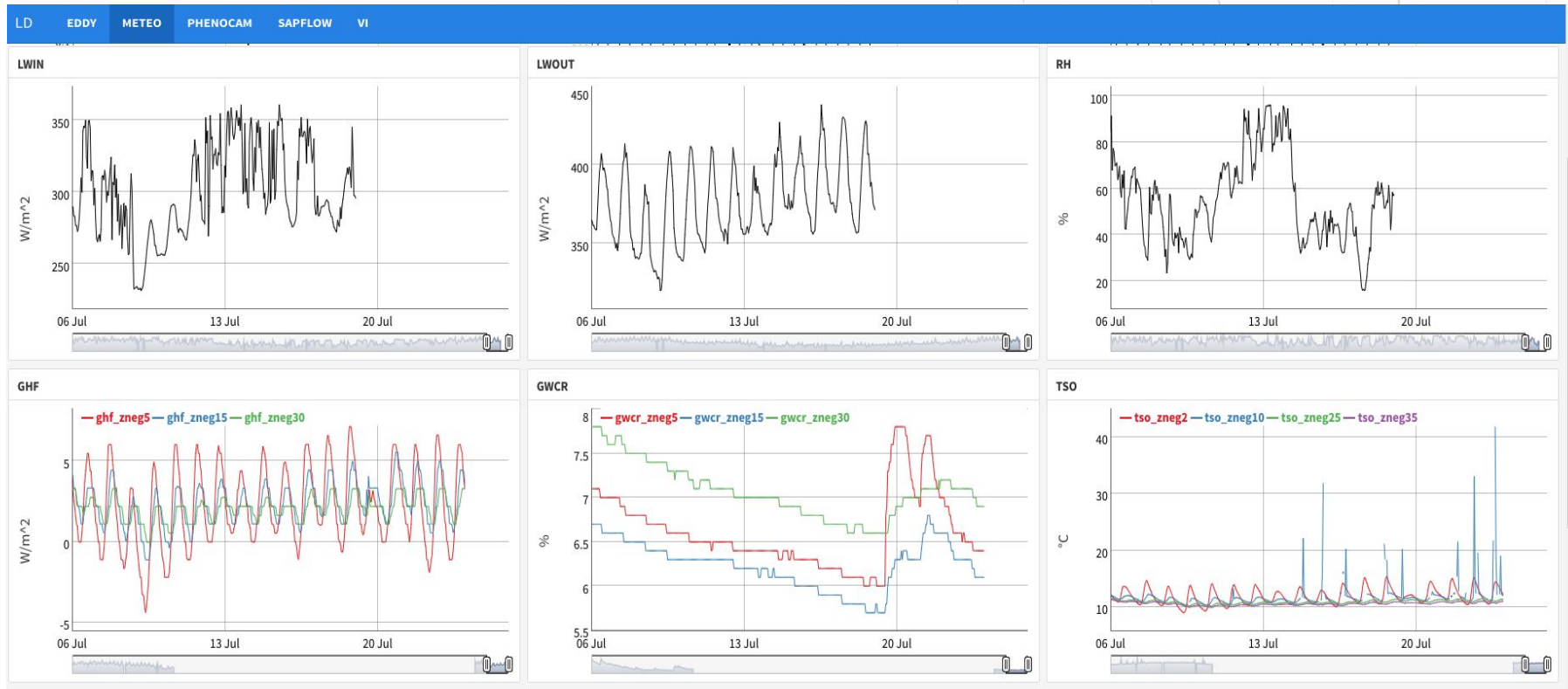
1. There is power in the system?
2. There are data on the CF or USB?
3. Checking datalogger program and communication setting
4. Are data missing for one or more sensors?



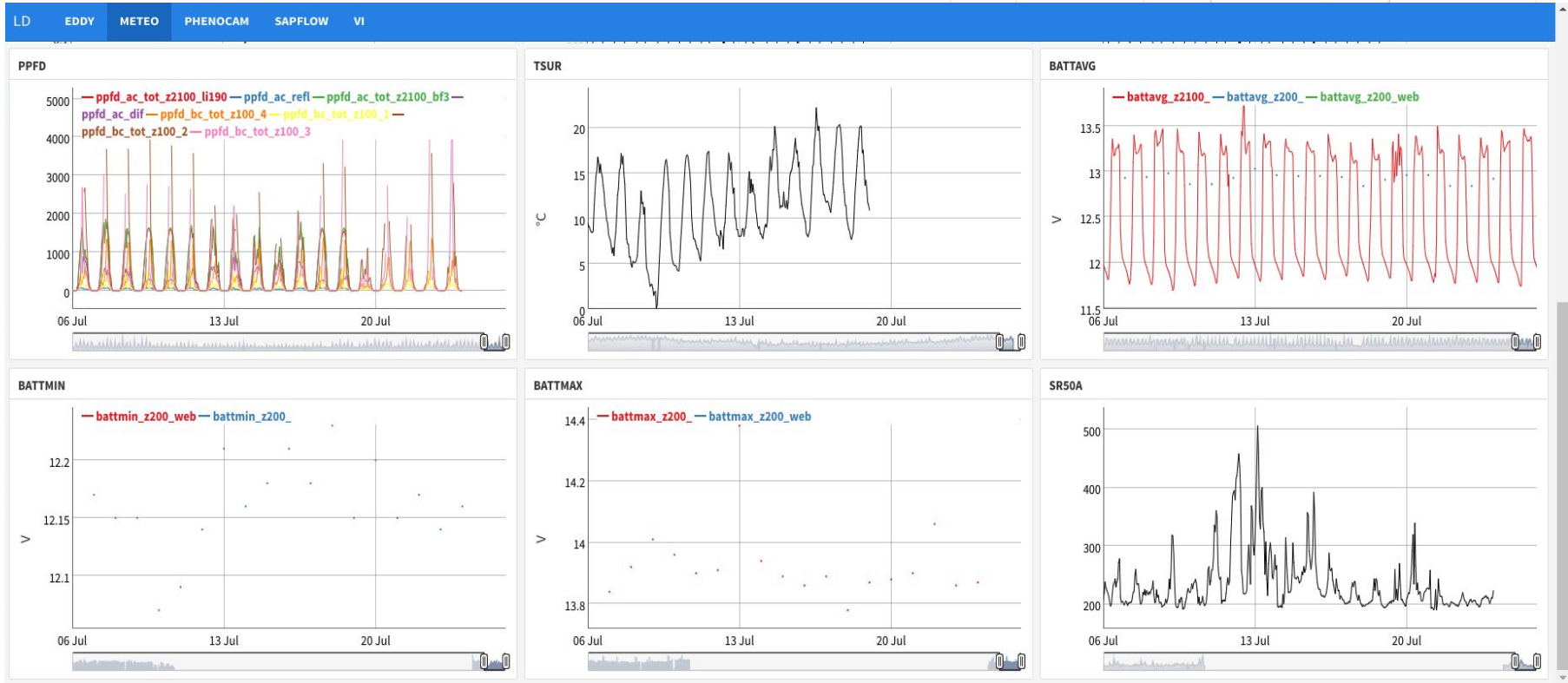
Visual check of data: meteo sensors



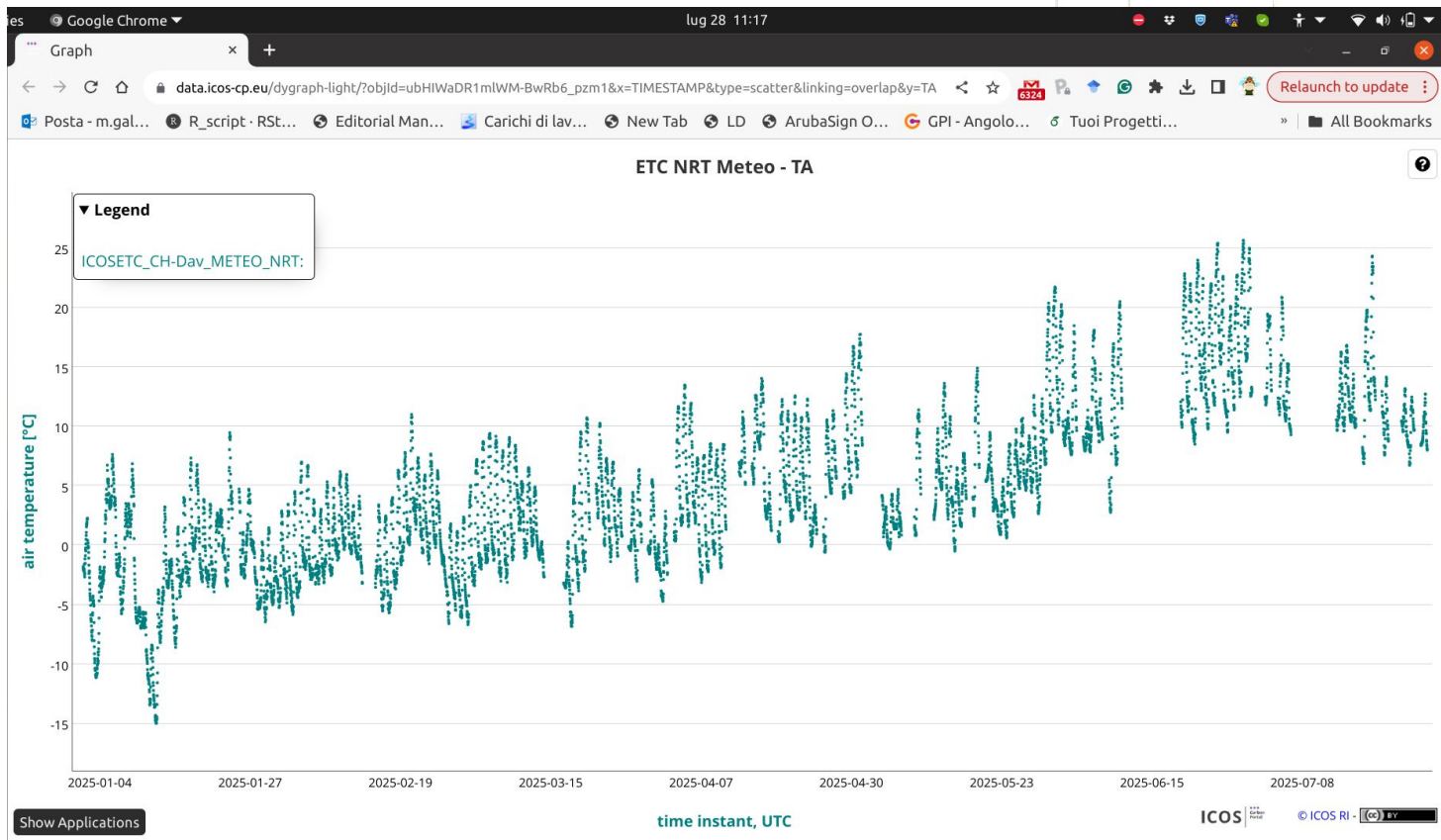
Visual check of data: meteo sensors



Visual check of data: meteo sensors

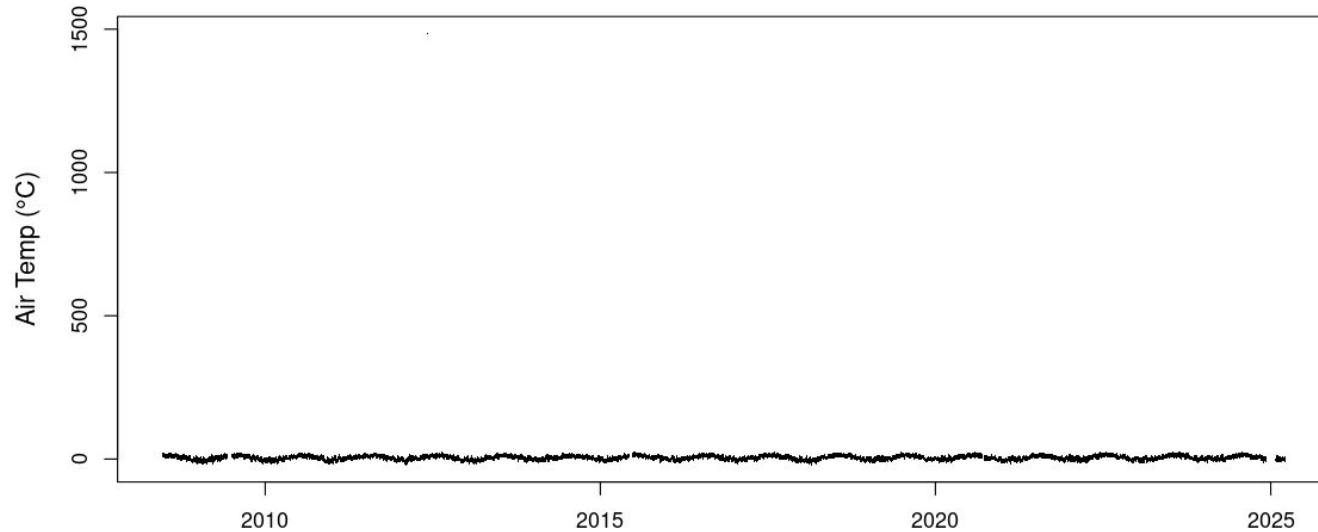


Visual check of data: meteo sensors



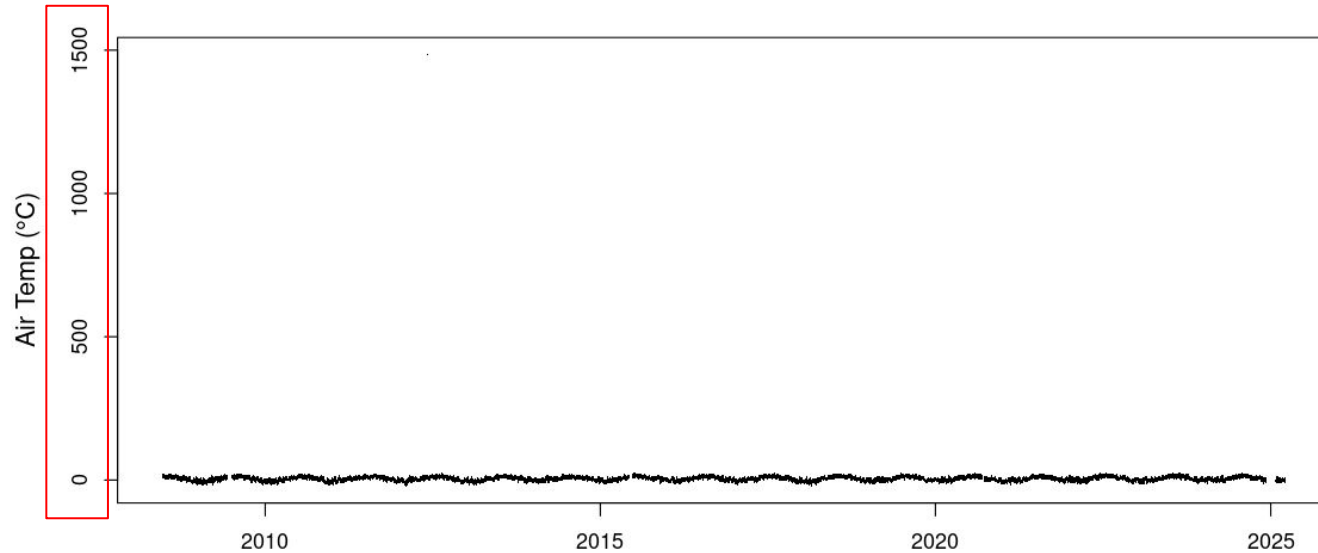
Visual check of data: meteo sensors

Outliers



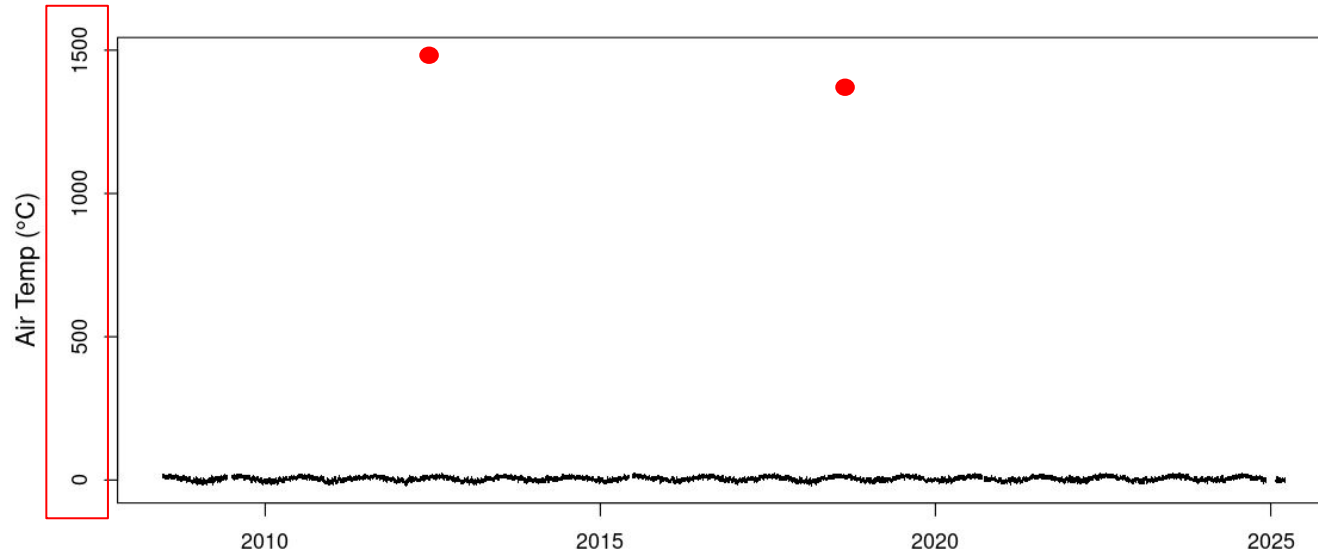
Visual check of data: meteo sensors

Outliers

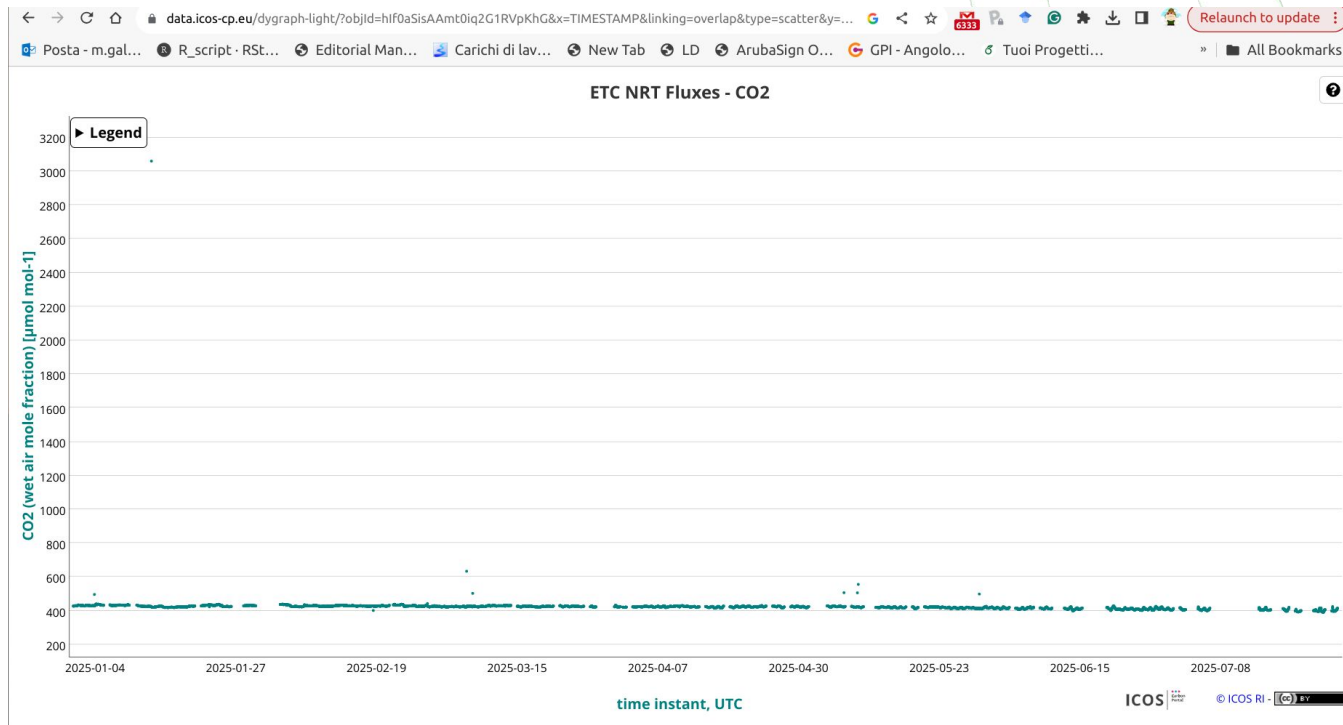


Visual check of data: meteo sensors

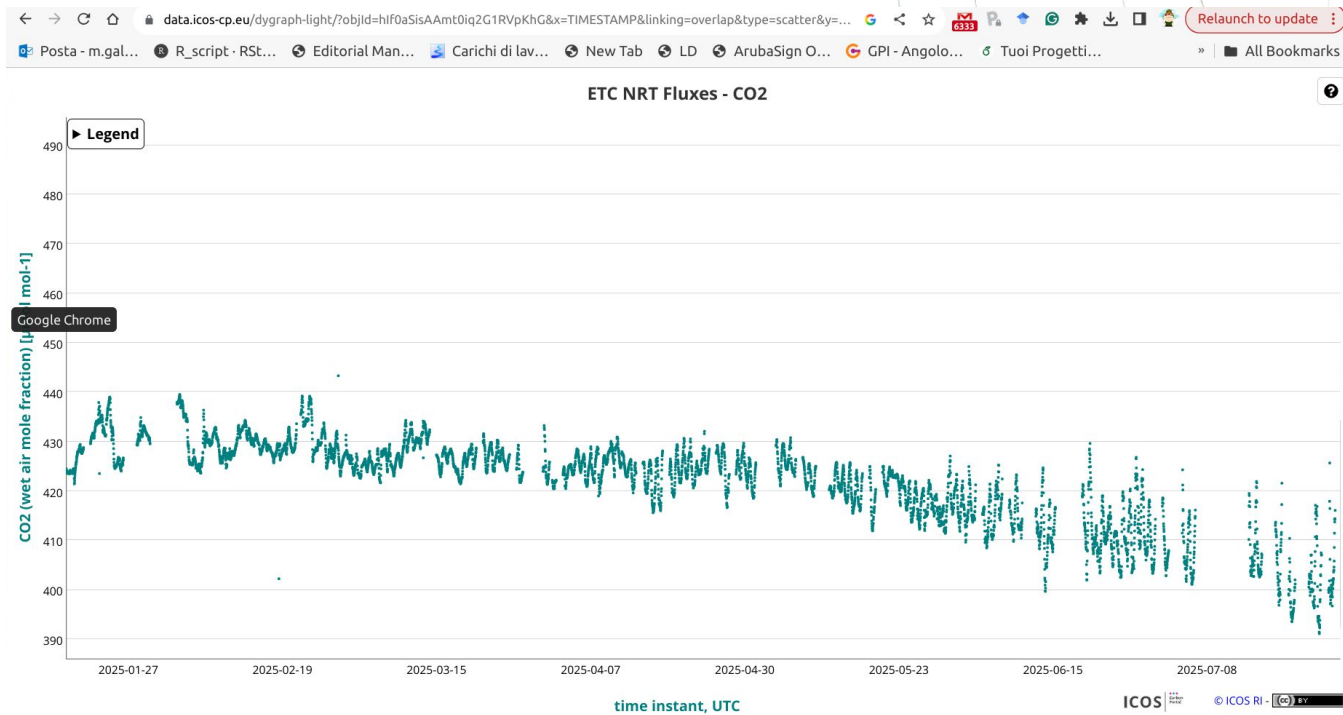
Outliers



Visual check of data:

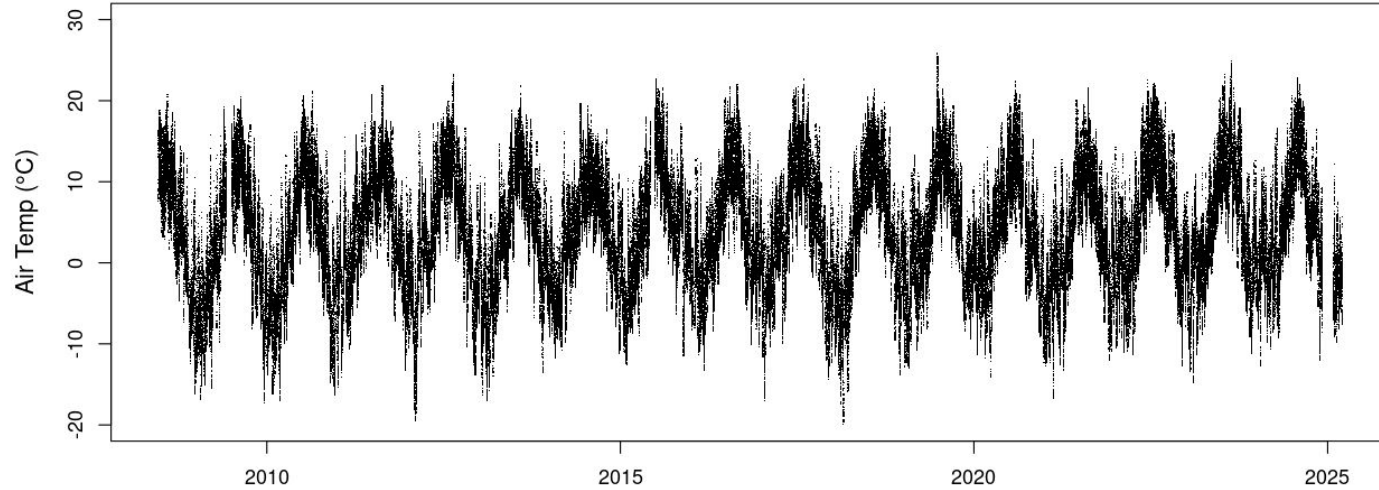


Visual check of data:



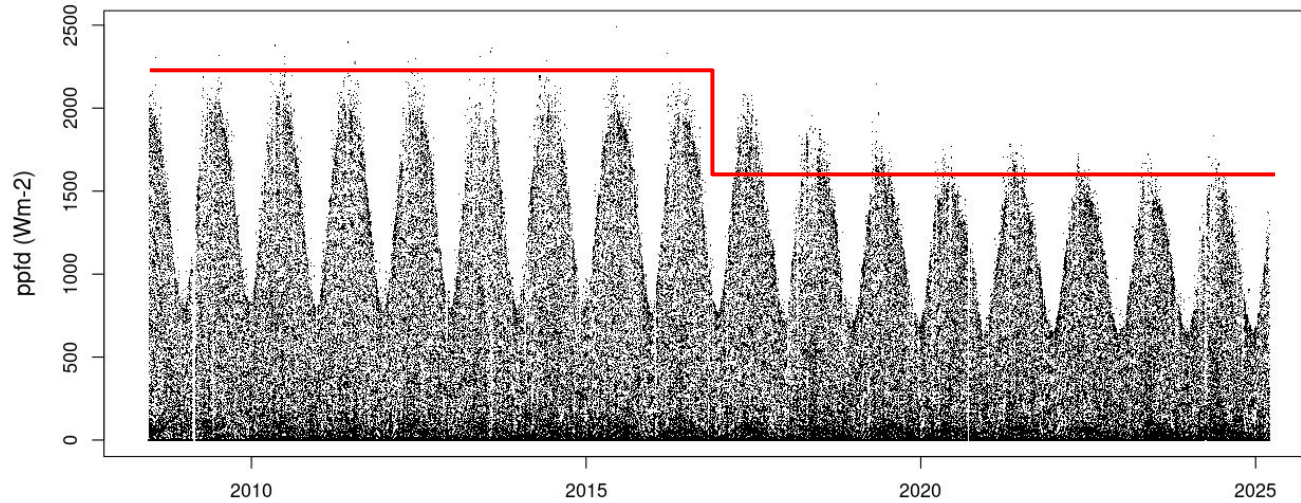
Visual check of data: meteo sensors

Outliers



Visual check of data: meteo sensors

Drifts



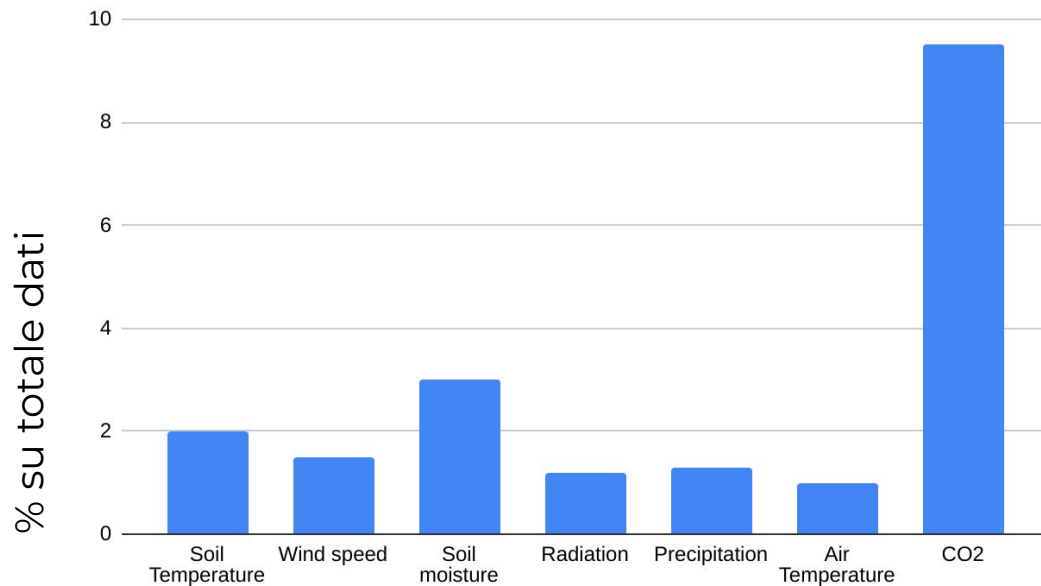
Visual check of data: meteo sensors

Noise

Mettere co2 Id o neve

Visual check of data: meteo sensors

Percentuale di gap



Visual check of data: EC raw data

Do we have the right number of records?

240704_240823	
Name	Size
2024-07-04T115729_AIU-0868.ghg	114,6 kB
2024-07-04T120000_AIU-0868.ghg	1,4 MB
2024-07-04T123000_AIU-0868.ghg	1,3 MB
2024-07-04T130000_AIU-0868.ghg	1,4 MB
2024-07-04T133000_AIU-0868.ghg	1,3 MB
2024-07-04T140000_AIU-0868.ghg	1,3 MB
2024-07-04T143000_AIU-0868.ghg	1,4 MB
2024-07-04T150000_AIU-0868.ghg	1,3 MB
2024-07-04T153000_AIU-0868.ghg	1,3 MB
2024-07-04T160000_AIU-0868.ghg	1,3 MB
2024-07-04T163000_AIU-0868.ghg	1,3 MB
2024-07-04T170000_AIU-0868.ghg	1,3 MB
2024-07-04T173000_AIU-0868.ghg	1,3 MB
2024-07-04T180000_AIU-0868.ghg	1,2 MB
2024-07-04T183000_AIU-0868.ghg	1,2 MB
2024-07-04T190000_AIU-0868.ghg	1,2 MB
2024-07-04T193000_AIU-0868.ghg	1,3 MB
2024-07-04T200000_AIU-0868.ghg	1,3 MB
2024-07-04T203000_AIU-0868.ghg	1,3 MB
2024-07-04T210000_AIU-0868.ghg	1,2 MB
2024-07-04T213000_AIU-0868.ghg	1,1 MB
2024-07-04T220000_AIU-0868.ghg	1,1 MB
2024-07-04T223000_AIU-0868.ghg	1,1 MB
2024-07-04T230000_AIU-0868.ghg	1,1 MB
2024-07-04T233000_AIU-0868.ghg	1,1 MB
2024-07-05T000000_AIU-0868.ghg	1,1 MB
2024-07-05T003000_AIU-0868.ghg	1,2 MB
2024-07-05T010000_AIU-0868.ghg	1,1 MB

240704_240823		
Name	Size	Modified
2024-08-20T100000_AIU-0868.ghg	1,4 MB	3 feb
2024-08-20T103000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T110000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T113000_AIU-0868.ghg	1,4 MB	3 feb
2024-08-20T120000_AIU-0868.ghg	1,4 MB	3 feb
2024-08-20T123000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T130000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T133000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T140000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T143000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T150000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T153000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T160000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T163000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T170000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T173000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T180000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T183000_AIU-0868.ghg	1,1 MB	3 feb
2024-08-20T190000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T193000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T200000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T203000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T210000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T213000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T220000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T223000_AIU-0868.ghg	1,1 MB	3 feb
2024-08-20T230000_AIU-0868.ghg	1,3 MB	3 feb
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Visual check of data: EC raw data

Do we have the right number of records?

Recent	
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2024-07-04T115729_AIU-0868.ghg	114,6 kB
2024-07-04T120000_AIU-0868.ghg	1,4 MB
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2024-07-04T143000_AIU-0868.ghg	1,4 MB
2024-07-04T150000_AIU-0868.ghg	1,3 MB
2024-07-04T153000_AIU-0868.ghg	1,3 MB
2024-07-04T160000_AIU-0868.ghg	1,3 MB
2024-07-04T163000_AIU-0868.ghg	1,3 MB
2024-07-04T170000_AIU-0868.ghg	1,3 MB
2024-07-04T173000_AIU-0868.ghg	1,3 MB
2024-07-04T180000_AIU-0868.ghg	1,2 MB
2024-07-04T183000_AIU-0868.ghg	1,2 MB
2024-07-04T190000_AIU-0868.ghg	1,2 MB
2024-07-04T193000_AIU-0868.ghg	1,3 MB
2024-07-04T200000_AIU-0868.ghg	1,3 MB
2024-07-04T203000_AIU-0868.ghg	1,3 MB
2024-07-04T210000_AIU-0868.ghg	1,2 MB
2024-07-04T213000_AIU-0868.ghg	1,1 MB
2024-07-04T220000_AIU-0868.ghg	1,1 MB
2024-07-04T223000_AIU-0868.ghg	1,1 MB
2024-07-04T230000_AIU-0868.ghg	1,1 MB
2024-07-04T233000_AIU-0868.ghg	1,1 MB
2024-07-05T000000_AIU-0868.ghg	1,1 MB
2024-07-05T003000_AIU-0868.ghg	1,2 MB
2024-07-05T010000_AIU-0868.ghg	1,1 MB

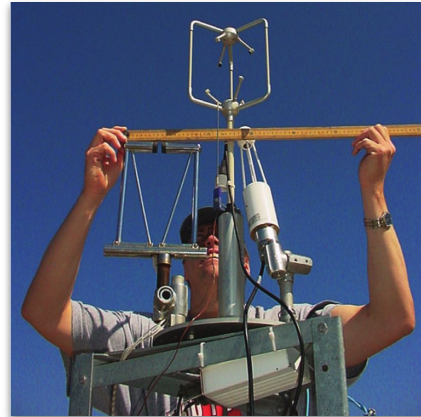
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2024-08-20T120000_AIU-0868.ghg	1,4 MB	3 feb
2024-08-20T123000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T130000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T133000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T140000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T143000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T150000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T153000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T160000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T163000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T170000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T173000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T180000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T183000_AIU-0868.ghg	1,1 MB	3 feb
2024-08-20T190000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T193000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T200000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T203000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T210000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T213000_AIU-0868.ghg	1,2 MB	3 feb
2024-08-20T220000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T223000_AIU-0868.ghg	1,1 MB	3 feb
2024-08-20T230000_AIU-0868.ghg	1,3 MB	3 feb
2024-08-20T233000_AIU-0868.ghg	1,2 MB	3 feb

Visual check of data: Webcam



Checking instruments:

Level and mounting



Checking instruments:

Cables



Checking instruments:

Maintenance

Es. cambio antigelo



Checking instruments:

Maintenance

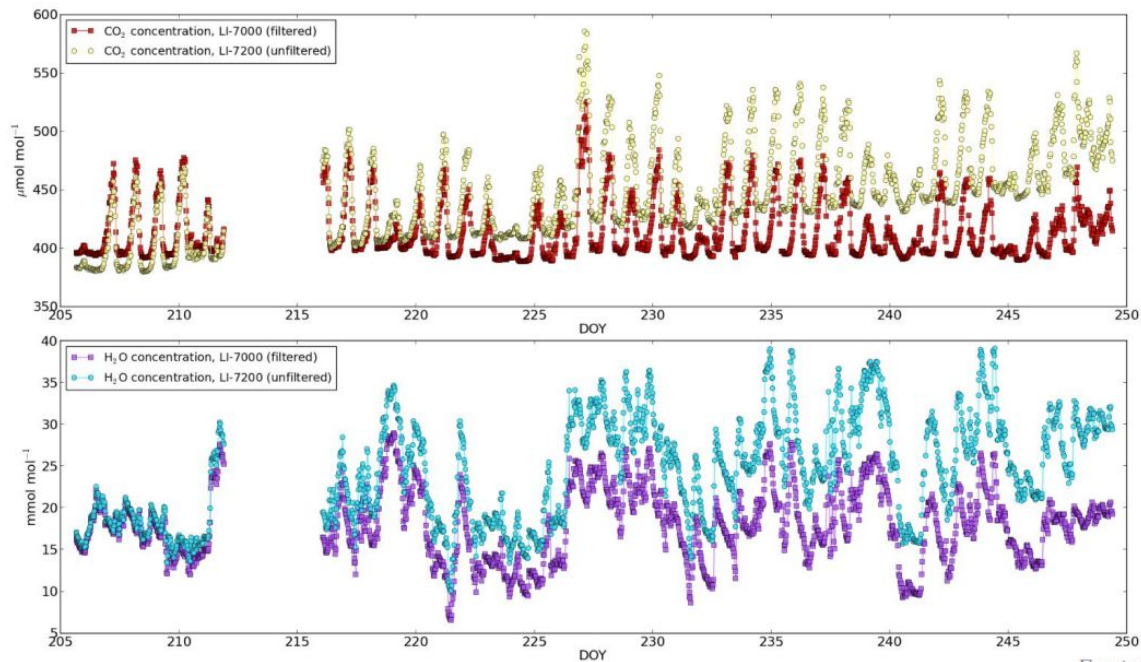
Es. flow rate

Il flow rate indica la portata del gas aspirato

SLPM: Standard Liters per Minute (litri standard al minuto), una misura di portata massica.

Checking instruments:

Filters



Fratini, internal LI-COR report

Checking instruments:

Cleaning IRGA path and replace Internal chemicals



The chemicals keep the source and detector housings free of CO₂ and water vapor.

analyzer. Then remove the thumbscrew and thread it into a cap. Pull straight out to remove the plug.

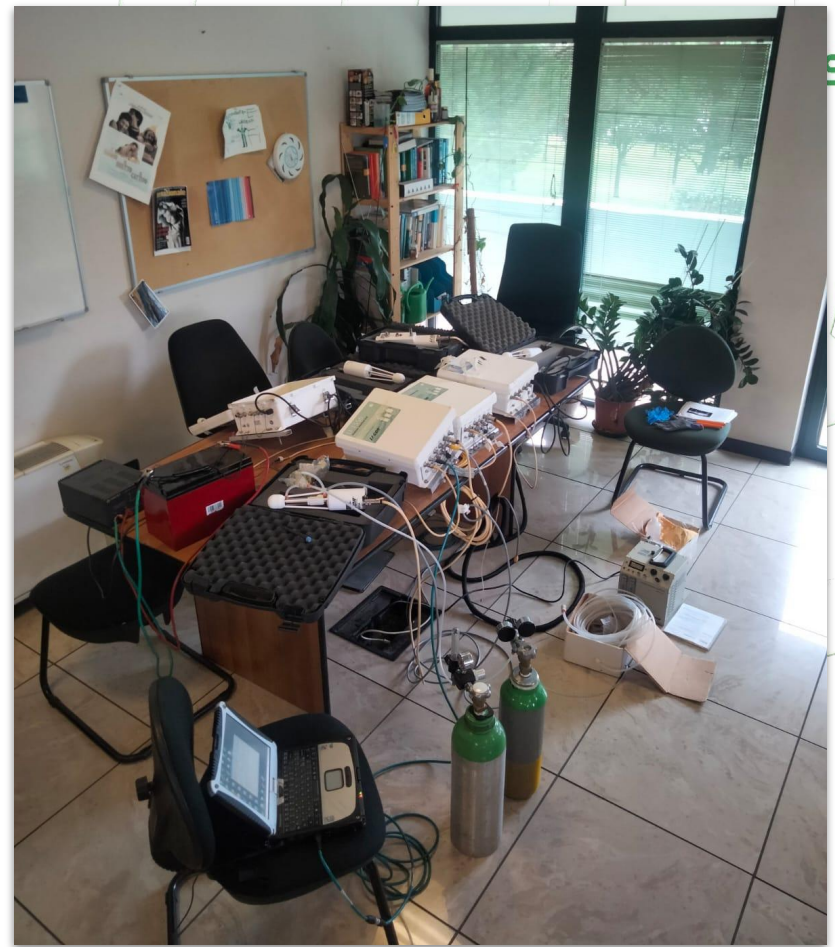
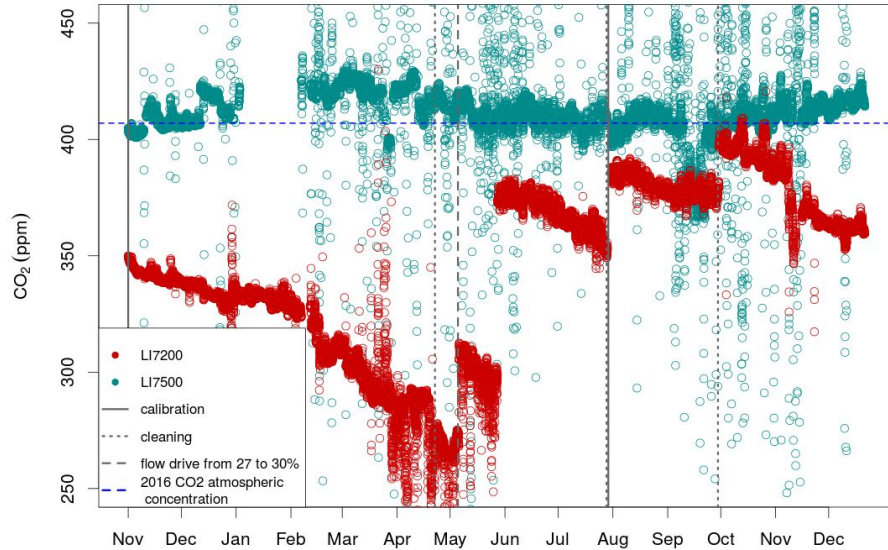


4. Insert the recharged source into the analyzer housing cap that replaces the battery covers.



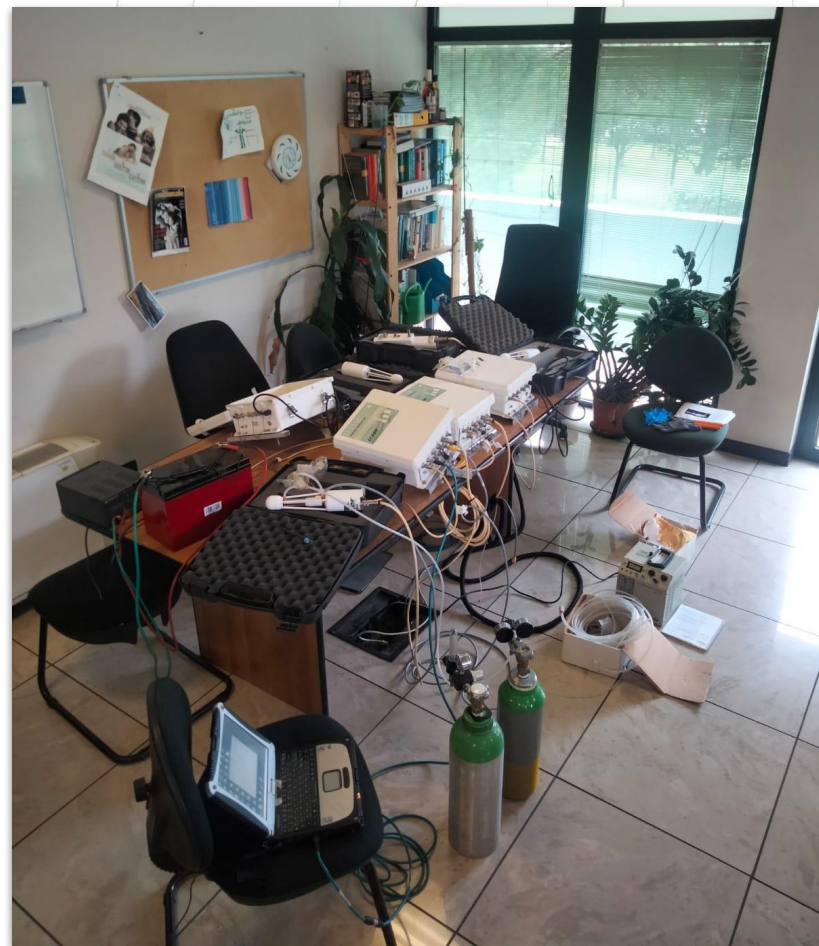
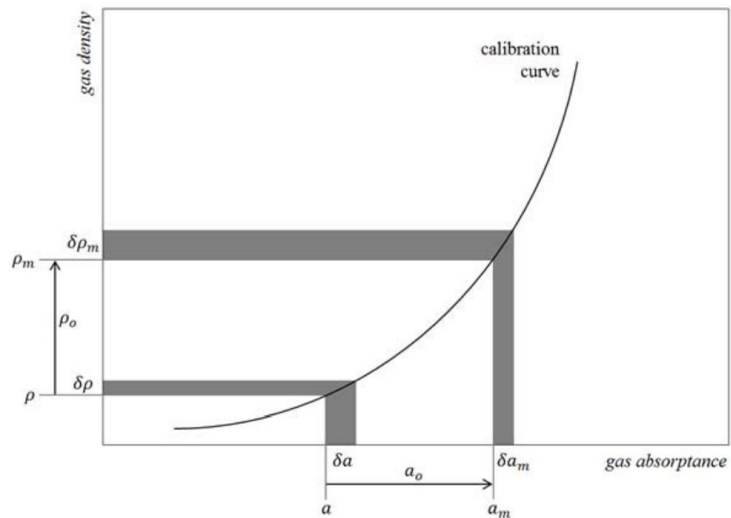
Checking instruments:

User Calibration



Checking instruments:

User Calibration



Checklist metadati e informazioni di sistema

Metadati strumentali

Numeri di serie di tutti i sensori e versione software

Posizione e altezza di installazione di ciascun sensore

Distanze tra sensori e loro coordinate rispetto al punto di riferimento

Coordinate geografiche (latitudine, longitudine, quota)

Mappatura tra numeri di serie e canali del datalogger

Programma del datalogger

Dove si trova il file di programma attualmente in uso e sua versione e aggiornamenti

Checklist metadati e informazioni di sistema

Sistema di alimentazione

Tipo di alimentazione (batterie, pannelli solari, rete) e a quale sistema collegato

Capacità e tensione delle batterie

Data installazione

Data di installazione iniziale della strumentazione

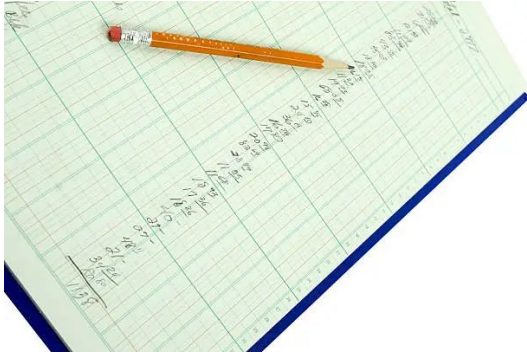
Eventuali date di spostamento o aggiornamento

Certificati di calibrazione

Data e validità dei certificati di calibrazione dei sensori principali

Dove sono archiviati i certificati (cartaceo o digitale)

Record everything!



Database

Protocollo BADM

Record everything!

Django administration

Site administration

AUTHENTICATION AND AUTHORIZATION

Groups [+ Add](#) [Change](#)

Users [+ Add](#) [Change](#)

WEB

Elenco Nomi Punti [+ Add](#) [Change](#)

Elenco Strumenti [+ Add](#) [Change](#)

Elenco parametri [+ Add](#) [Change](#)

Elenco punti [+ Add](#) [Change](#)

Elenco siti [+ Add](#) [Change](#)

Elenco tipi di operazioni [+ Add](#) [Change](#)

Registro Operazioni [+ Add](#) [Change](#)

Recent actions

My actions

- ✗** Cambio_altezza in data: 13/12/2024
Registro operazioni
- +** Cambio_altezza in data: 13/12/2024
Registro operazioni
- ✗** pulizia in data: 10/12/2024
Registro operazioni
- +** pulizia in data: 10/12/2024
Registro operazioni
- ✗** pulizia in data: 06/12/2024
Registro operazioni
- ✗** ARPA prova fede punto
Nomi punti
- +** ARPA prova fede punto
Nomi punti
- +** pulizia in data: 06/12/2024
Registro operazioni
- +** PH - catena_termometrica BH 833
Punti
- +** PH - catena_termometrica BH 805
Punti

Record everything!

Django administration

Home > Web > Elenco punti > ND - termoigrometro TA 98 1.8

Start typing to filter...

AUTHENTICATION AND AUTHORIZATION

Groups [+ Add](#)

Users [+ Add](#)

WEB

Elenco Nomi Punti [+ Add](#)

Elenco Strumenti [+ Add](#)

Elenco parametri [+ Add](#)

Elenco punti [+ Add](#)

Elenco siti [+ Add](#)

Elenco tipi di operazioni [+ Add](#)

Registro Operazioni [+ Add](#)

Change punti

ND - termoigrometro TA 98 1.8

Id sito: [✎](#) [+](#) [✖](#) [👁](#)

Id nome punto: [✎](#) [+](#) [✖](#) [👁](#)

Profondita:

Replica:

Id parametro: [✎](#) [+](#) [✖](#) [👁](#)

X offset m:

Y offset m:

North offset deg:

Nadir deg:

Id strumento: [✎](#) [+](#) [👁](#)

SAVE

Save and add another

Save and continue editing

Record everything!

Start typing to filter...

AUTHENTICATION AND AUTHORIZATION

Groups + Add

Users + Add

WEB

Elenco Nomi Punti + Add

Elenco Strumenti + Add

Elenco parametri + Add

Elenco punti + Add

Elenco siti + Add

Elenco tipi di operazioni + Add

Registro Operazioni + Add

Select registro operazioni to change

ID OPERAZIONE	SITO	NOME PUNTO	SERIAL NUMBER	DATA
cambio_trasduttore_SR50	CM	CM METEO	SR50A-1624 nivometro	Jan. 7, 2023, noon
Fine_malfunzionamento	CM	CM METEO	Pluvio2OTT400_CF pluviometro	Dec. 25, 2020, midnight
Inizio_malfunzionamento	CM	CM METEO	Pluvio2OTT400_CF pluviometro	Oct. 28, 2020, midnight
cambio_antigelo_OTT	CM	CM METEO	Pluvio2OTT400_CF pluviometro	Dec. 21, 2021, 3:36 p.m.
controllo e correzione bolla	ND	ND EDDY	CSAT3D_1990 anemometro_3D	Sept. 24, 2021, 1:18 p.m.
controllo e correzione bolla	ND	ND METEO	CNR4_090054 radiometro	Sept. 24, 2021, 1:18 p.m.
cambio_antigelo_OTT	ND	ND METEO	Pluvio2OTT400_279161 pluviometro	Sept. 24, 2021, 1:17 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C441_C442 sapflow	June 25, 2021, 1:40 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C43E_C43D sapflow	June 25, 2021, 1:39 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C43F_C440 sapflow	June 25, 2021, 1:38 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C43C_C43B sapflow	June 25, 2021, 1:38 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C0DD_CODE sapflow	June 25, 2021, 1:37 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C0DB_C0DC sapflow	June 25, 2021, 1:36 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C443_C444 sapflow	June 25, 2021, 1:34 p.m.
Installazione	LD	LD SAPFLOW	SFS2_M12_C0D9_C0DA sapflow	June 25, 2021, 1:33 p.m.
Installazione	LAUS	LAUS NDVI	44033 spettro_radiometro	July 11, 2019, noon
Installazione	LAUS	LAUS NDVI	44032 spettro_radiometro	July 11, 2019, noon
Installazione	LAUS	LAUS NDVI	cr800_ecometer_53970 logger_cr800	July 11, 2019, noon
Rimozione	ORV	ORV NDVI	44033 spettro_radiometro	June 30, 2019, 10:34 a.m.

Select operazioni to change

OPERAZIONI

Acquisto

Rientro_assistenza

Invio_assistenza

Rottamazione

scarico e pulizia logger

montaggio flange

sostituzione_modem

cambio_batteria_interna_logger

cambio_batteria_stazione

scarico_e_cambio_batteria

scarico_e_controllo_batteria

svuotamento_parziale_OTT

cambio_trasduttore_SR50

cambio_antigelo_OTT

controllo e correzione bolla

pulizia

Field_calibration

Lab_calibration

Fine_malfunzionamento