MyMETEOTRACKER GUIDE

Background

MeteoTracker is a comprehensive hardware and software solution for implementing mobile weather networks based on the "**vehicle as a mobile sensor**" paradigm. Different solutions are available, tailored for different use cases:

- MeteoTracker Personal Weather Device for individual usage
- MeteoTracker Citizen Science for collective projects
- MeteoTracker Standalone for turning a service fleet in a mobile weather network with totally automated data collections

The measurement device (MeteoTracker X) is based on a patented invention (RECS, Radiation Error Correction System, patent US11,525,745, JP 7198510 and EU EP3645989) that allows for very accurate measurements even under strong solar radiation exposure at very low-speed.

MyMeteotracker is an optional data service module designed for the MeteoTracker Personal Weather Device solution.

1. MyMeteoTracker functionalities

The access to MyMeteoTracker is by a customized URL, generated by the system and sent to the user by email when he performs the first MeteoTracker session.

MyMeteotracker main features:

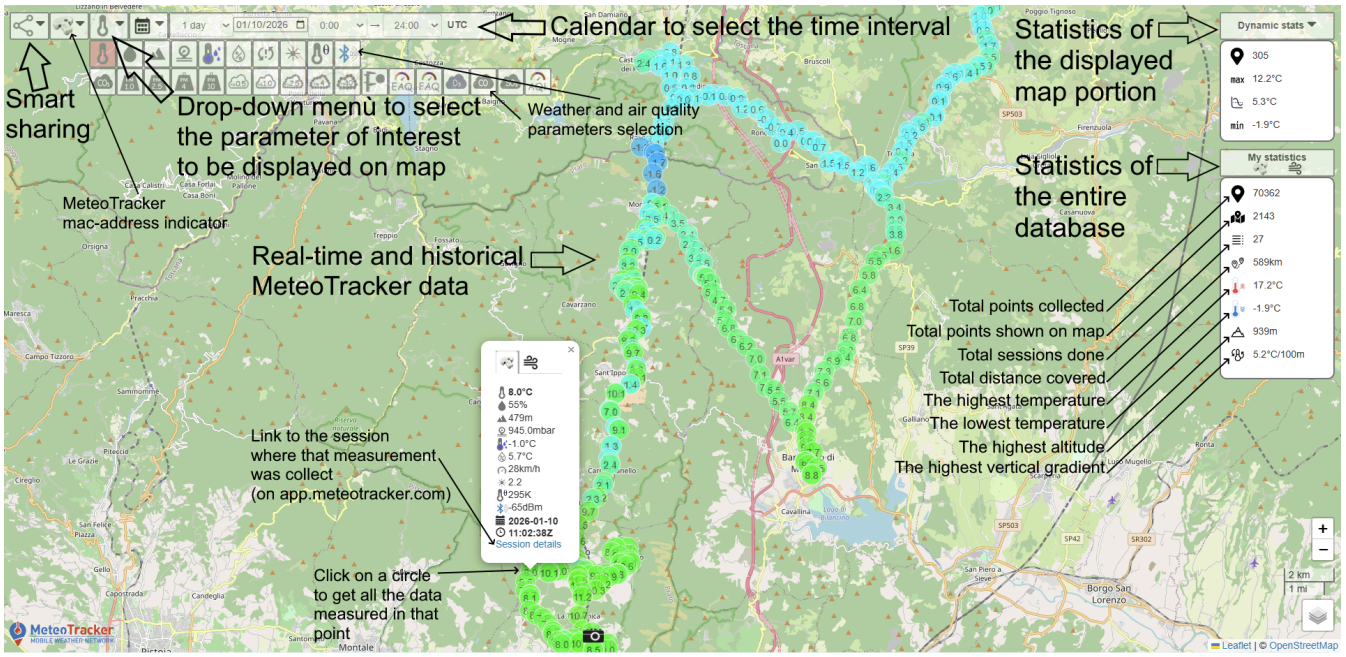
- **Personal interactive map**, intuitive and easy to use, with all your data **embeddable on any website** via a simple i-frame
- **Real-time data** and your **entire archive** always available on the map
- **Selectable display parameters** via a dedicated drop-down menu
- **Global statistics,** calculated across your entire data collection
- **Dynamic statistics** calculated on the selected geographic area and time range

- **Smart sharing**, with automatic URL generation based on the selected geographic area, parameter, and time range
- **Direct access to your MeteoPhotos**, displayed on the map at the exact location where they were taken
- **Virtual fixed stations** (geo-fencing feature to capture MeteoTracker data measured within a user-defined geographic area)
- **Advanced CSV management** for downloading your sessions
- **Unlimited access** to the public MeteoTracker database

1.1. The interactive map

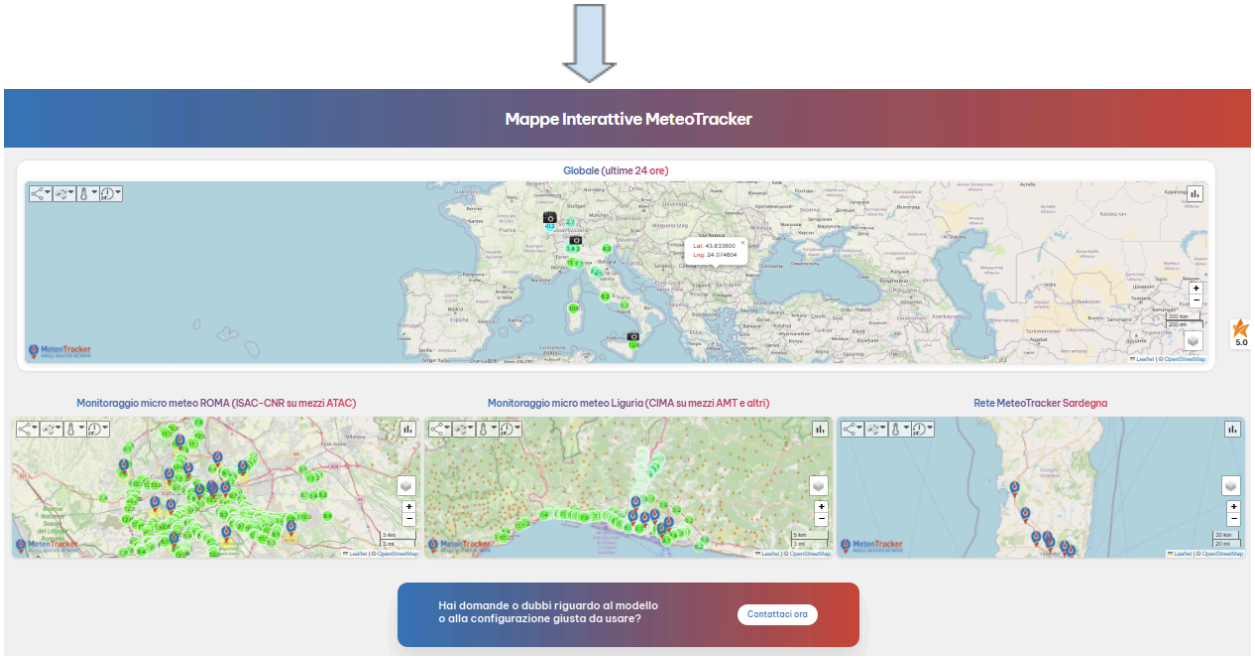
The interactive map shows the measured values by the user's MeteoTracker, placing the observed value in the location where they have been collected.
A fixed ratio of **one measurement per minute** is shown in the map to preserve readability, a value that is typically less than the real number of measurements collected by the MeteoTracker device.
The extreme values (max and min) are always shown in the map. For each measurement point, a link to the session where the data is collected is provided for a more in depth analysis on the MeteoTracker dashboard (app.meteotracker.com).

The image below illustrates the main features of the interactive map

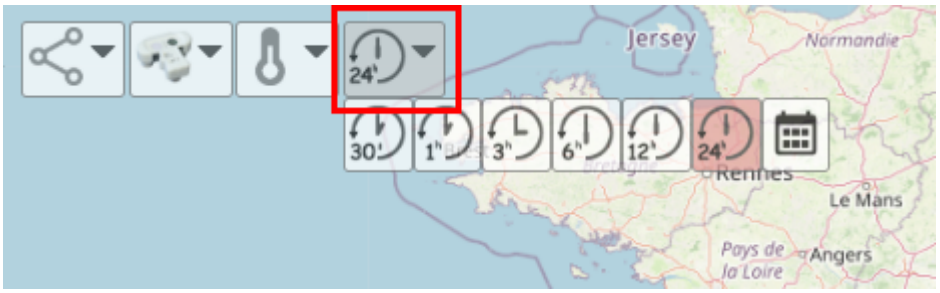


The MeteoTracker interactive map can be embedded in every website by a simple i-frame, see example below.

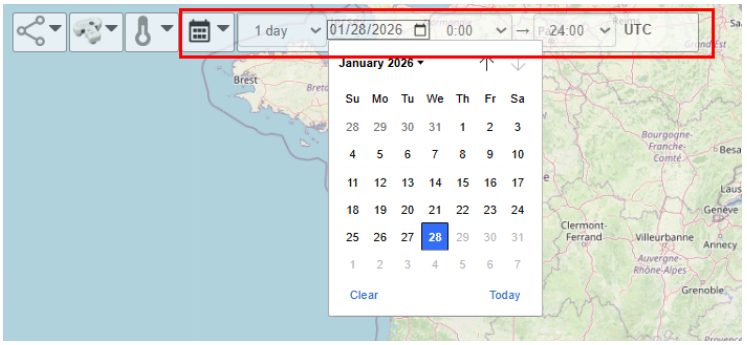
<iframe src="https://app.meteotracker.com/html/map/world?lat=45&lon=10&zoom=5" allow="clipboard-write" width="100%" height="700"></iframe>



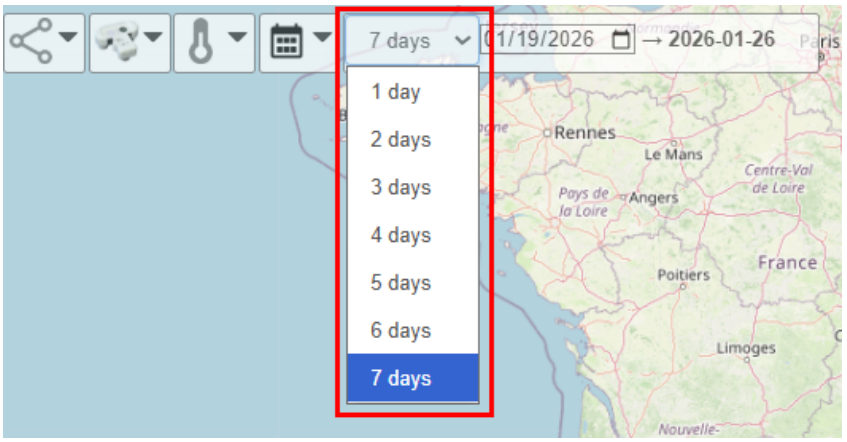
The default time interval is "last 24 hours". Other pre-defined intervals are the **last 12, 6, 3, 1 and 0.5 hours**.



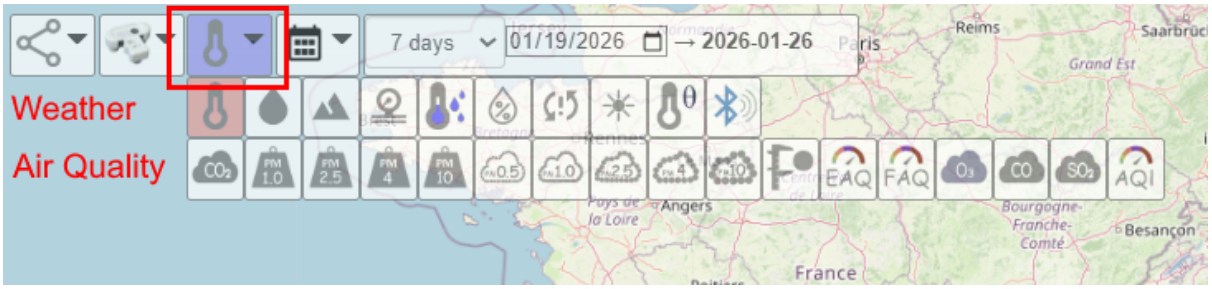
Data are real-time displayed in the map. Past data can be visualized by means of the **dedicated calendar function** (selection of date and time interval of interest)



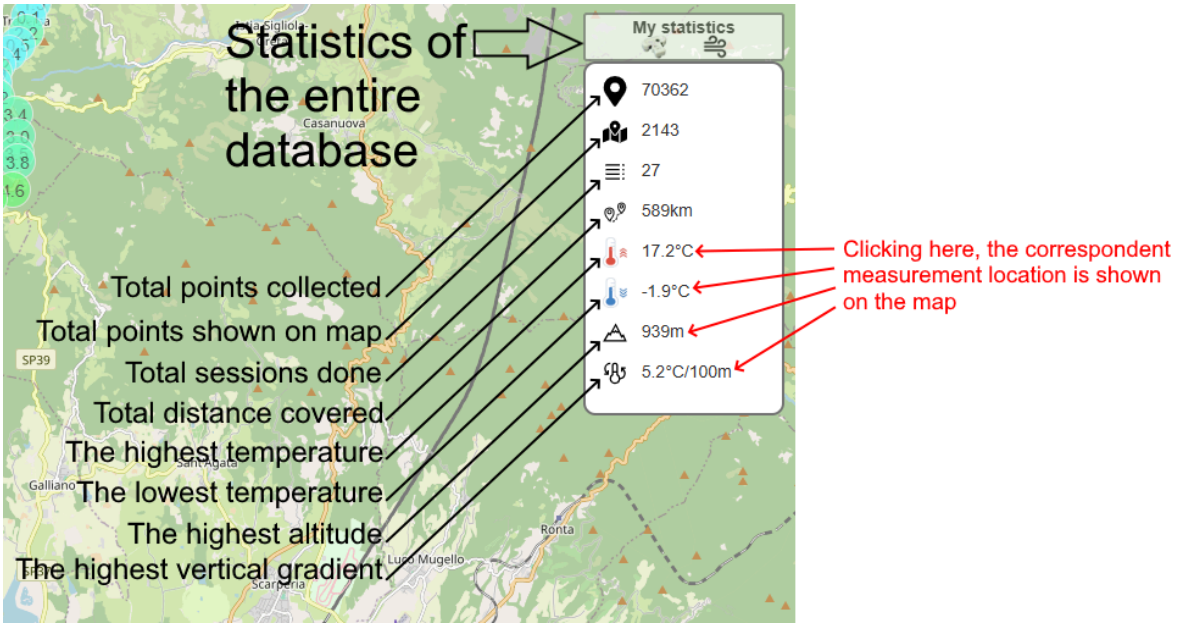
Also, a **1-to-7days interval** starting from the selected data can be set. In the example below, all the data collected between January 19 and January 26 are shown in the map



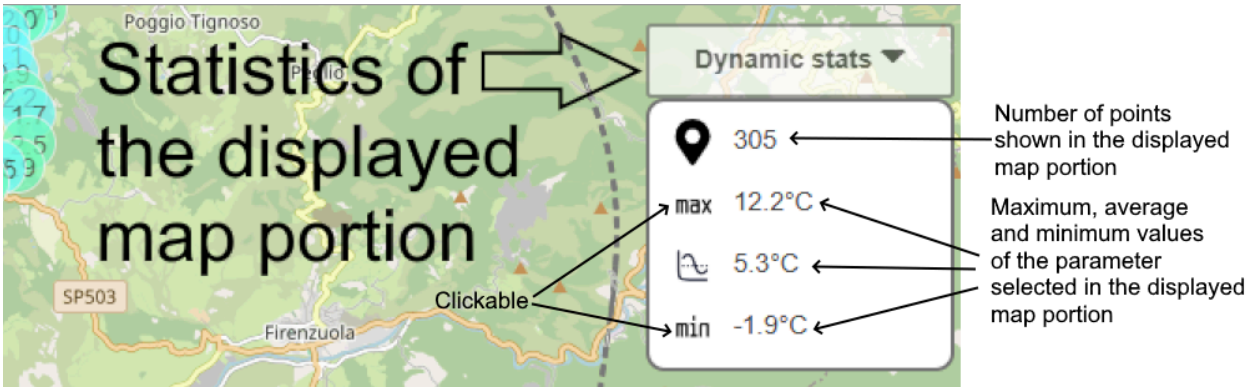
The parameter to be displayed in the map can be selected by the **dedicated drop-down menù**. The default value is temperature



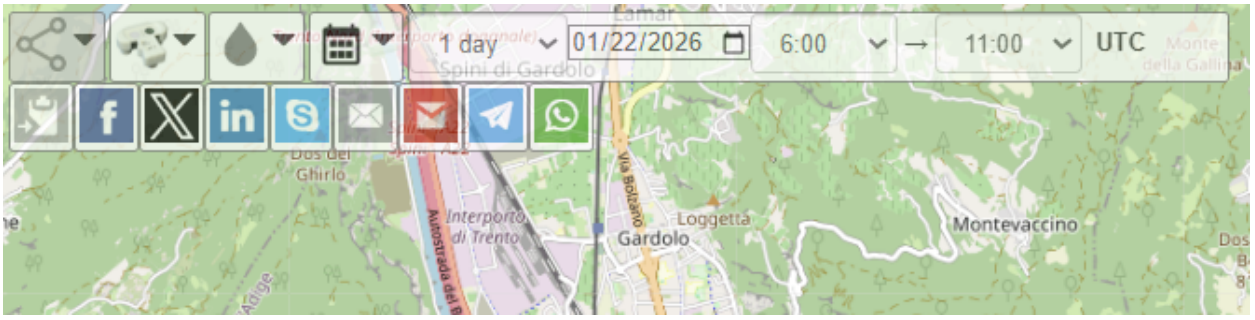
Global statistics are referred to the entire user database and provides the data shown below::



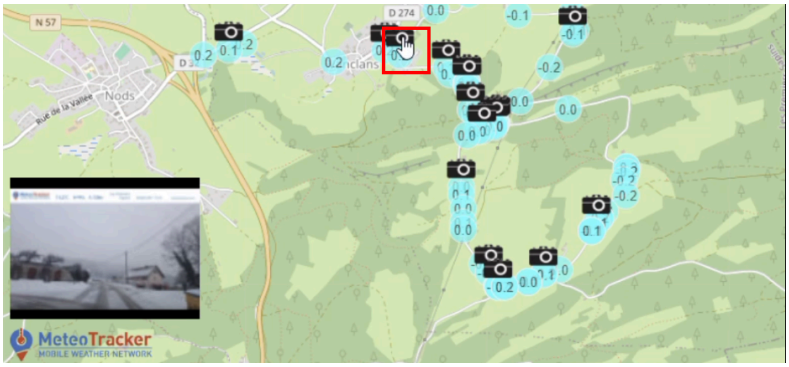
Dynamic statistics are calculated on the selected geographic area and time range



Smart Sharing is a functionality that **generates the URL referred to the framed map portion, parameter and time interval selected**. In the example below, the URL is referred to relative humidity in the Treno area, on January 22 between 6 AM and 11 AM
https://app.meteotracker.com/html/myMT/rizzo?lat=46.065&lon=11.221&zoom=13&id=H&date=2026-01-22&timeFrom=6&timeTo=11&tags=AC:4D:16:2B:47:26

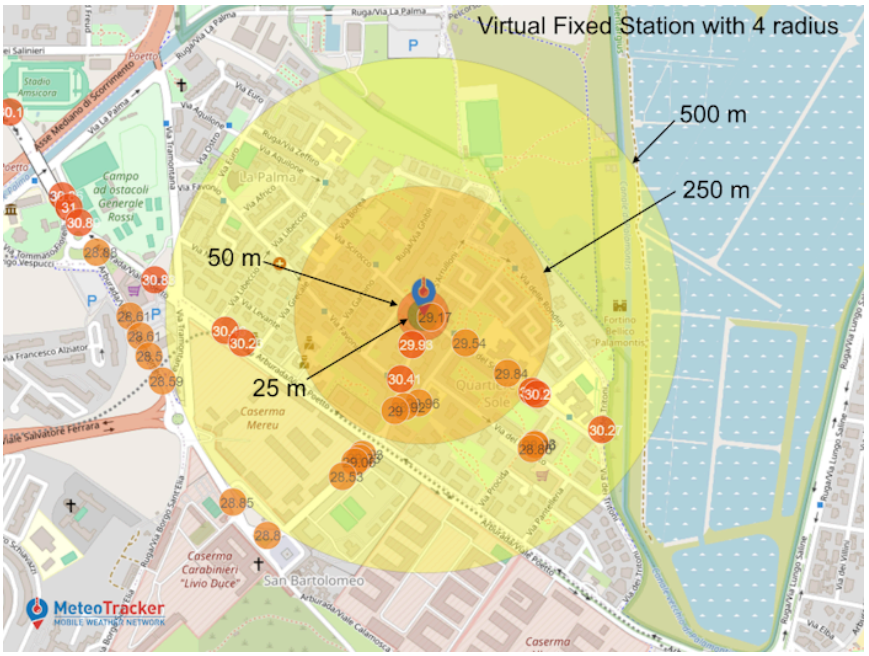


MeteoPhoto is a functionality of the MeteoTracker app that superimposes the weather data measured when the picture is taken. MeteoPhoto are then associated with the related sessions on the dashboard (app.meteotracker.com).
MyMeteoTracker extends the fruition of the personal MeteoPhotos collection showing them on the interactive map, with each icon placed in the location where the photo has been taken. **Mouse-hovering on an icon** shows the MeteoPhoto preview. Clicking on the preview, the MeteoPhoto is enlarged.



1.2. The Virtual Fixed Stations (VFS)

A VFS is a geo-fencing function that allows the user to **select a point of interest** and **one or more radius** centered on it and to ***capture* all the data collected by a MeteoTracker unit transiting within that radius**. In this way, **a time-series sequence of data is collected**, emulating a fixed weather station and thus **performing a spatial-to-time transformation**. For each VFS, **as many radius of capture as desidered** can be set. Each radius of capture produces its own time-series data flow.



Setting up of the MeteoTracker VFS is a quick and straightforward process, to be done on app.meteotracker.com. The main steps are listed below

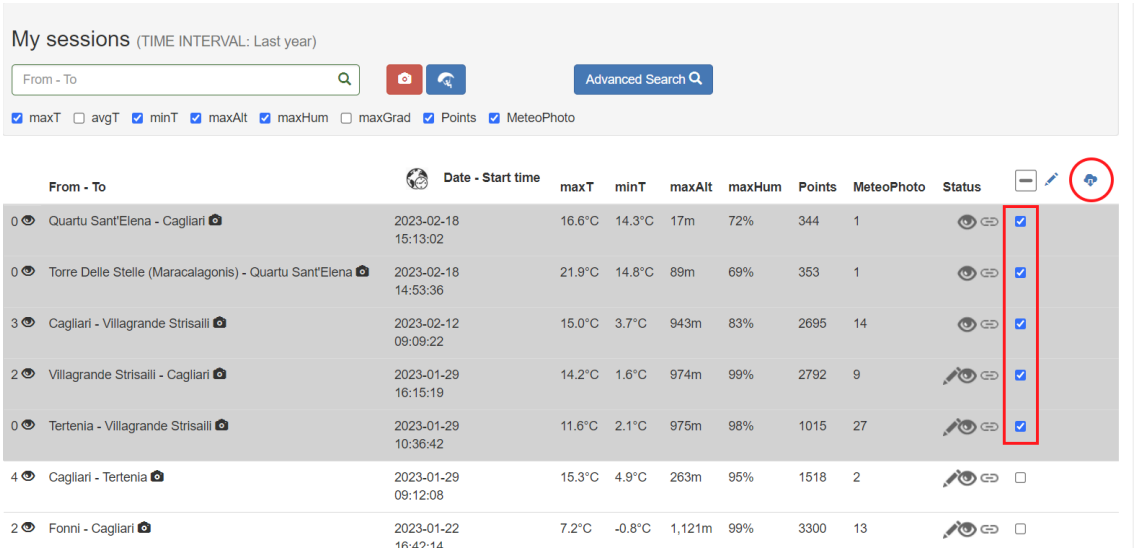
- A place of interest where time-series data are needed (the VFS location) is identified on the MT interactive map. Latitude and longitude are shown in the MeteoTracker interactive map clicking in the selected place
- One or more radius of capture are set
- Each MT measurement performed within a radius of capture is associated to the VFS
- A graph of the measured variables by a MT unit passing within the radius of capture is associated with the VFS. Each radius of capture has its own plots
- The VFS data can be CSV exported for each radius of capture
- A dedicated API is available to integrate the VFS data flow into third party platforms.

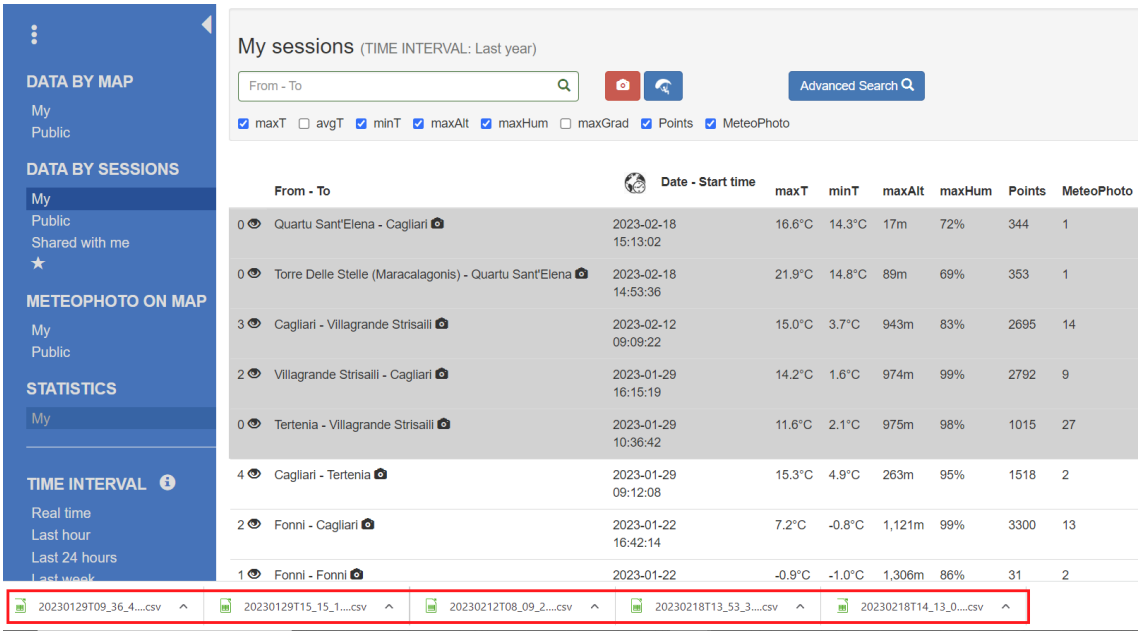
The VFS manual with step-by-step instructions is available here

1.3. Advanced CSV management

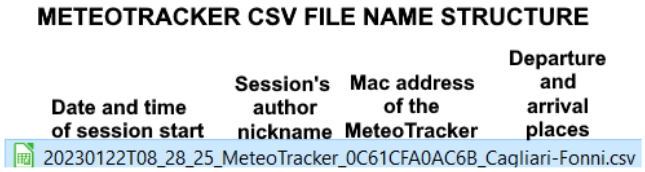
MyMeteoTracker enables **batch download of the CSV files** of the measurement sessions:

1) Multiple selection of the sessions to be downloaded
2) Click on the CSV icon placed on the right above the sessions list





3) **Each CSV file is downloaded and named with a speaking code** containing all the relevant information of the each session



The CSV file contains all the measured parameters, each of them geo and time-tagged

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	A	B	C	D	E	F	G	H	I	J	K	L	M
								DEW-POINT		VERTICAL THERMAL GRADIENT			
1	Time	Lat	Lon	Alt [m]	Temp [°C]	Hum [%]	Press [mbar]	DP [°C]	Radiation	Inversion [°C/100m]	HDX [°C]		
2	2022-09-03T11:09:38+0200	39.200437	9.149159	18	28.9	82	1014	25.4	1.3	-	43.7		
3	2022-09-03T11:09:42+0200	39.200573	9.148931	18	28.9	82	1014	25.4	1.3	-	43.6		
4	2022-09-03T11:09:44+0200	39.200742	9.148690	19	29.0	82	1014	25.4	1.4	-	43.7		
5	2022-09-03T11:09:47+0200	39.200924	9.148444	19	29.0	81	1014	25.4	1.3	-	43.7		
6	2022-09-03T11:09:50+0200	39.201213	9.148064	20	29.0	81	1014	25.3	1.3	-	43.6		
7	2022-09-03T11:09:53+0200	39.201477	9.147771	19	29.0	80	1014	25.1	1.1	-	43.2		
8	2022-09-03T11:09:56+0200	39.201696	9.147482	19	28.9	80	1014	25.0	1.4	-	43.1		
9	2022-09-03T11:09:59+0200	39.201877	9.147183	19	29.0	80	1014	25.1	1.3	-	43.3		
10	2022-09-03T11:10:02+0200	39.202061	9.146882	19	29.0	80	1014	25.1	1.6	-	43.4		
11	2022-09-03T11:10:05+0200	39.202131	9.146688	19	29.1	80	1014	25.1	1.6	-	43.5		
12	2022-09-03T11:10:08+0200	39.202237	9.146575	18	28.9	79	1014	24.9	2.9	-	43.0		
13	2022-09-03T11:10:11+0200	39.202346	9.146466	18	28.9	79	1014	24.7	3.5	-	42.8		
14	2022-09-03T11:10:14+0200	39.202483	9.146608	19	28.8	79	1014	24.7	4.2	-	42.6		
15	2022-09-03T11:10:17+0200	39.202643	9.146769	19	29.0	78	1014	24.8	3.1	-	43.1		
16	2022-09-03T11:10:20+0200	39.202837	9.146975	18	28.8	78	1014	24.6	4.5	-	42.5		
17	2022-09-03T11:10:23+0200	39.203018	9.146952	19	29.1	78	1014	24.8	2.8	-	43.1		
18	2022-09-03T11:10:26+0200	39.203144	9.146783	19	29.0	78	1014	24.7	4.0	-	42.8		
19	2022-09-03T11:10:29+0200	39.203272	9.146482	20	29.0	78	1014	24.8	4.7	-	43.0		
20	2022-09-03T11:10:32+0200	39.203406	9.146157	20	29.1	78	1014	24.7	4.7	-	42.9		
21	2022-09-03T11:10:35+0200	39.203557	9.145858	20	29.1	77	1014	24.6	4.8	-	42.8		
22	2022-09-03T11:10:38+0200	39.203713	9.145571	19	29.1	77	1014	24.7	4.8	-	42.9		
23	2022-09-03T11:10:41+0200	39.203729	9.145348	18	29.1	77	1014	24.7	4.4	-	42.9		
24	2022-09-03T11:10:44+0200	39.203802	9.145156	19	29.1	77	1014	24.6	5.1	-	42.8		
25	2022-09-03T11:10:47+0200	39.203683	9.144916	19	29.1	77	1014	24.6	5.2	-	42.8		
26	2022-09-03T11:10:50+0200	39.203628	9.144685	19	29.1	77	1014	24.5	5.2	-	42.7		
27	2022-09-03T11:10:53+0200	39.203777	9.144359	19	29.1	77	1014	24.6	5.6	-	42.8		
28	2022-09-03T11:10:56+0200	39.204016	9.144054	19	29.1	77	1014	24.6	5.6	-	42.8		
29	2022-09-03T11:10:59+0200	39.204194	9.143802	18	29.1	77	1014	24.5	5.6	-	42.7		
30	2022-09-03T11:11:02+0200	39.204222	9.143667	18	29.1	76	1014	24.5	5.0	-	42.7		
31	2022-09-03T11:11:05+0200	39.204229	9.143541	19	29.1	76	1014	24.5	5.6	-	42.6		
32	2022-09-03T11:11:08+0200	39.204196	9.143504	18	29.1	76	1014	24.5	-	-	42.6		
33	2022-09-03T11:11:11+0200	39.204210	9.143479	19	29.1	76	1014	24.4	-	-	42.5		
34	2022-09-03T11:11:14+0200	39.204275	9.143377	19	29.2	76	1014	24.5	-	-	42.7		

1.4. Unlimited access to the public MeteoTracker database

While the standard MeteoTracker account has fully access to its own measurement session on app.meteotracker.com, MyMeteoTracker enables a full, unlimited access to all the public MeteoTracker sessions. Each public session can be analyzed in depth (map, graph, statistics)

REFERENCES

- MeteoTracker documentation
- www.meteotracker.com
- info@meteotracker.com
- https://www.linkedin.com/showcase/meteotracker/