

Etna Field Campaign

June 2025

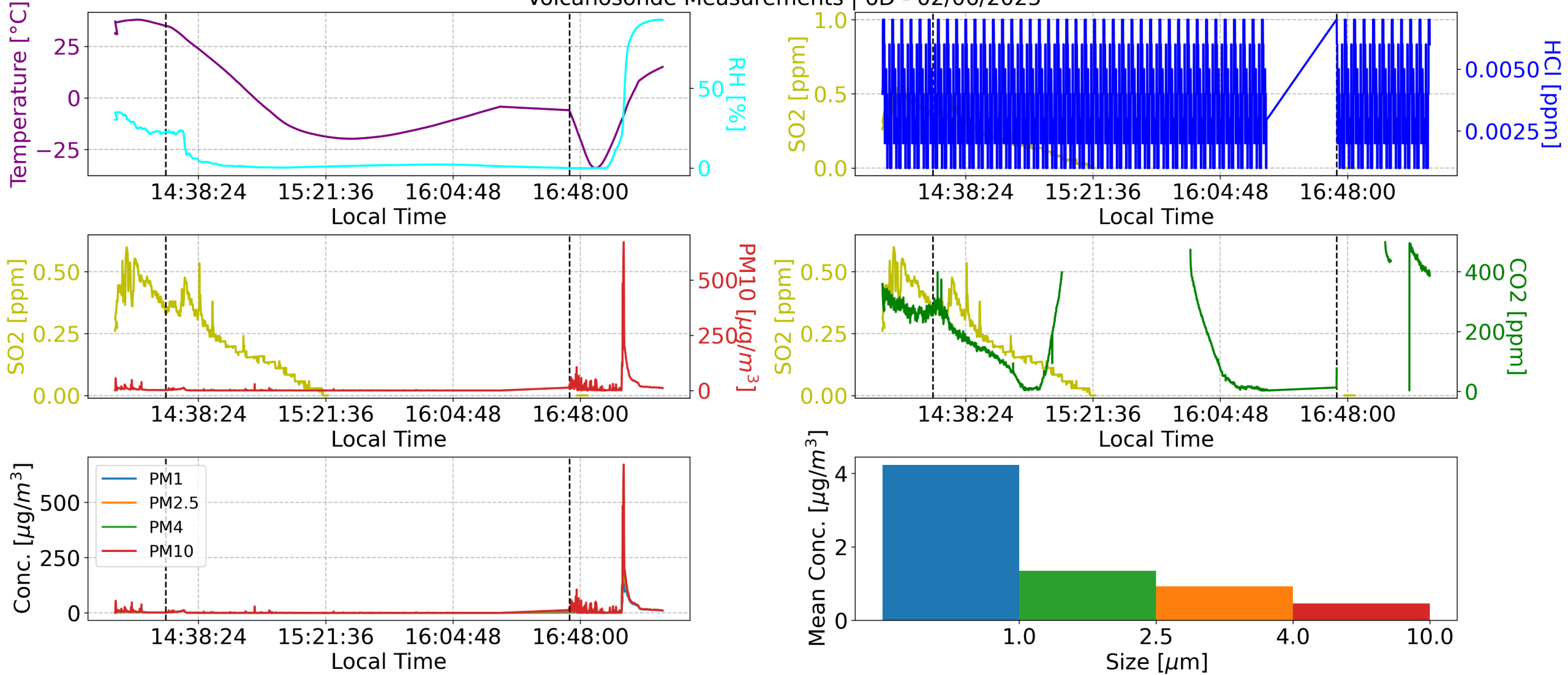
Activities Overview

Date	Comments
02-06-2025 – Balloon launch	Data shows that the volcanosonde probably cross the plume
03-06-2025 – Tethered balloon (Walking - Northeast)	Two volcanosonde: Good data
04-06-2025 – Tethered balloon (Crater – Northeast)	Two volcanosonde: Good data, but one CO2 sensor showed failures.
05-06-2025: - Tethered balloon (Walking southeast) - In-situ measurements (Crater – Northeast)	Three volcanosonde: Good data, only one SO2 sensor showed failures.
06-06-2025 – Drone flight experiment with volcanosonde	Good data

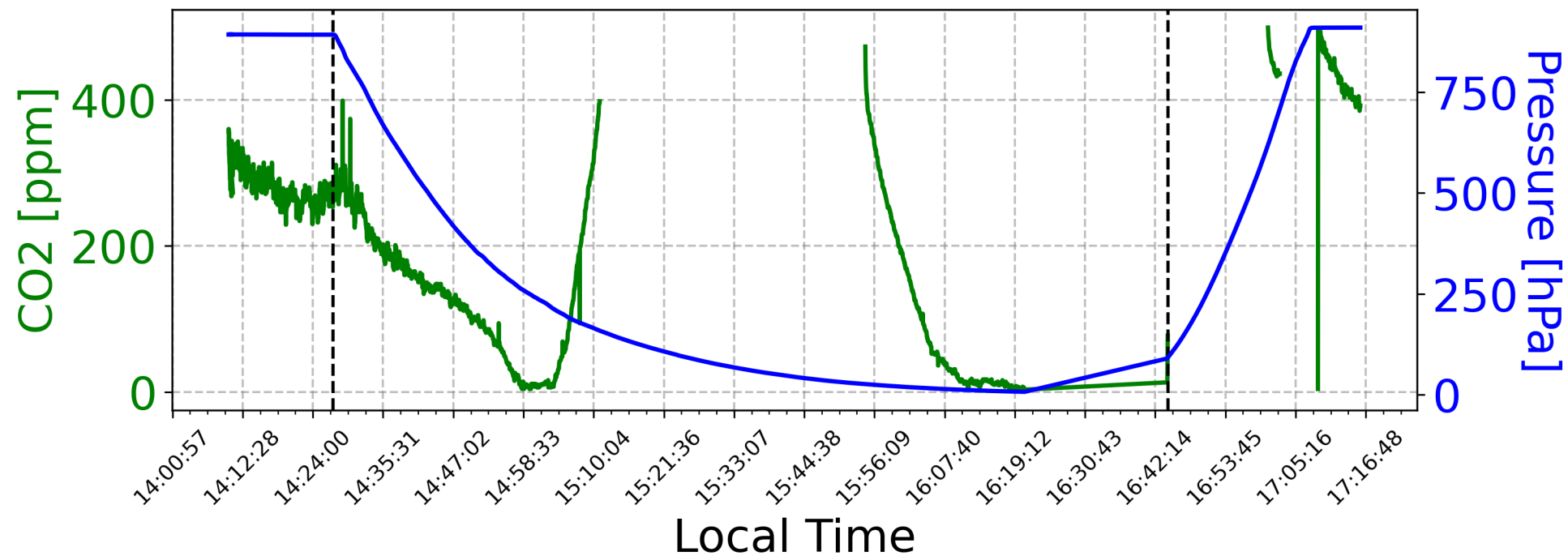
- SO2 sensor on board of volcanosonde 6D looks *breakdown*

02-06-2025

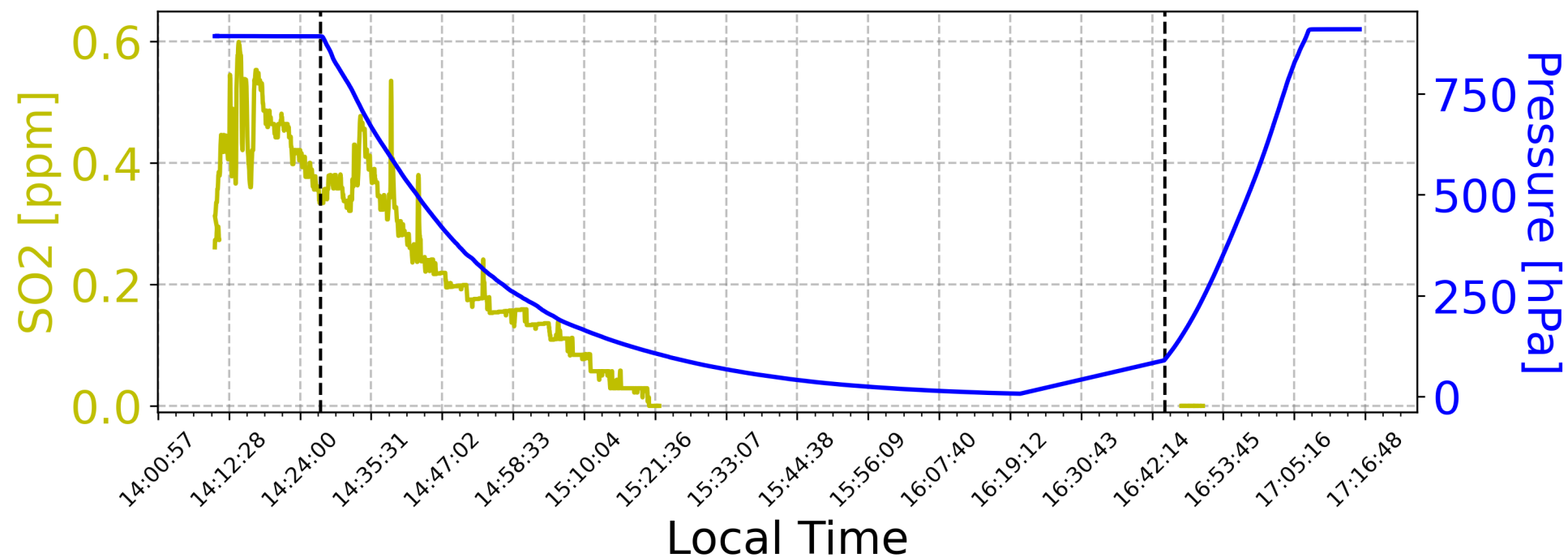
Volcanosonde Measurements | 6D - 02/06/2025



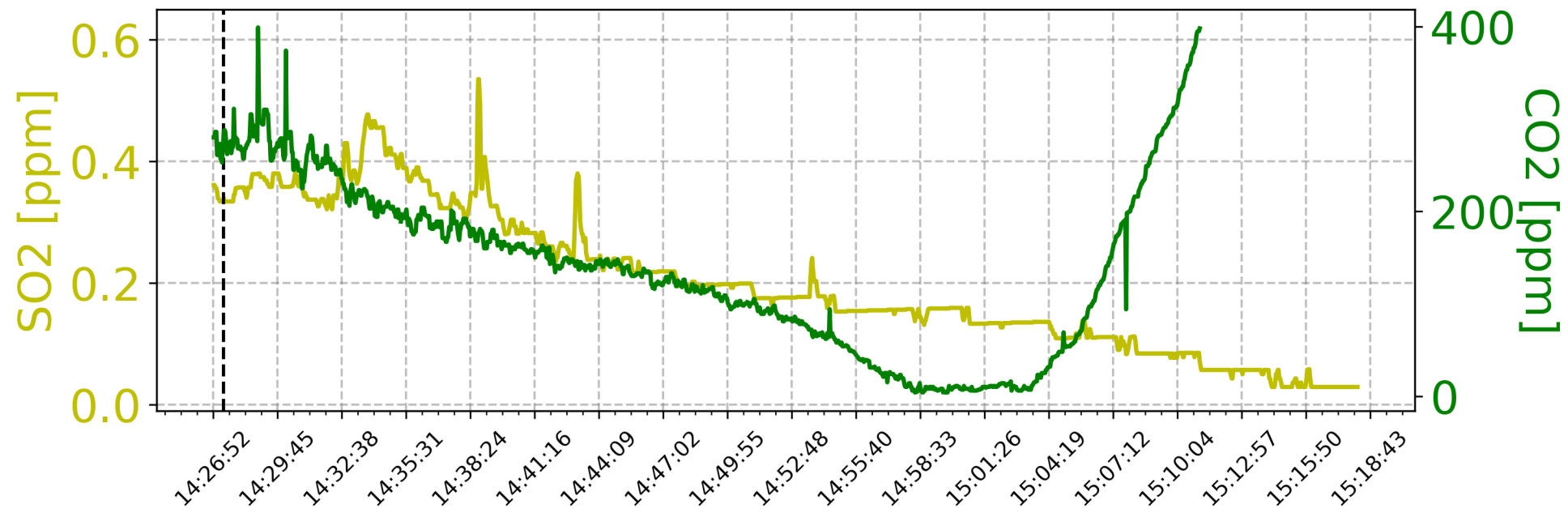
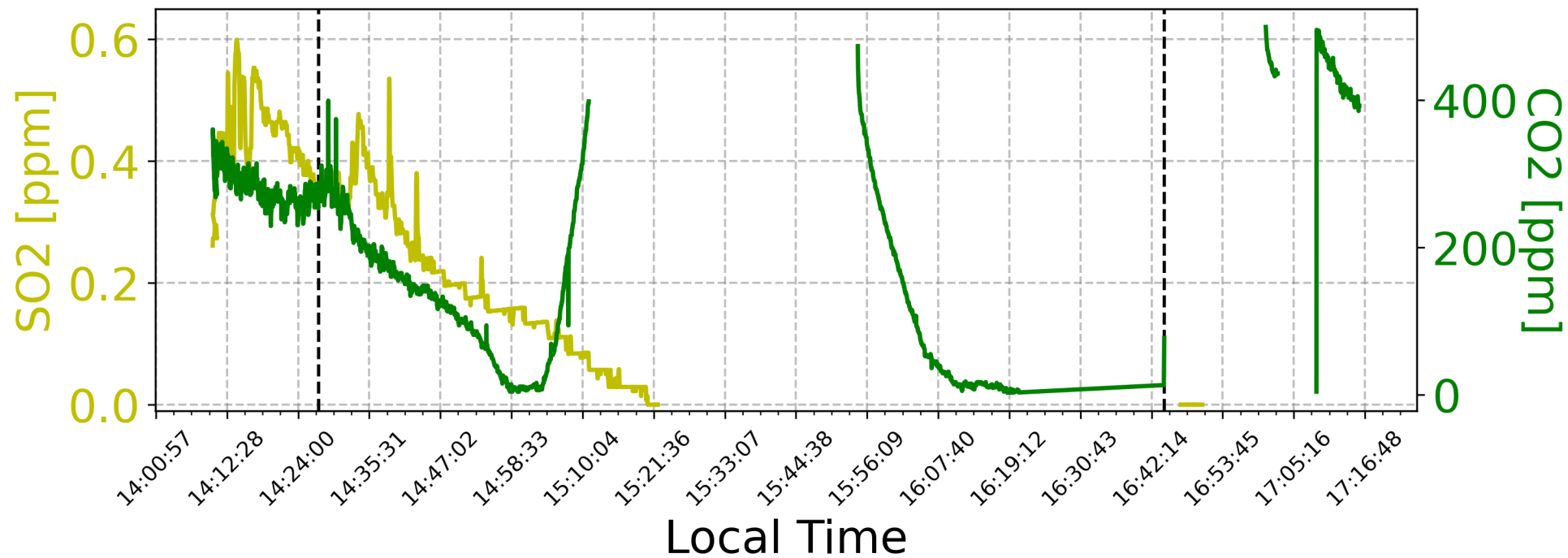
Volcanosonde Measurements | 6D - 02/06/2025



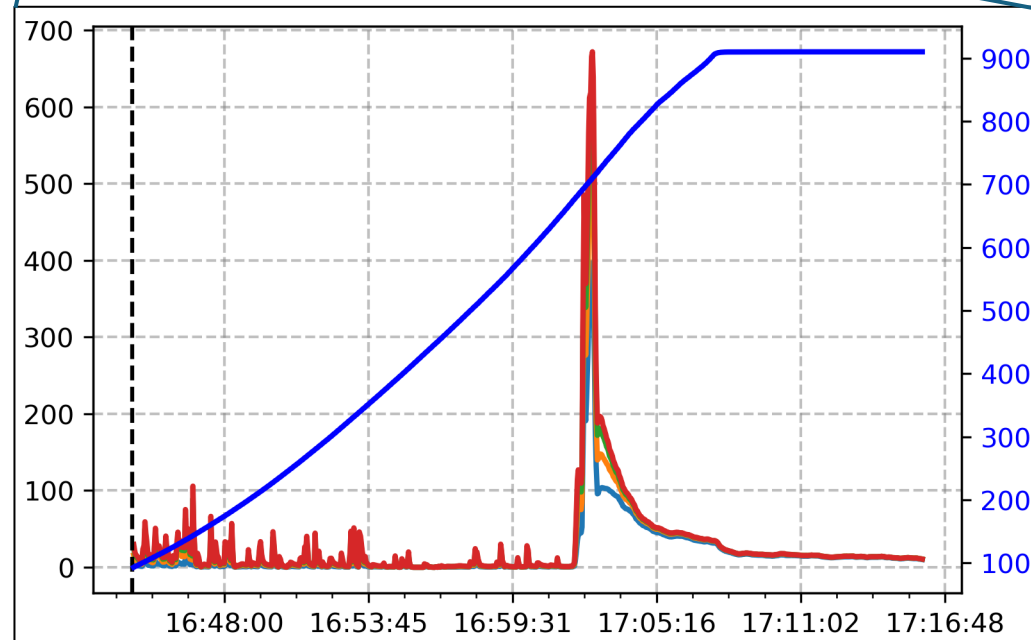
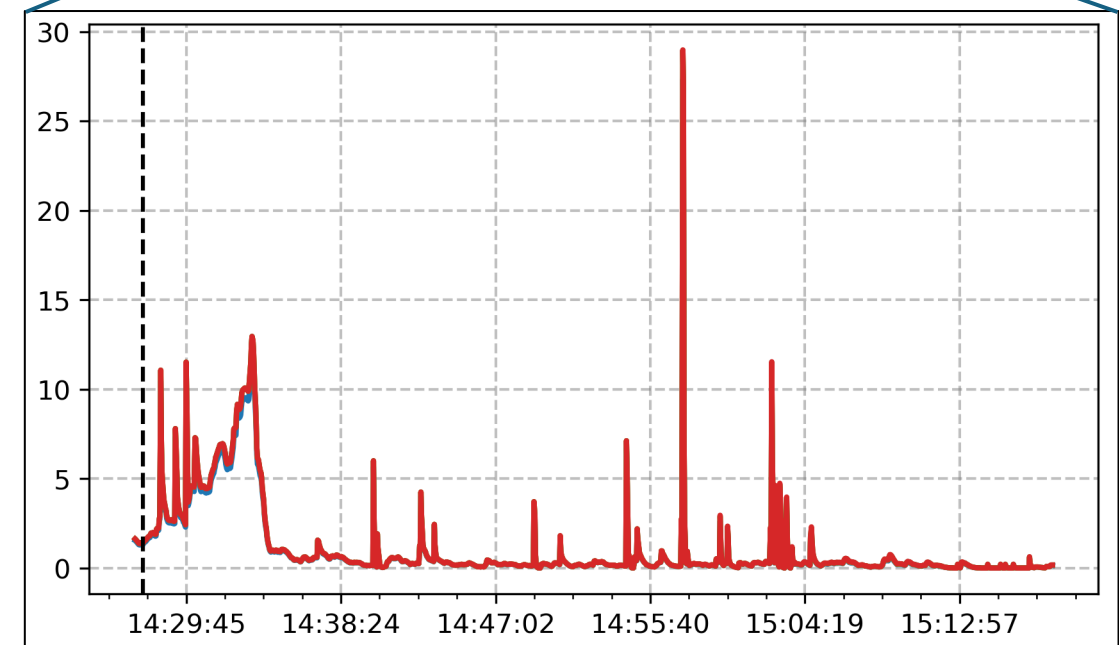
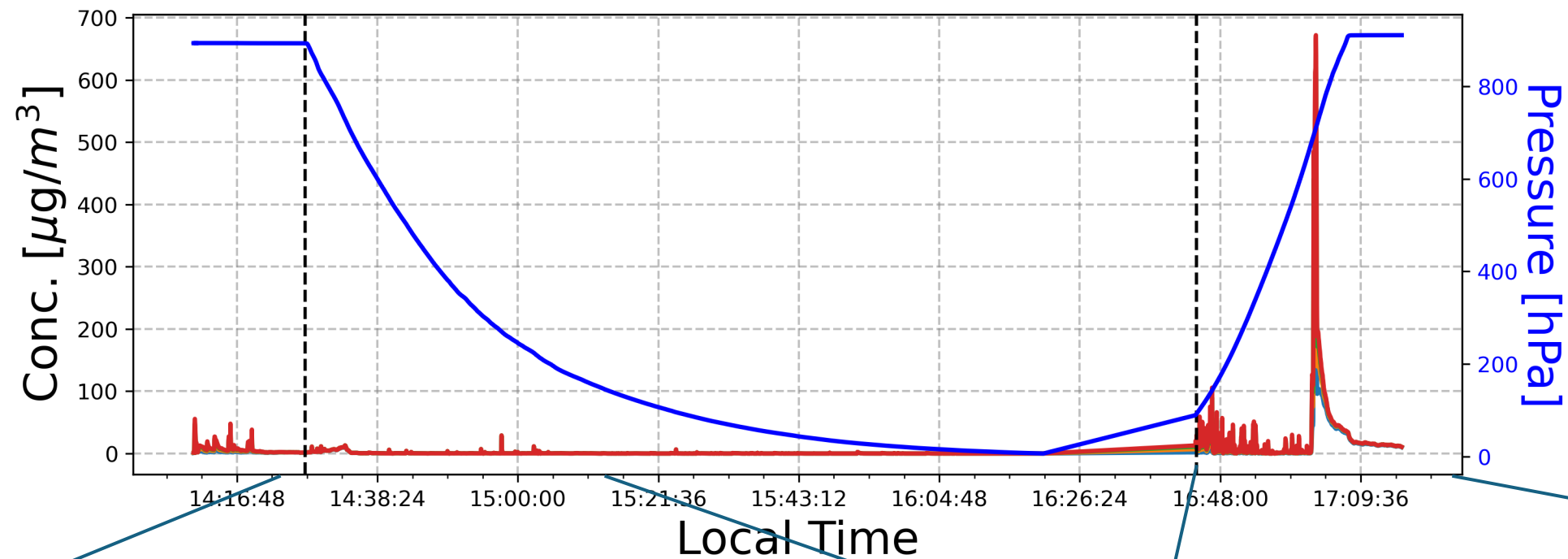
Volcanosonde Measurements | 6D - 02/06/2025



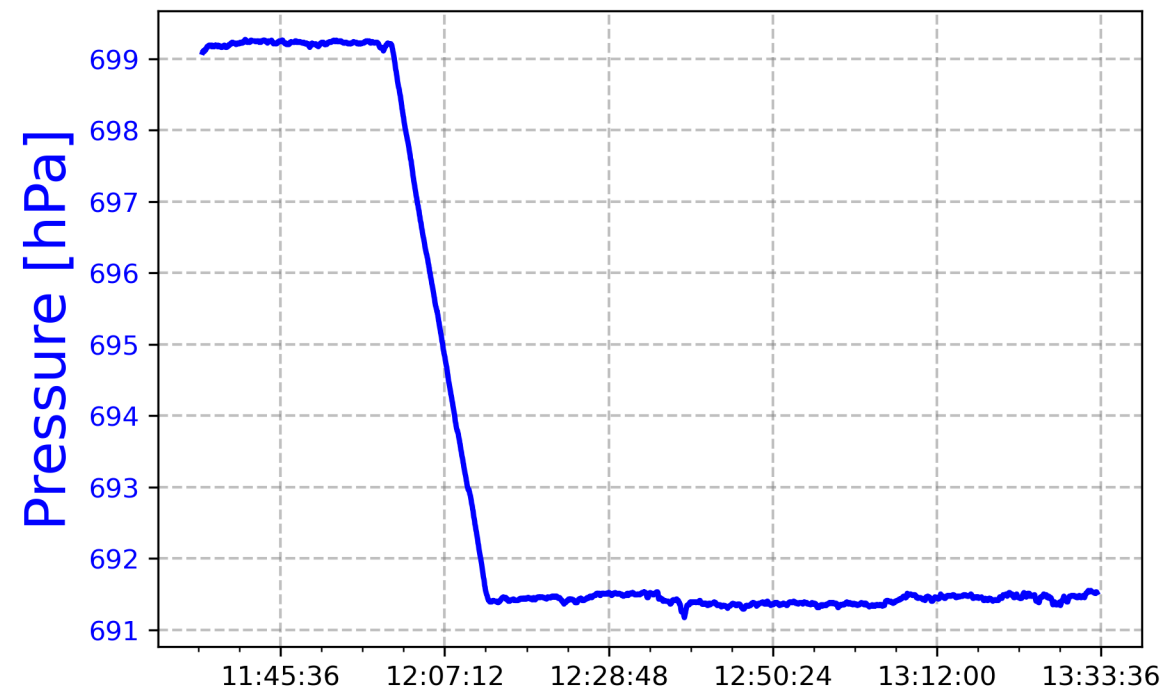
Volcanosonde Measurements | 6D - 02/06/2025



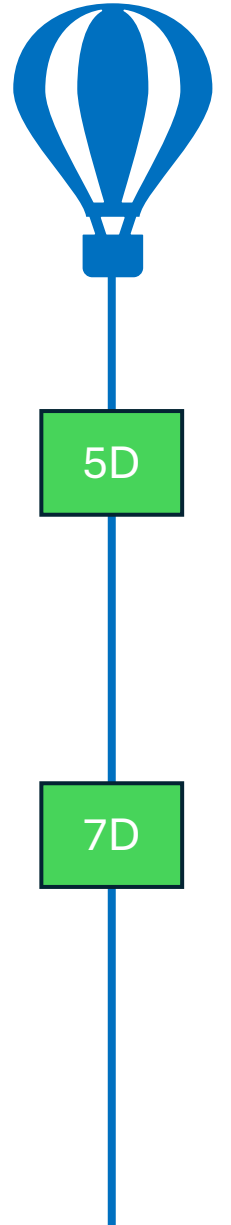
Volcanosonde Measurements | 6D - 02/06/2025



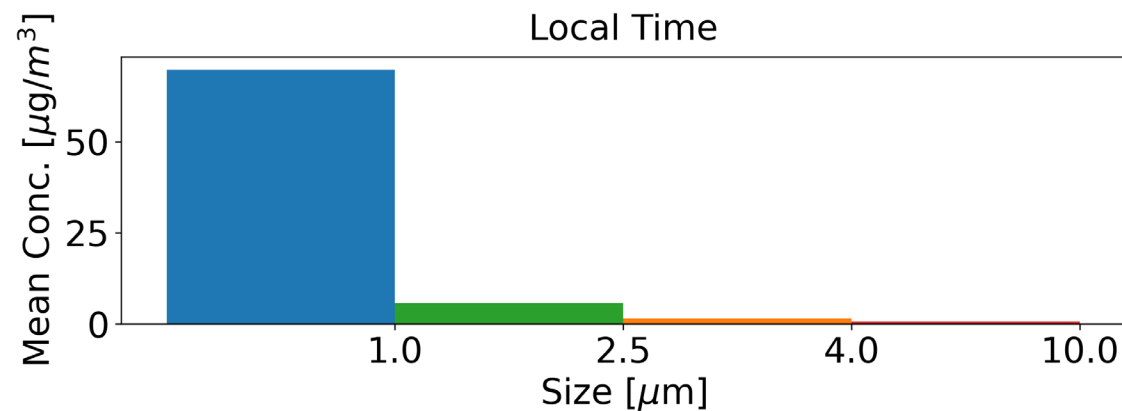
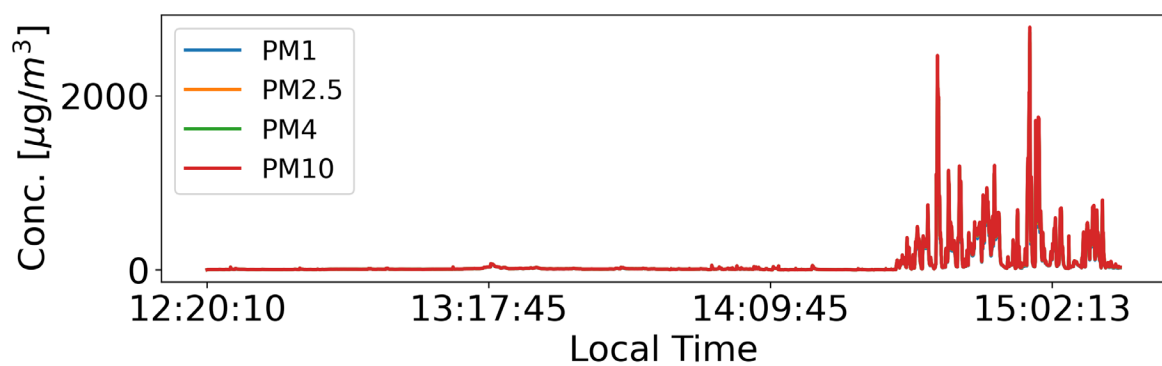
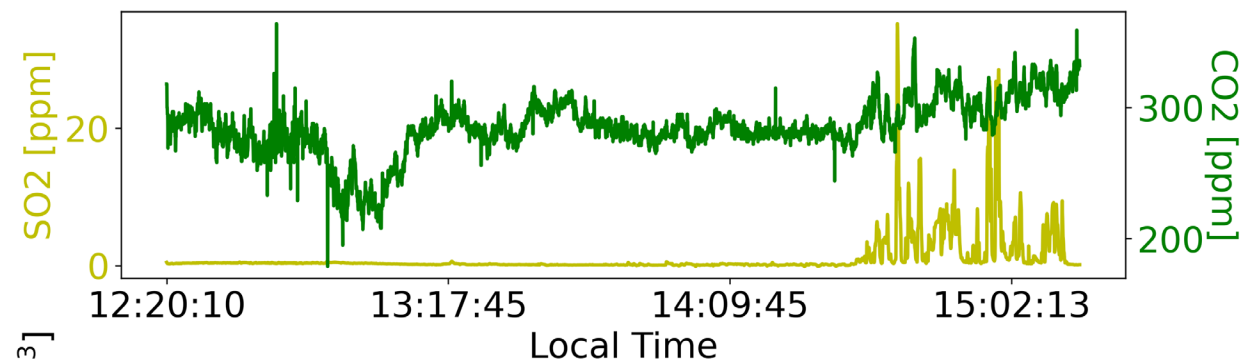
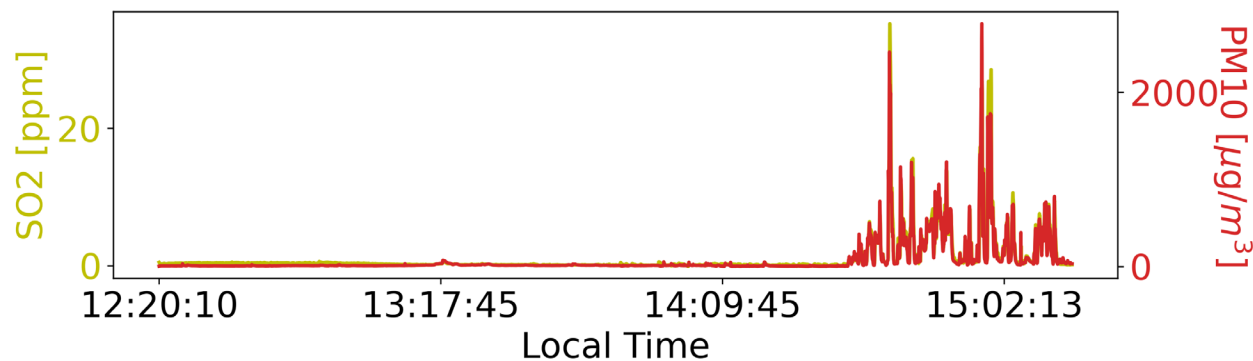
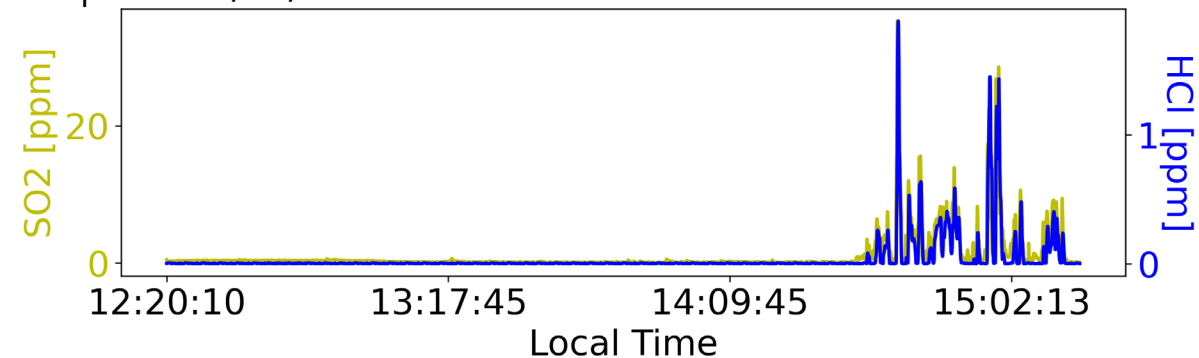
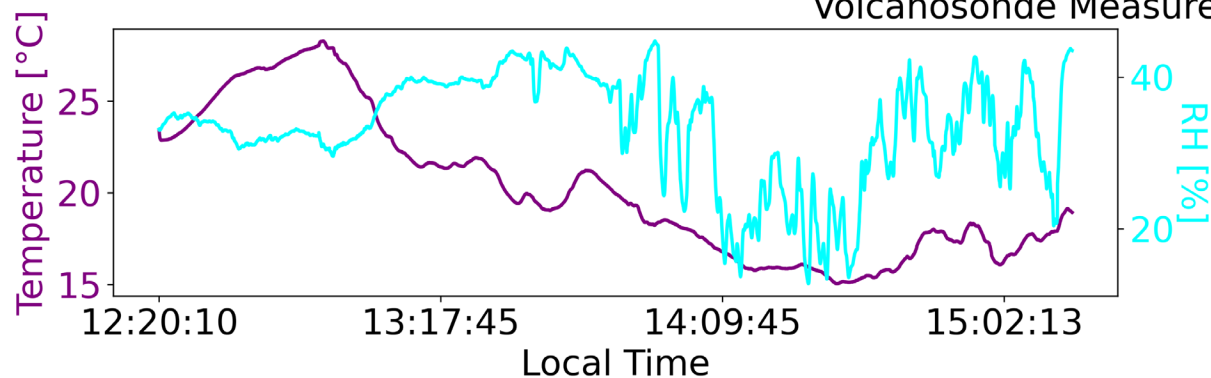
Volcanosonde Measurements | 1D - 05/06/2025



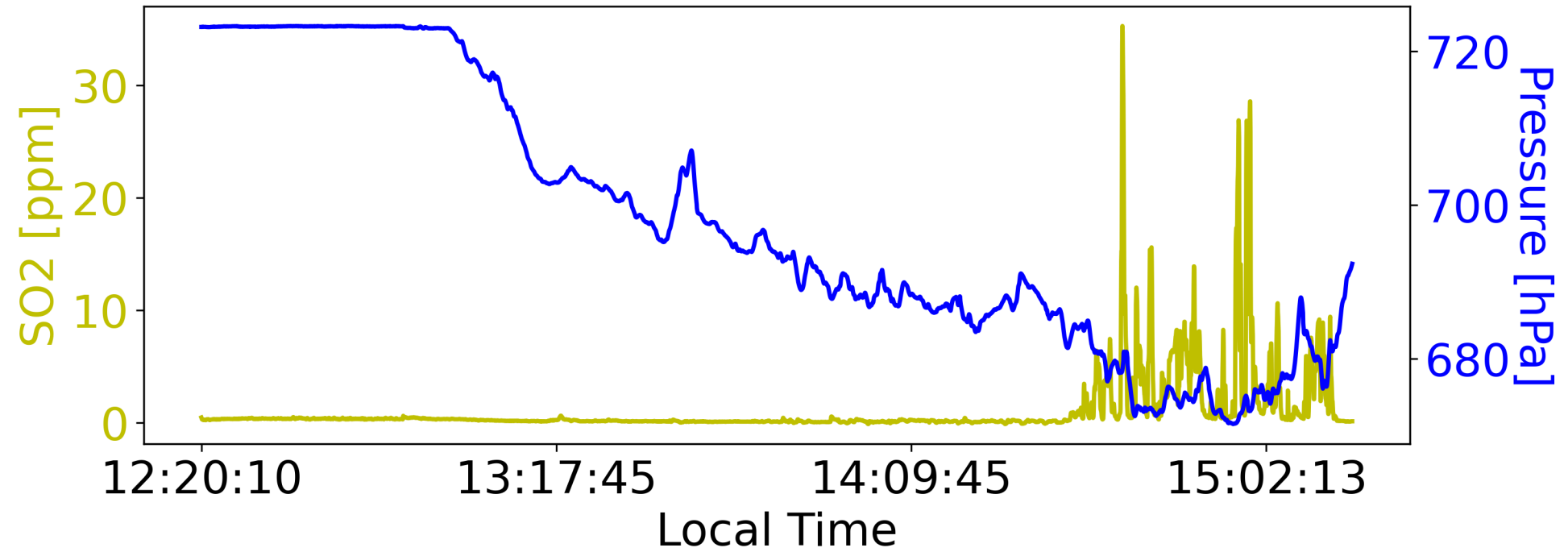
03-06-2025



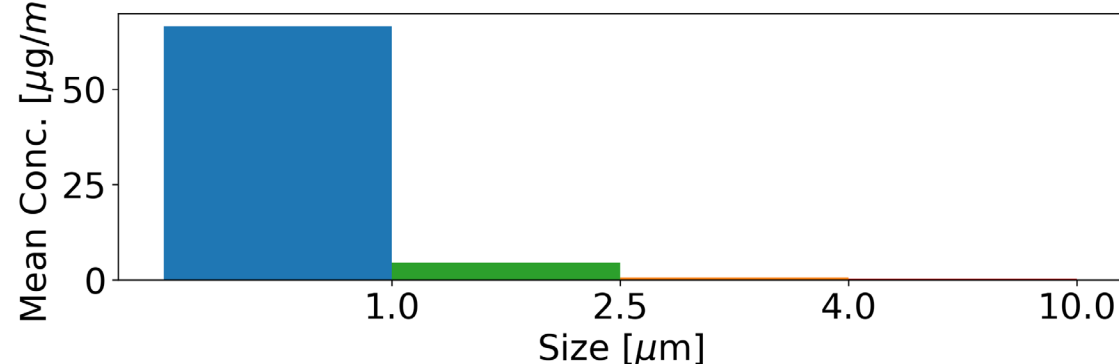
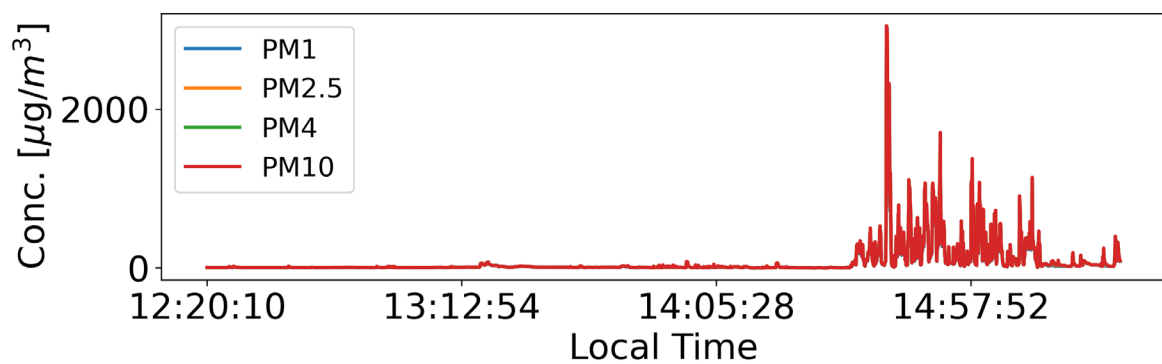
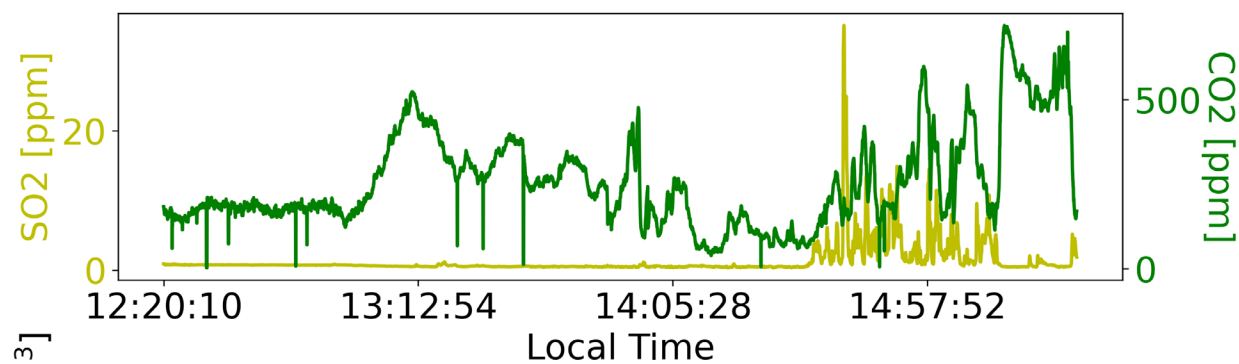
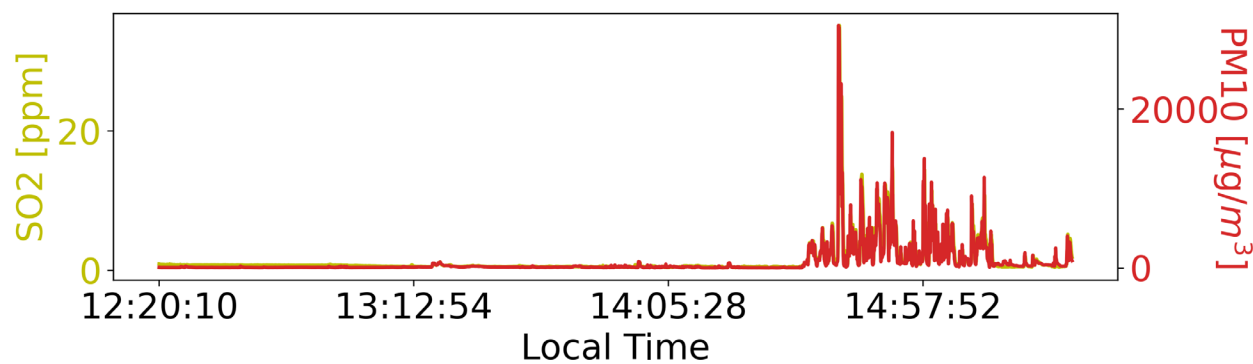
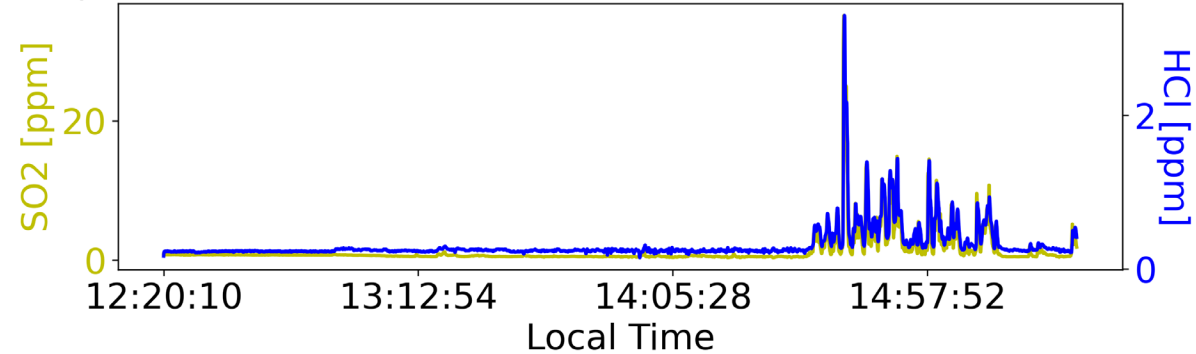
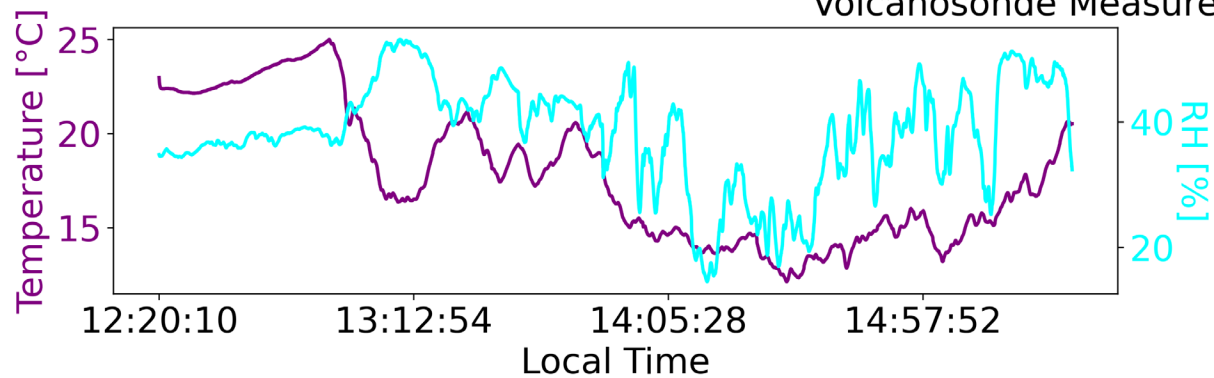
Volcanosonde Measurements | 5D - 03/06/2025



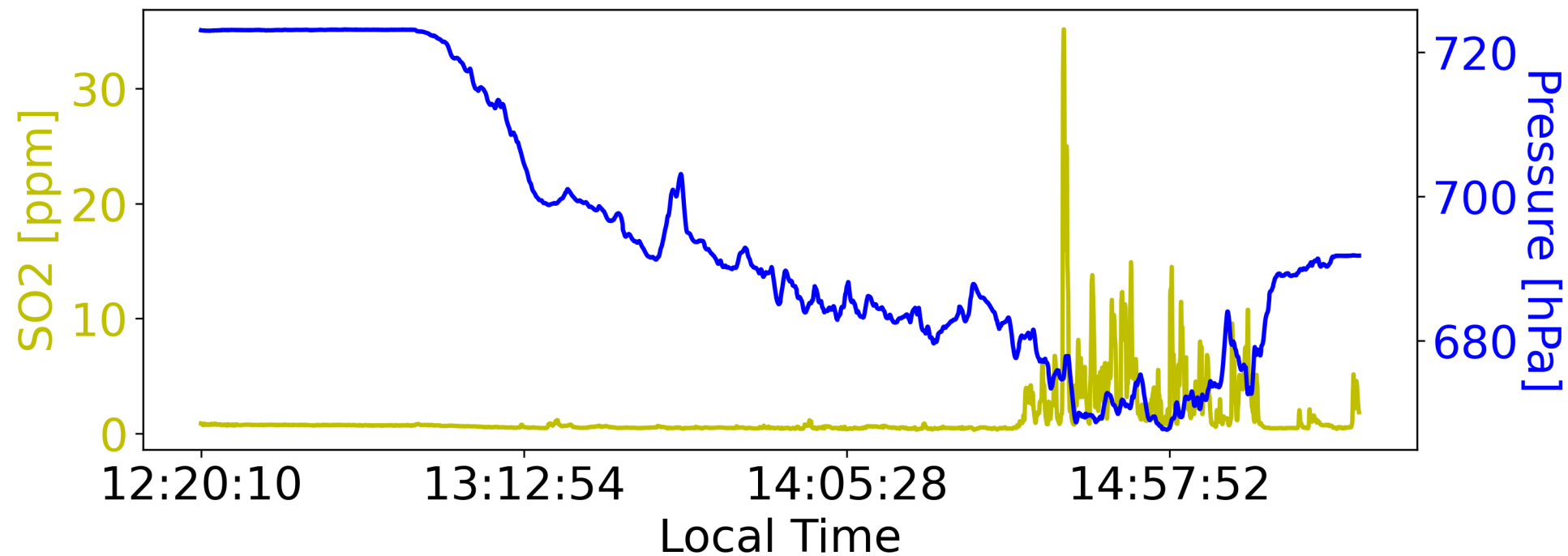
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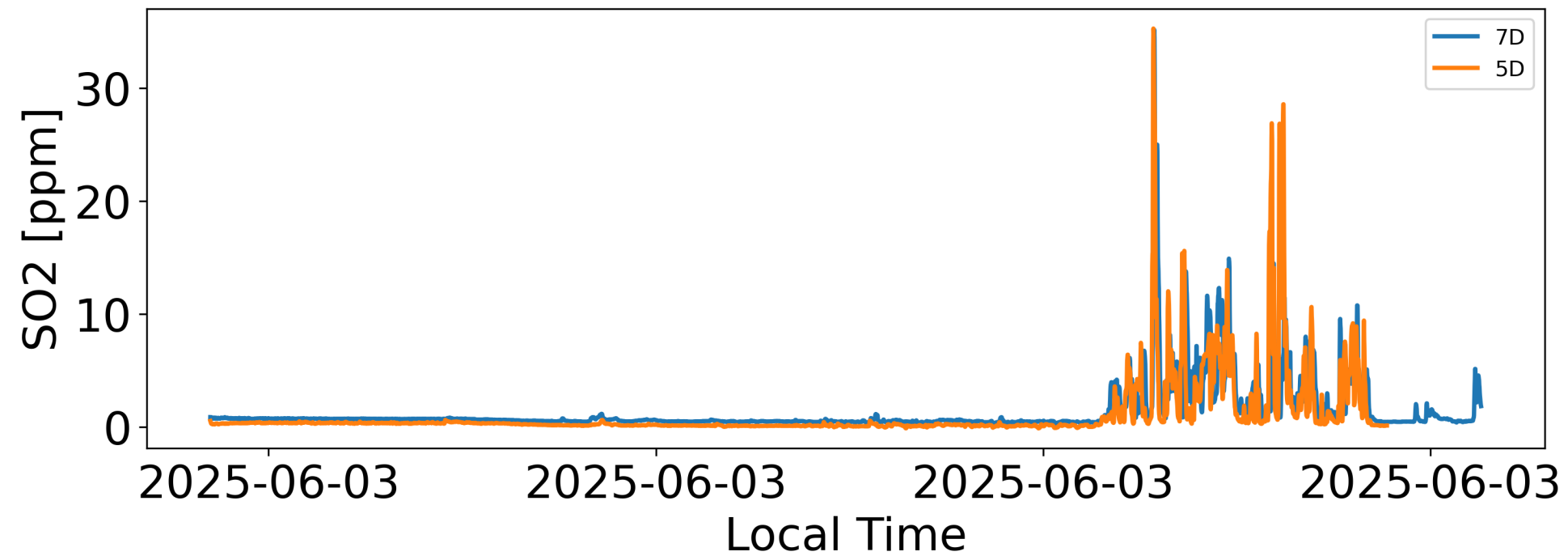
Volcanosonde Measurements | 7D - 03/06/2025



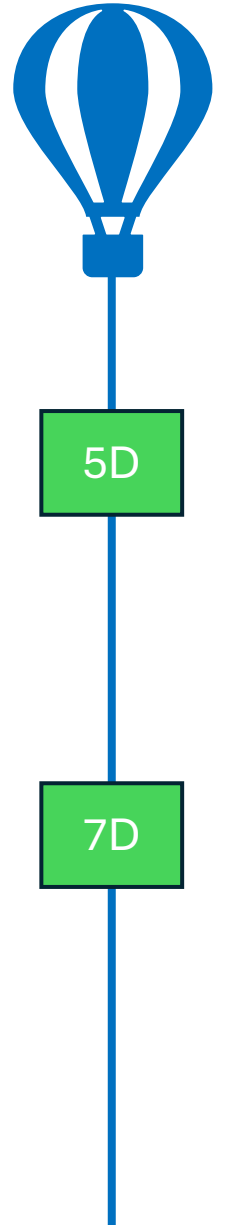
Volcanosonde Measurements | 7D - 03/06/2025



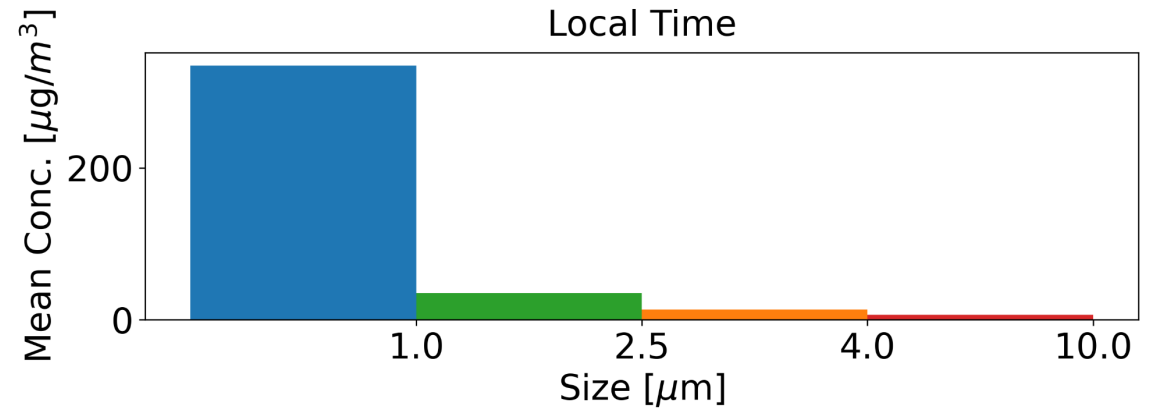
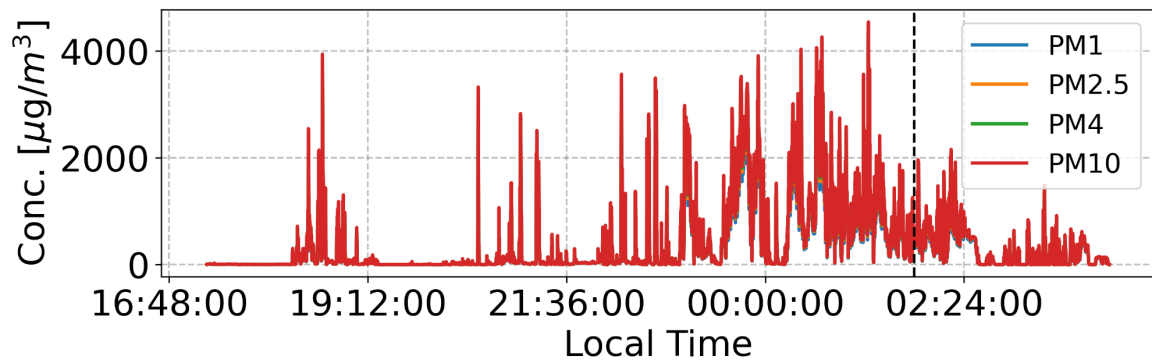
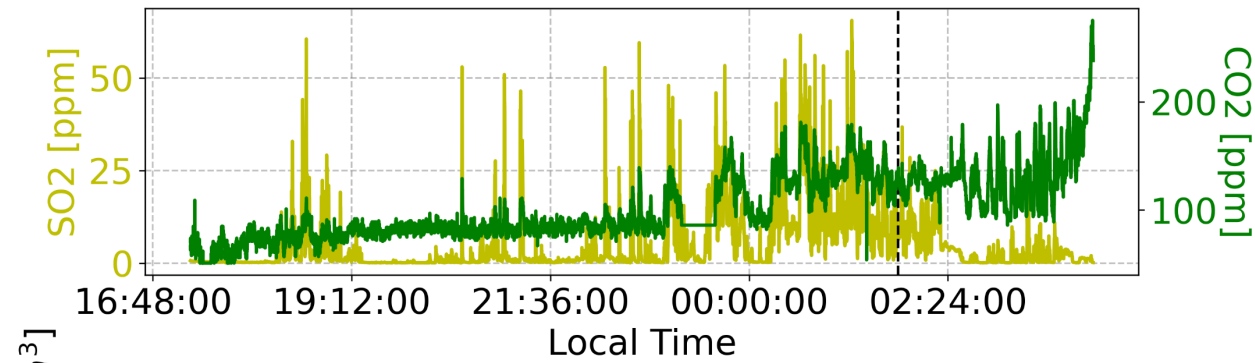
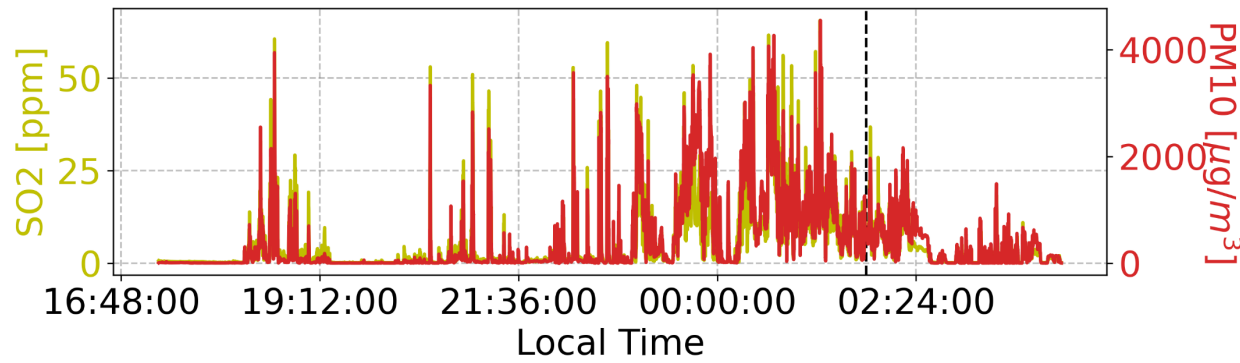
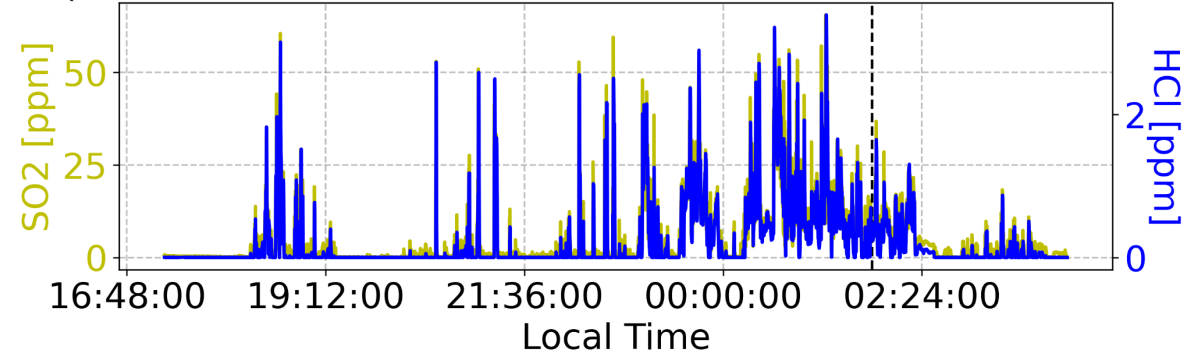
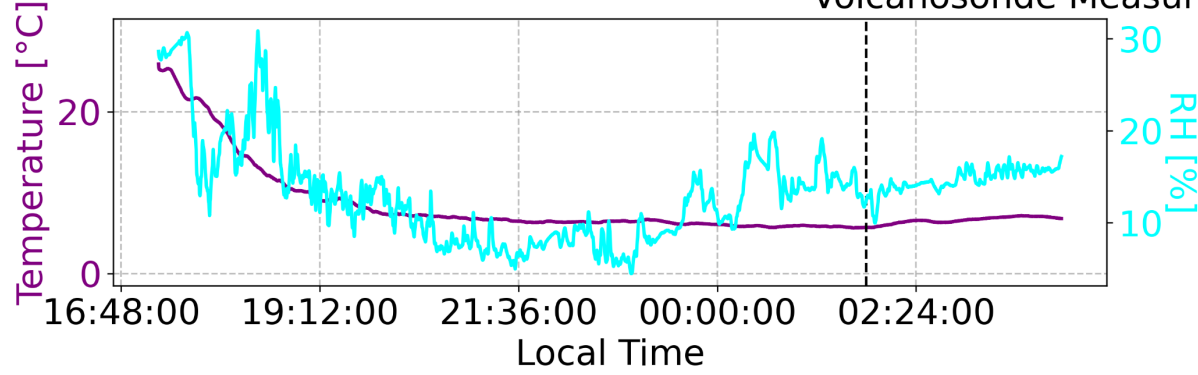
Volcanosonde Measurements | 5D and 7D - 03/06/2025



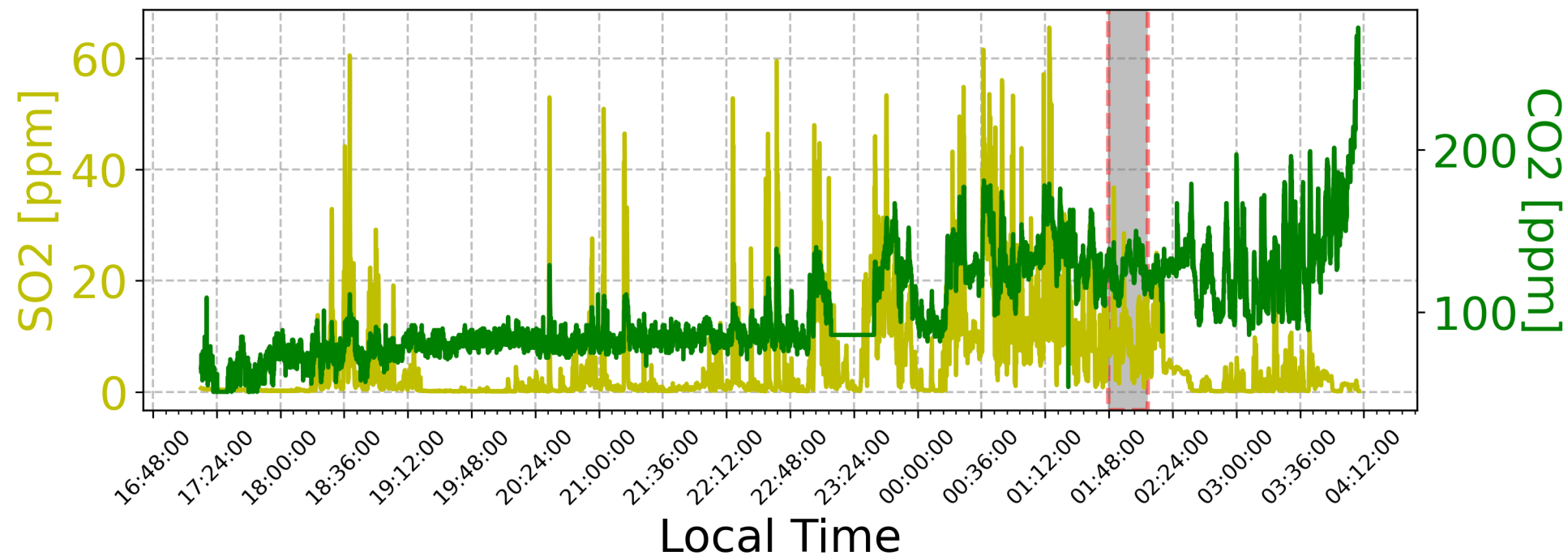
04-06-2025



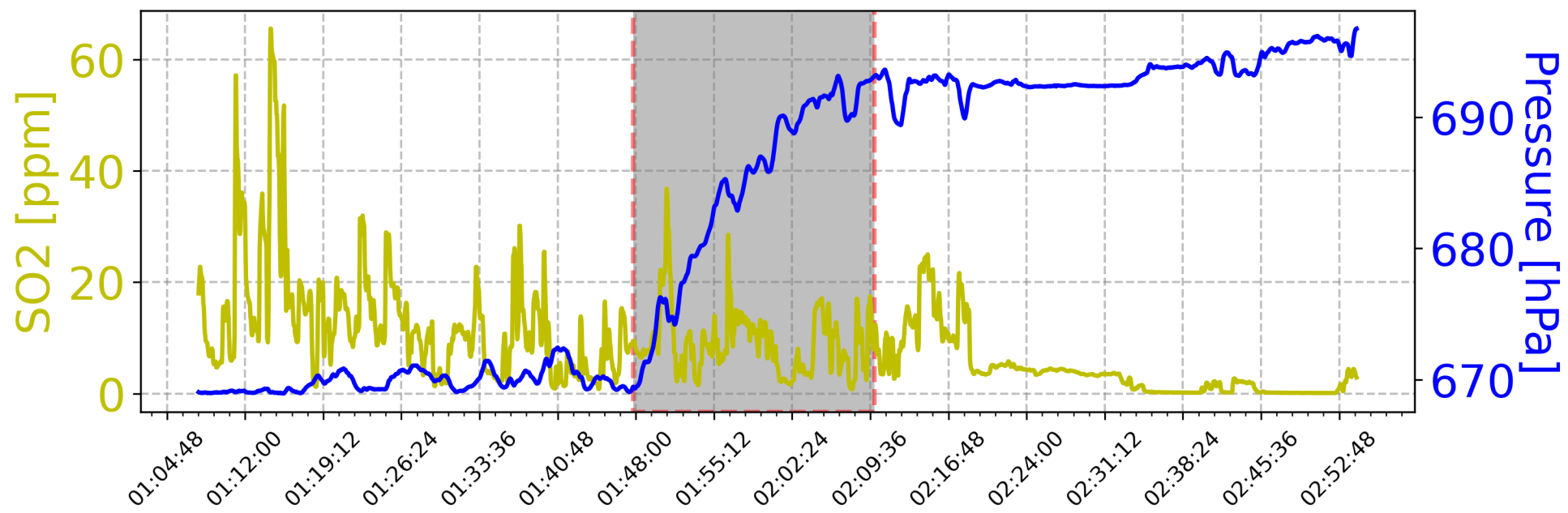
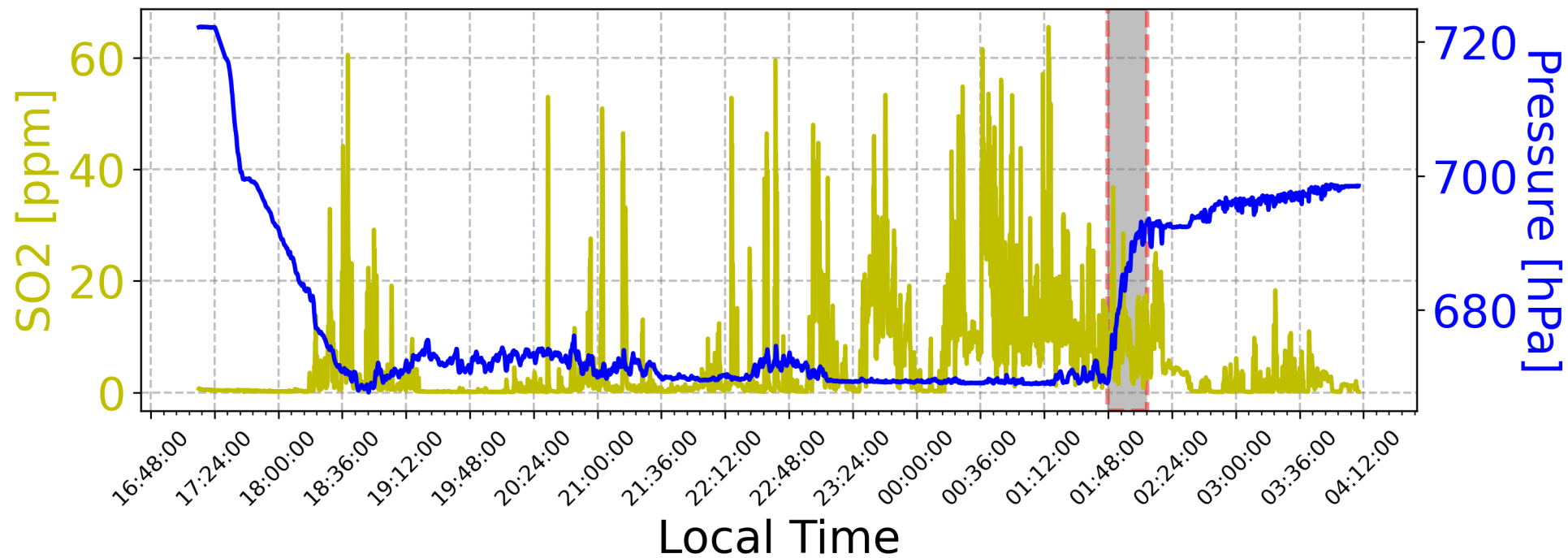
Volcanosonde Measurements | 5D - 04/06/2025



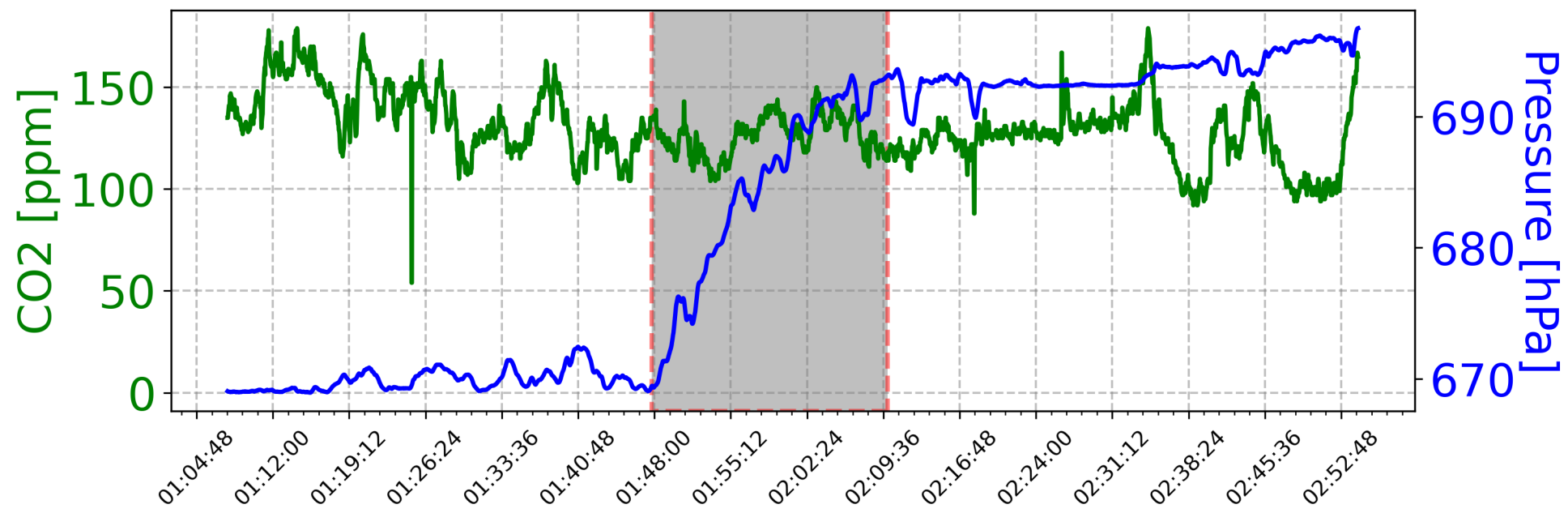
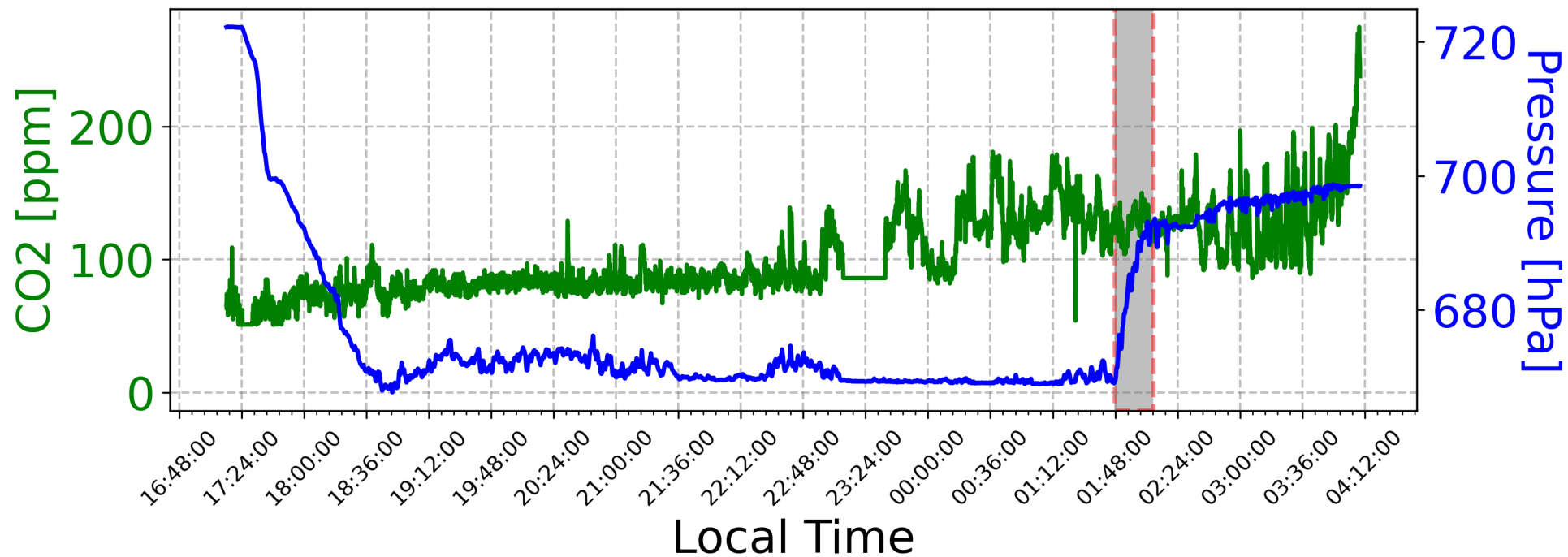
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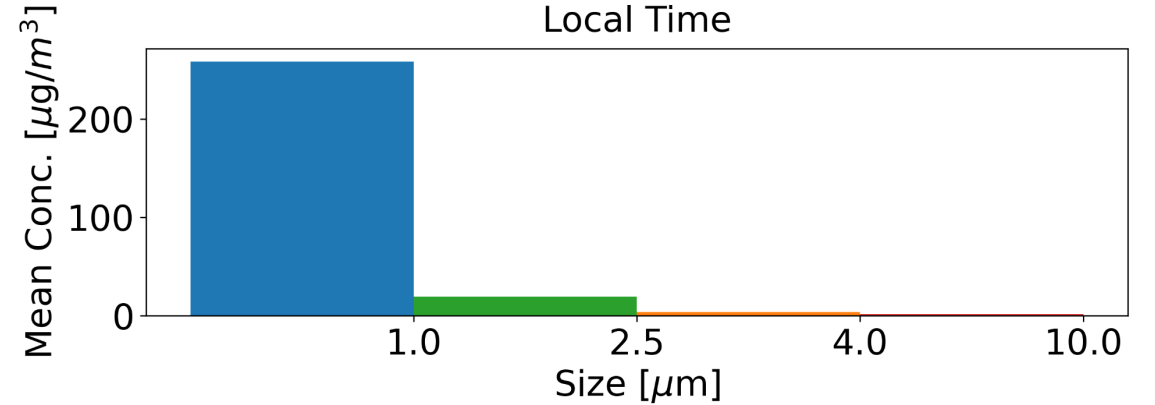
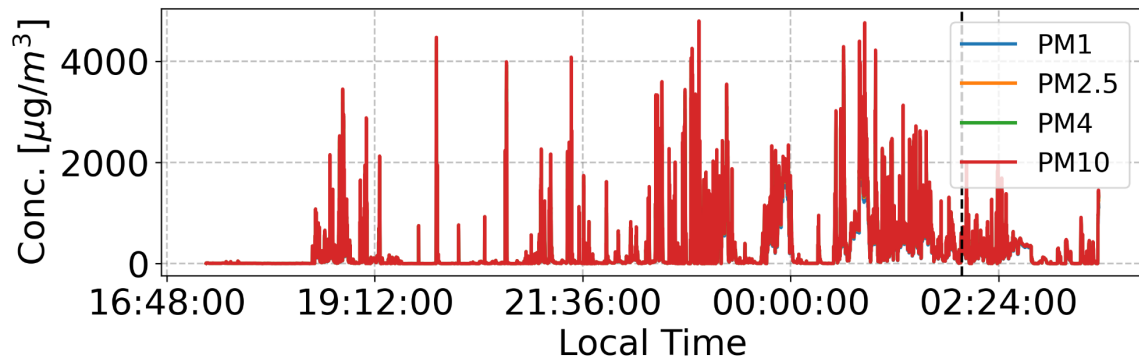
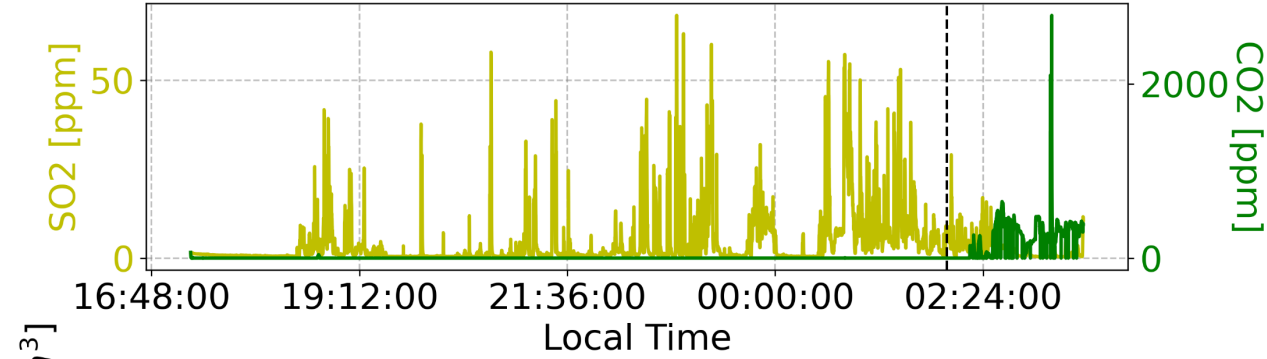
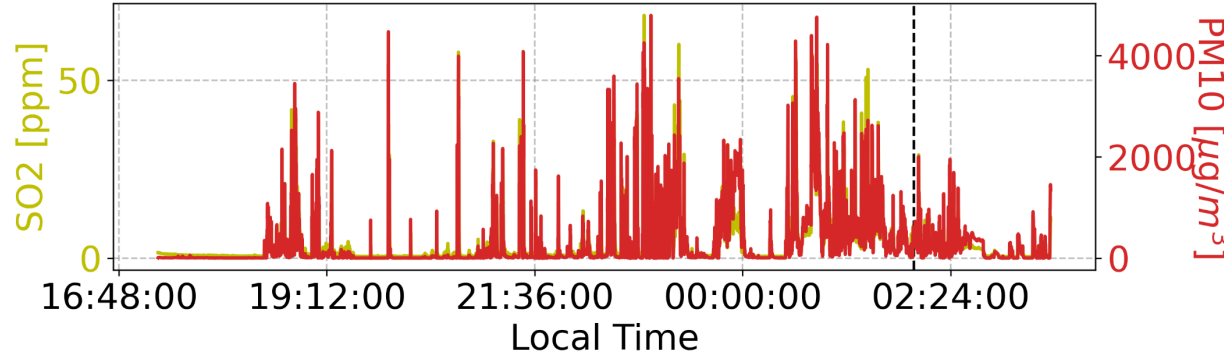
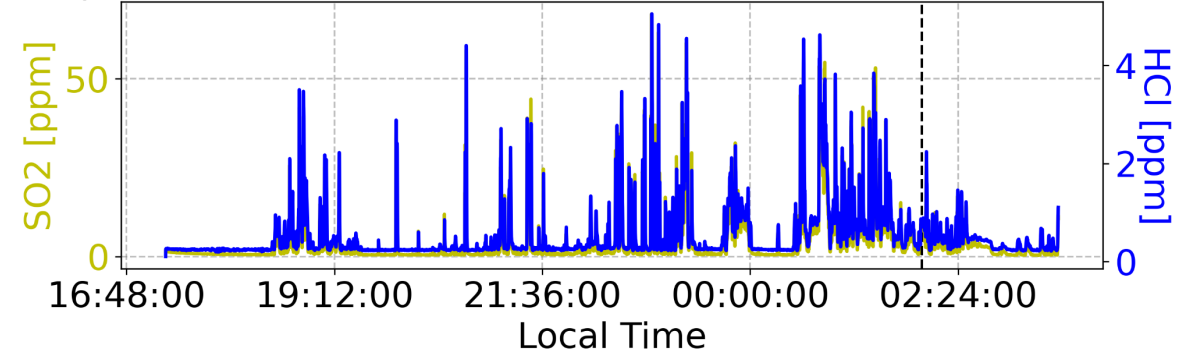
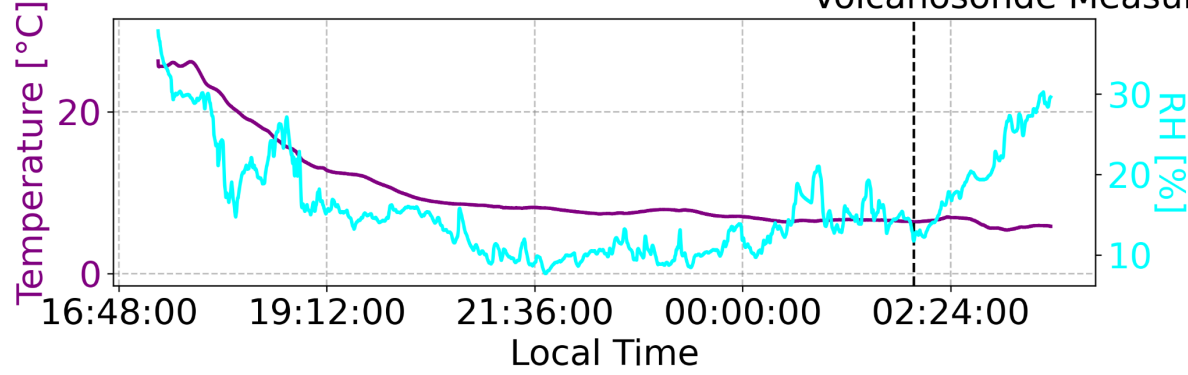
Volcanosonde Measurements | 5D - 04/06/2025



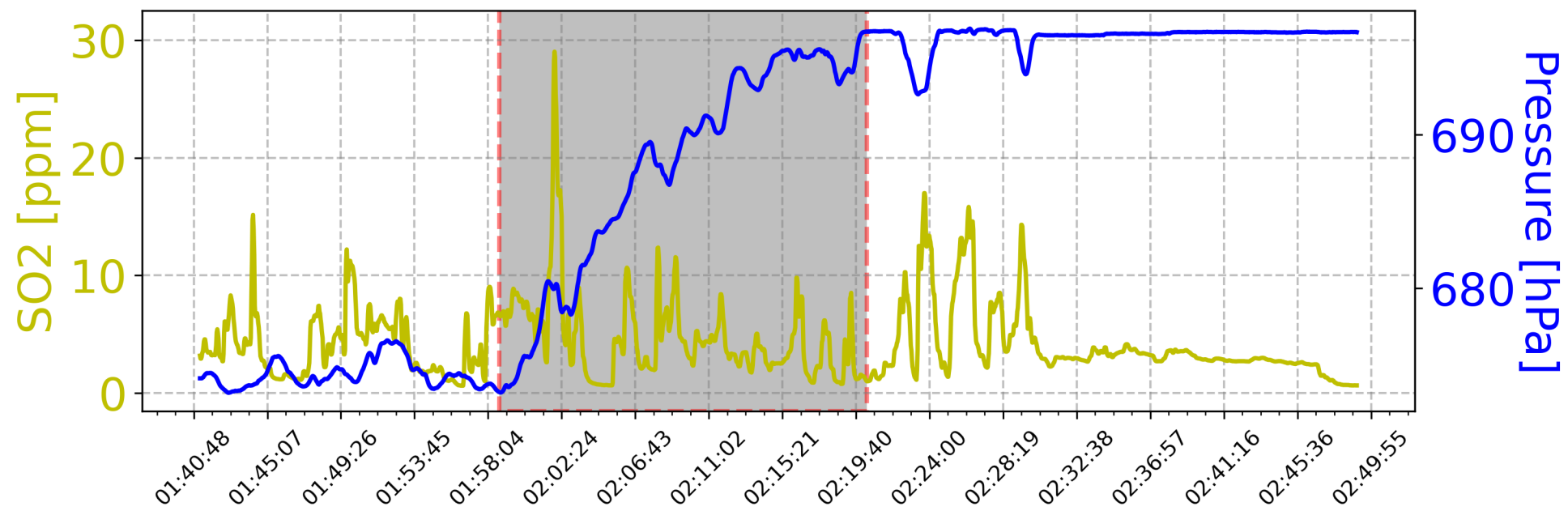
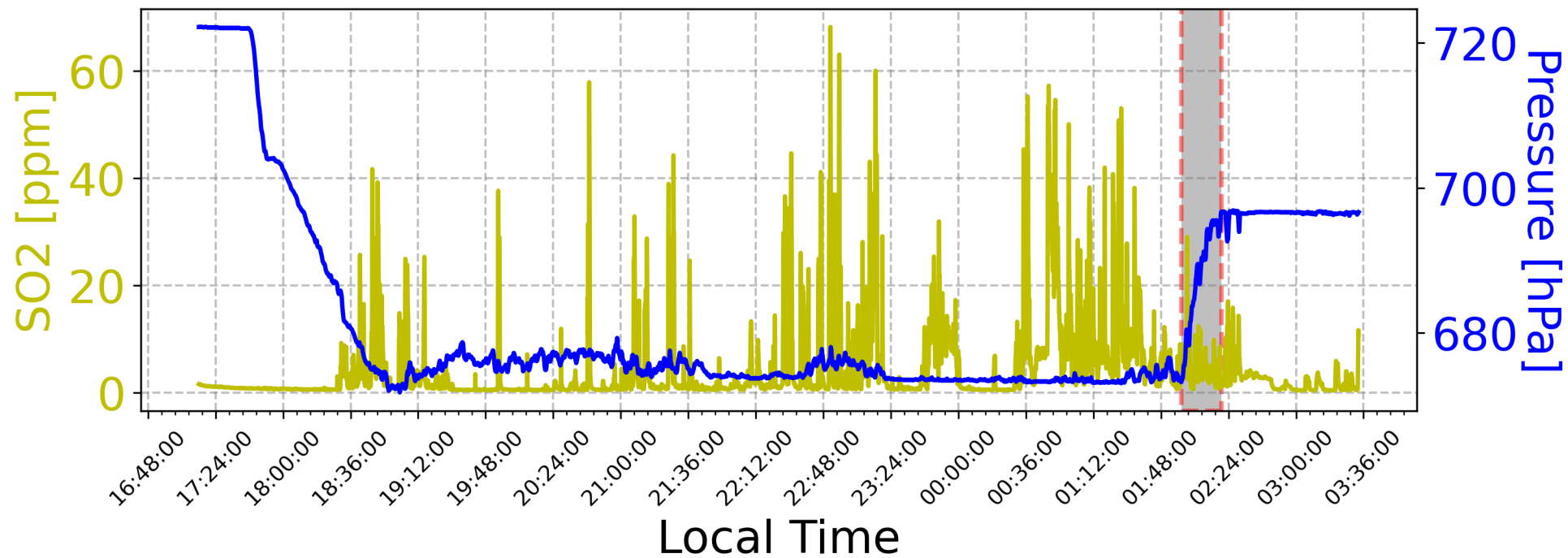
Volcanosonde Measurements | 5D - 04/06/2025



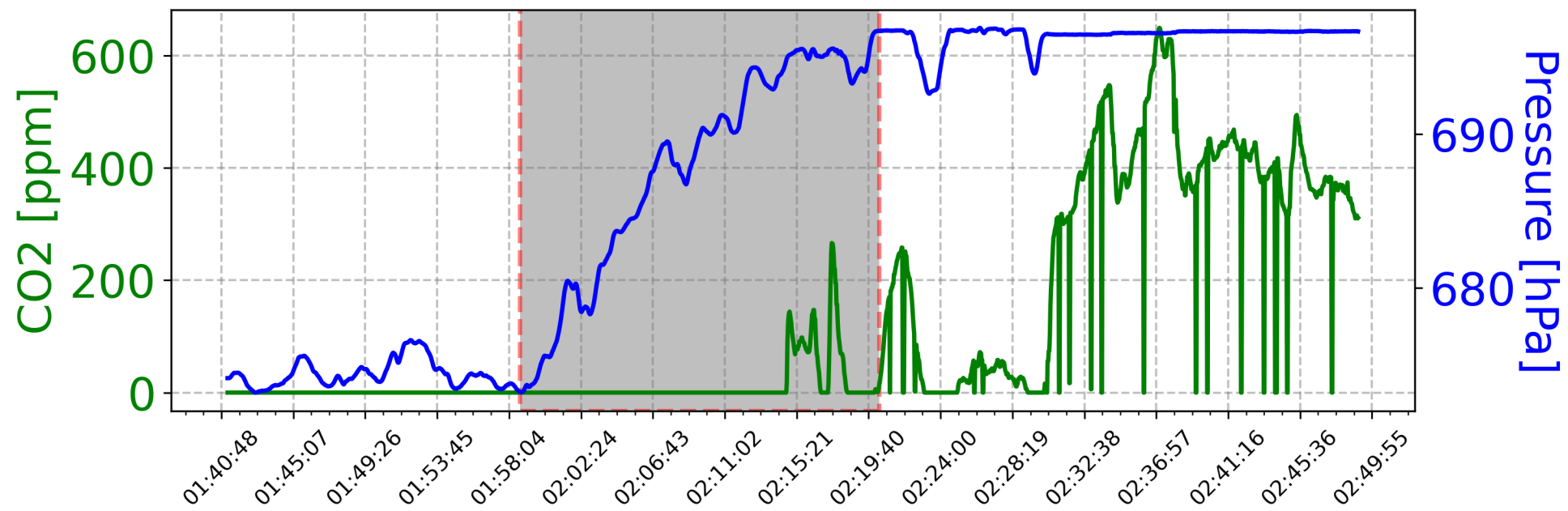
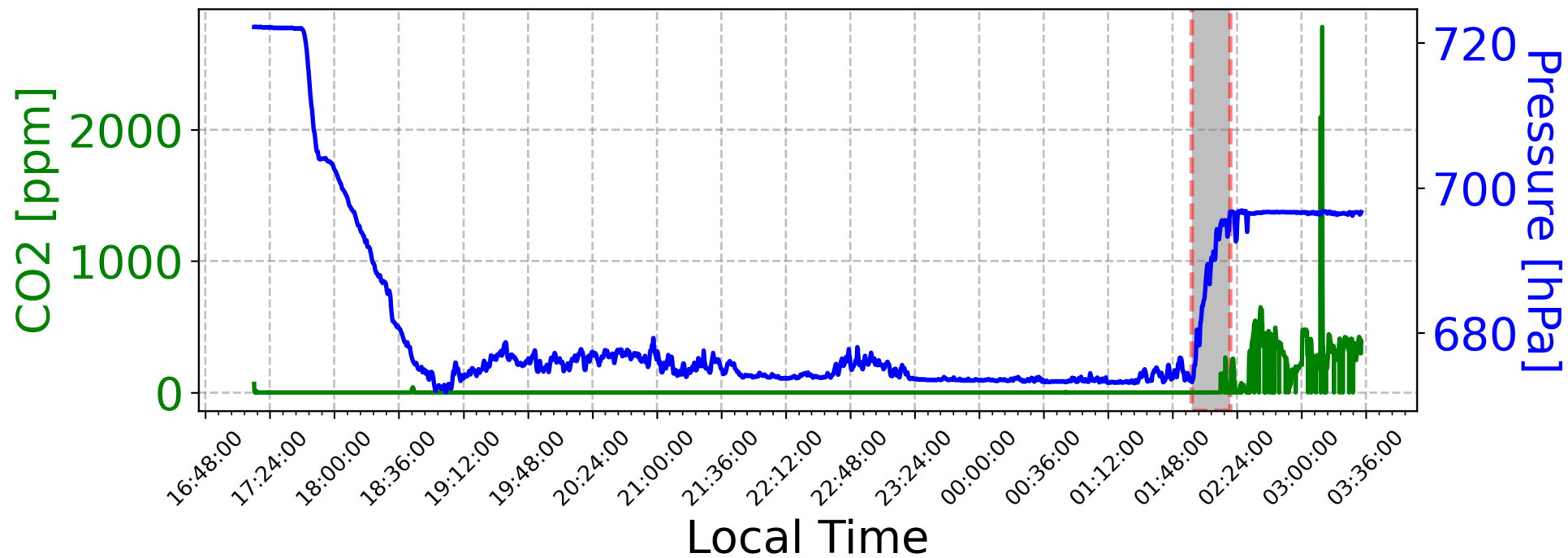
Volcanosonde Measurements | 7D - 04/06/2025



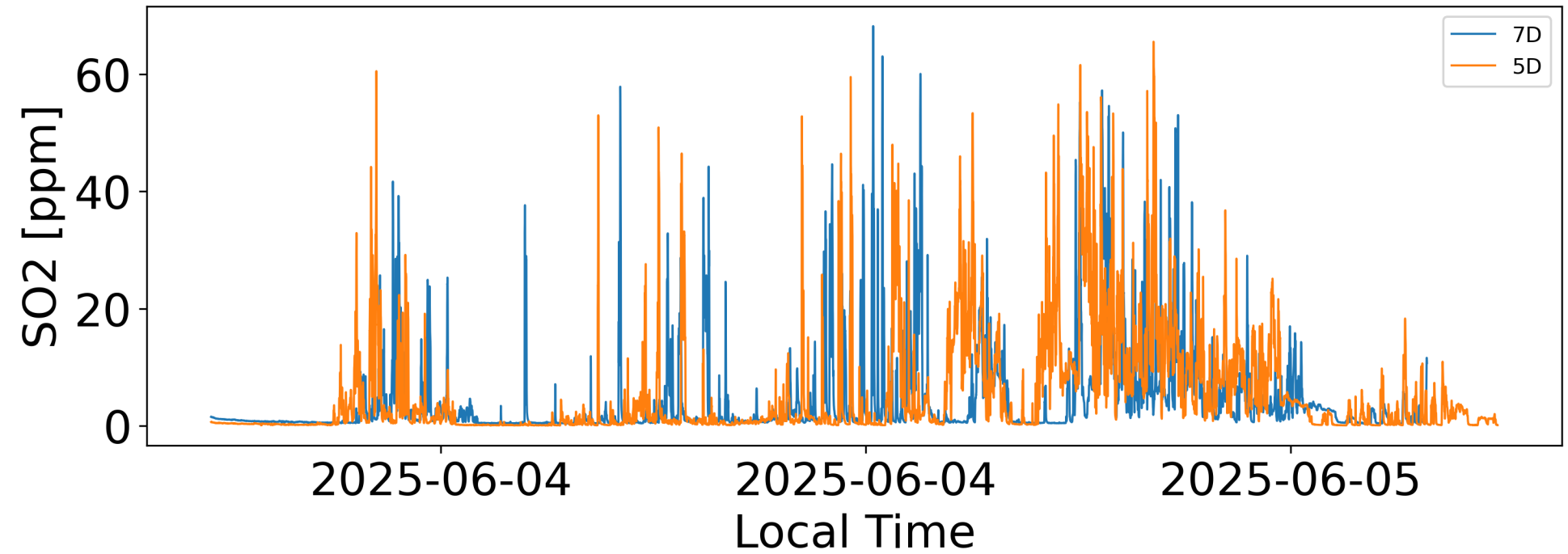
Volcanosonde Measurements | 7D - 04/06/2025



Volcanosonde Measurements | 7D - 04/06/2025



Volcanosonde Measurements | 5D and 7D - 04/06/2025



04-06-2025

5D

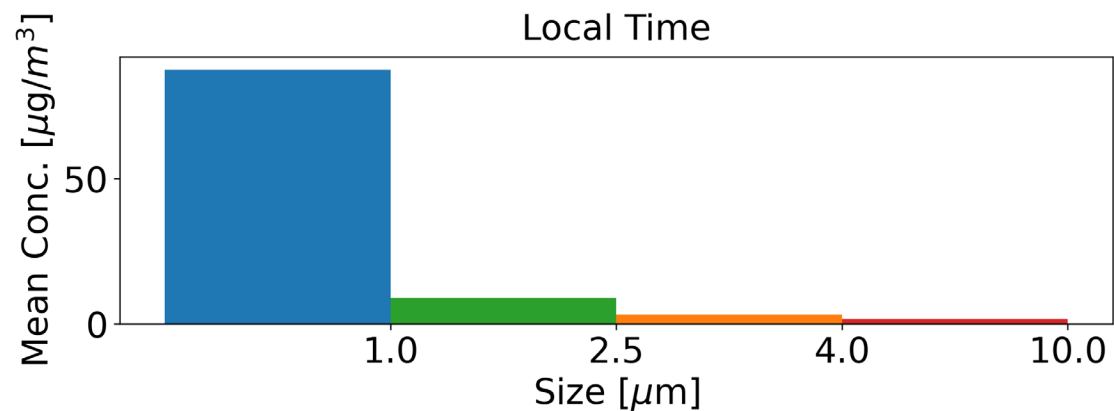
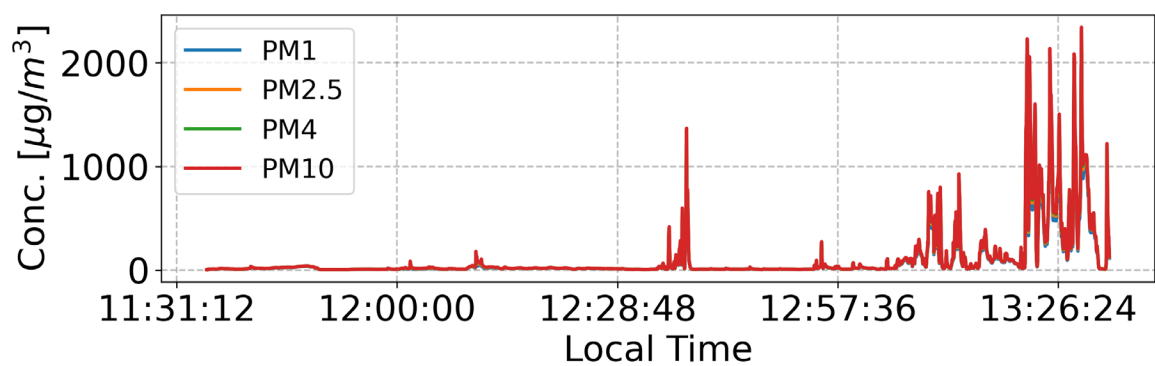
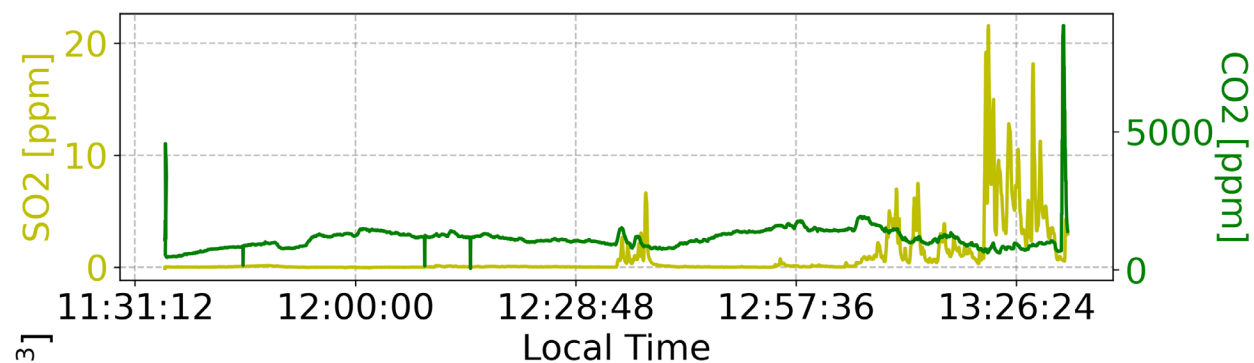
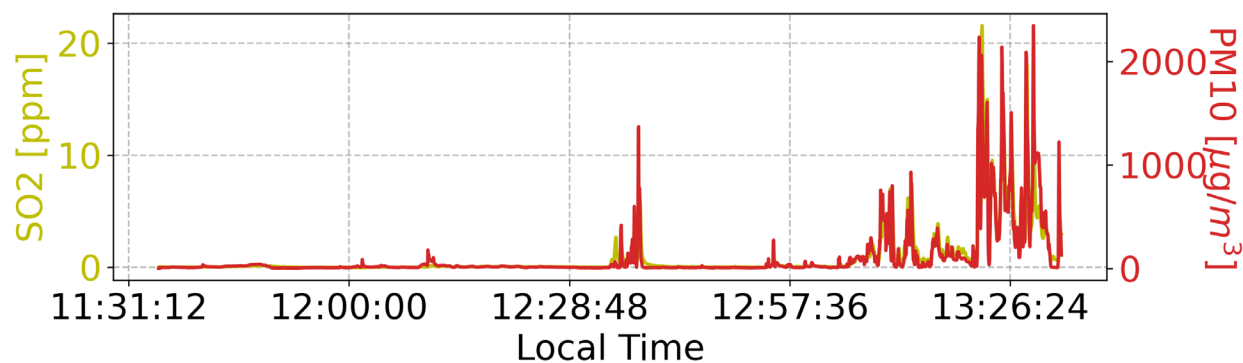
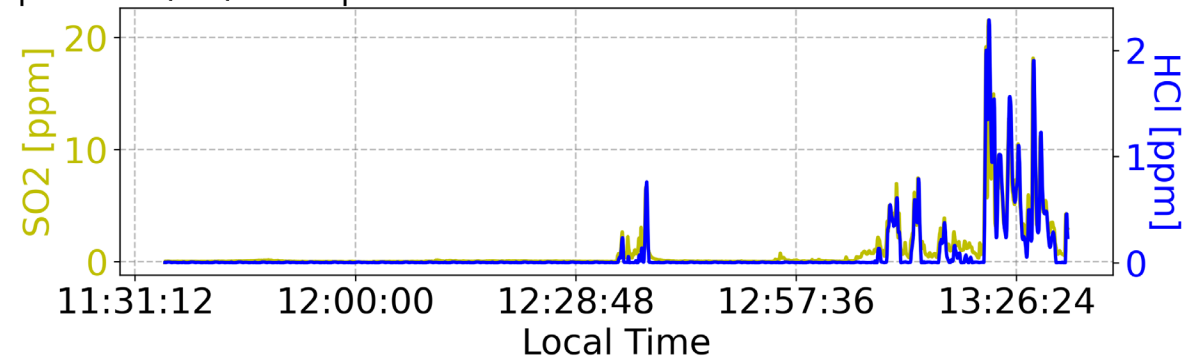
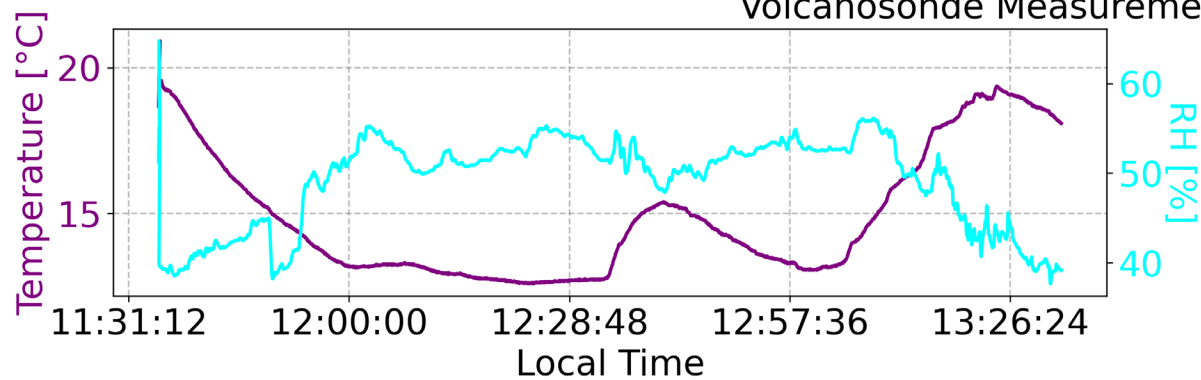
	Before the balloon drop	After the balloon drop
SO2 mean	4.39	2.87
CO2 mean	93.72	132.69
Correlation CO2-SO2	0.51	0.0

7D

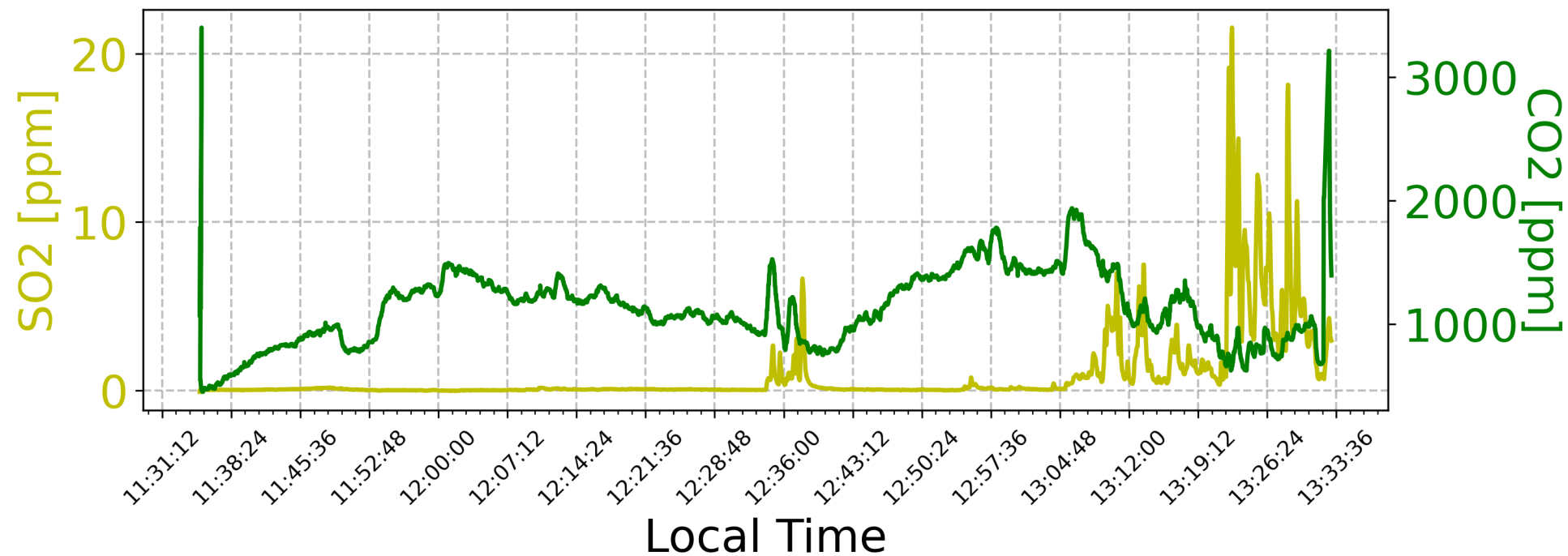
	Before the balloon drop	After the balloon drop
SO2 mean	3.54	2.40

Crater measurements
05-06-2025

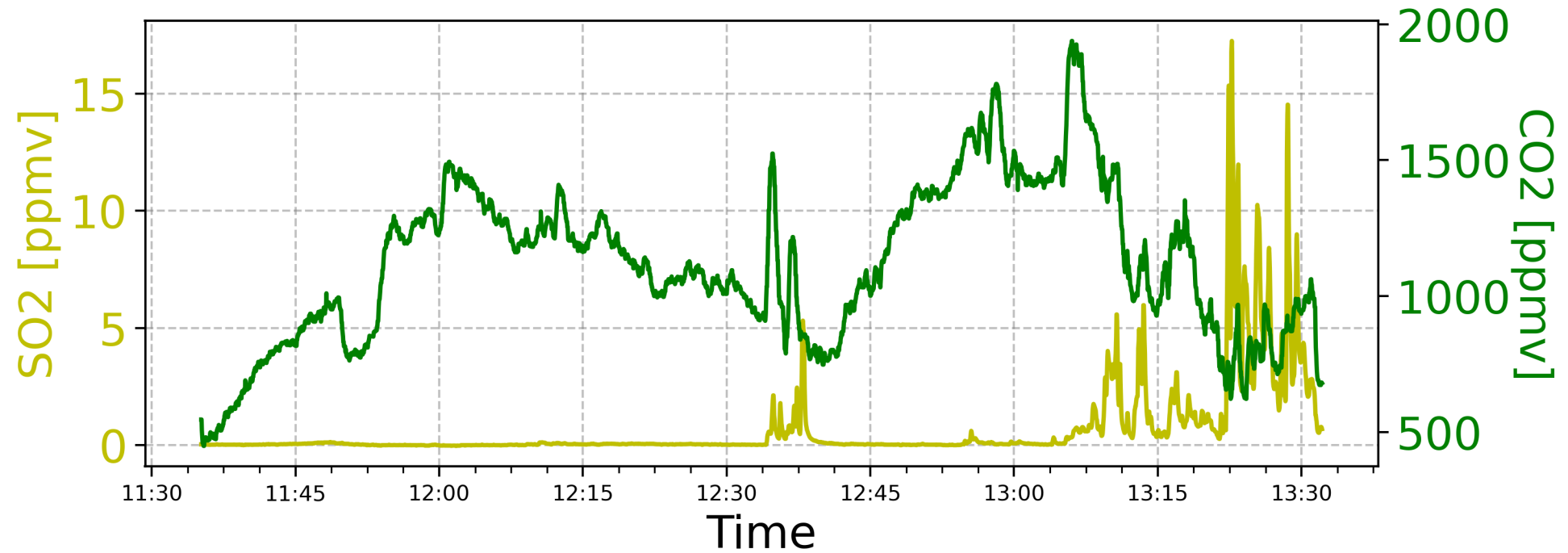
Volcanosonde Measurements | 1D - 05/06/2025 | Crater



Volcanosonde Measurements | 5D - 04/06/2025

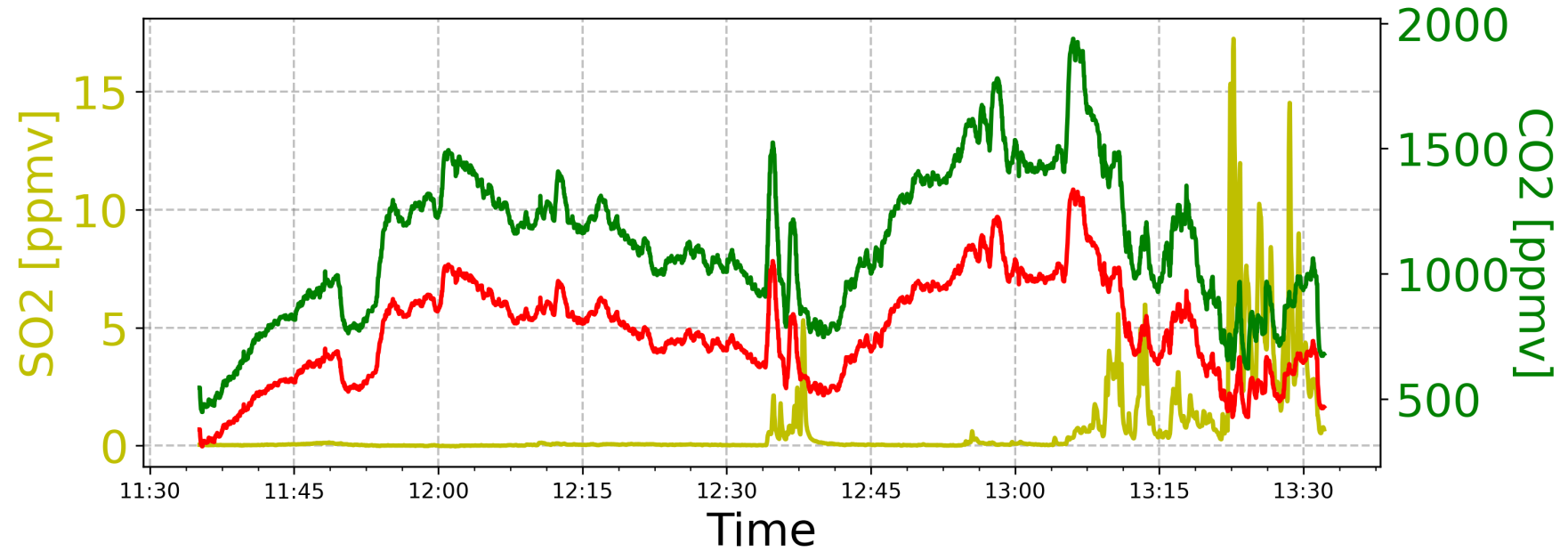


Volcanosonde Measurements | 1D - 05/06/2025 | Crater

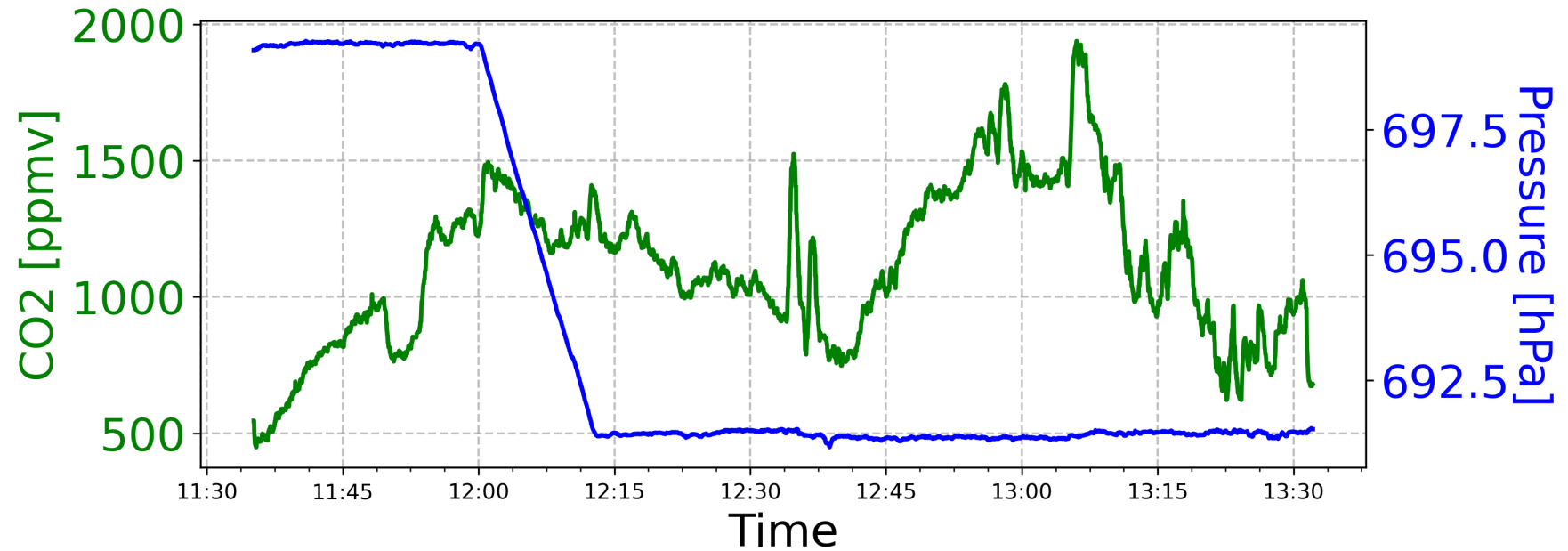


- SO2 data is calibrated.
- We must understand how the CO2 sensor was set.

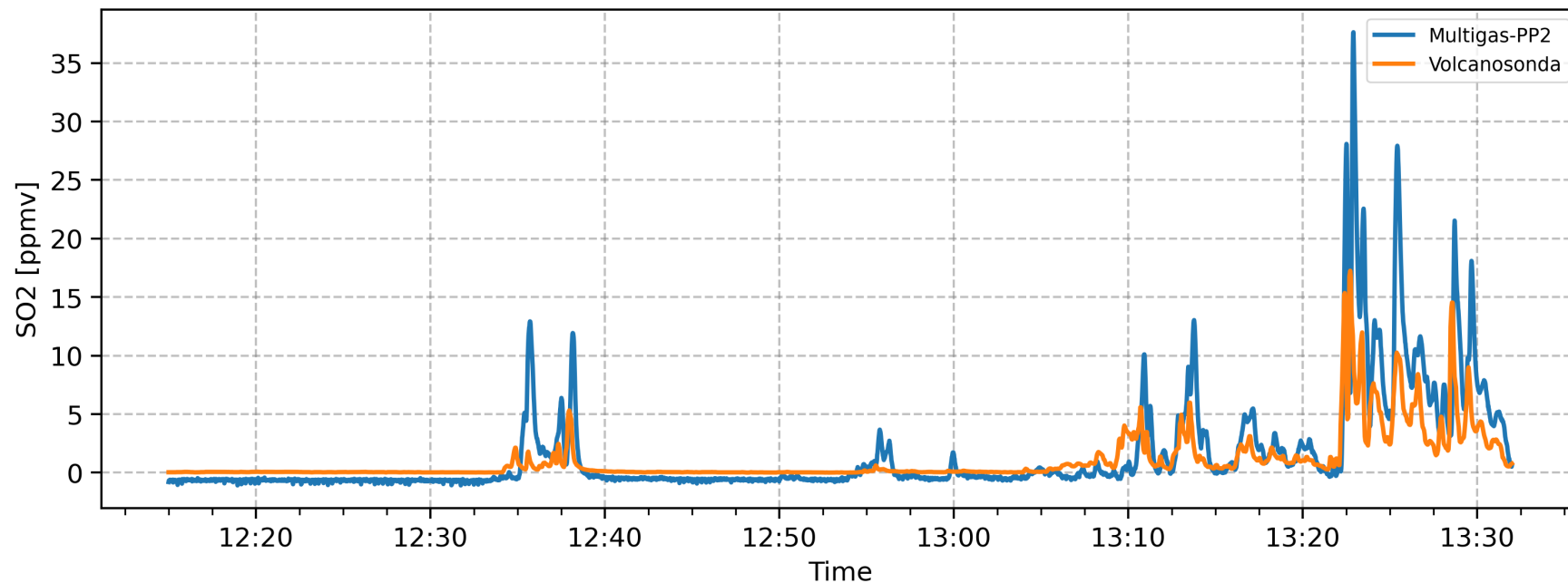
Volcanosonde Measurements | 1D - 05/06/2025 | Crater



Volcanosonde Measurements | 1D - 05/06/2025 | Crater

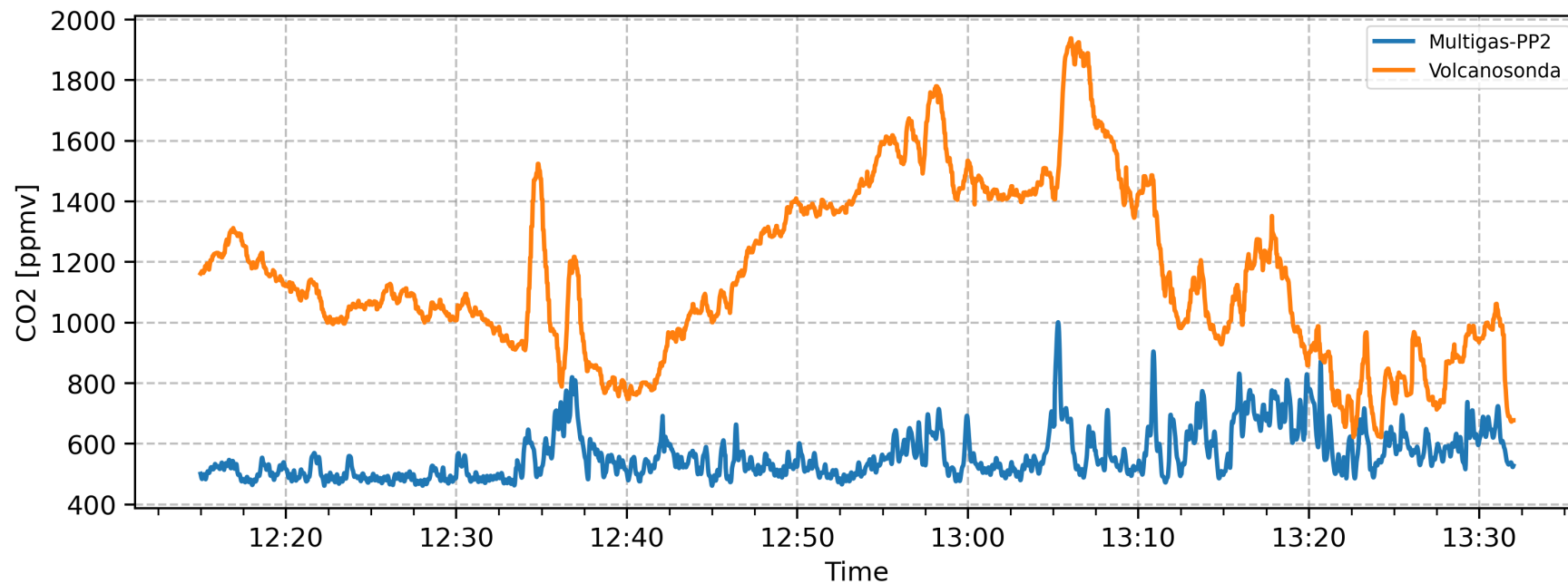


SO₂ Measurements Comparison | 05/06/2025 | Crater

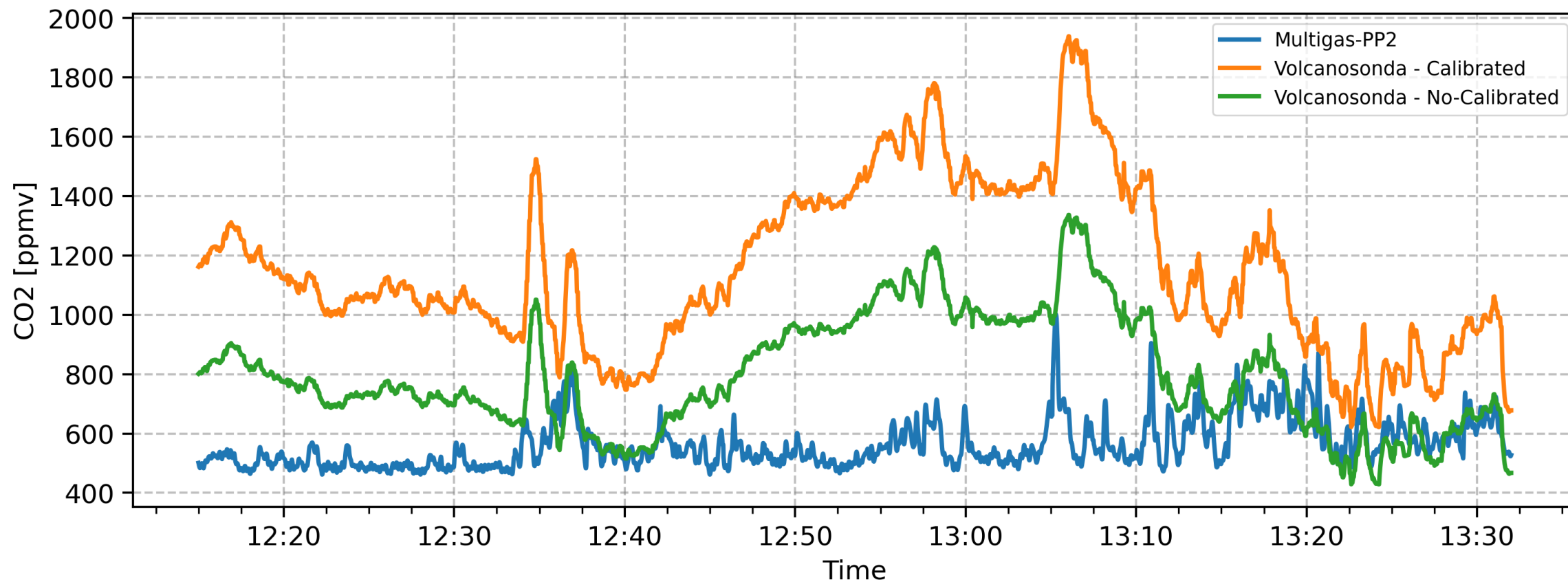


- Volcanosonda measurements comparison with Gaetano's multigas PP2,
- SO₂ data is good.
- The CO₂ measurements differ significantly. We must check how the Volcanosonda's CO₂ sensor was set.

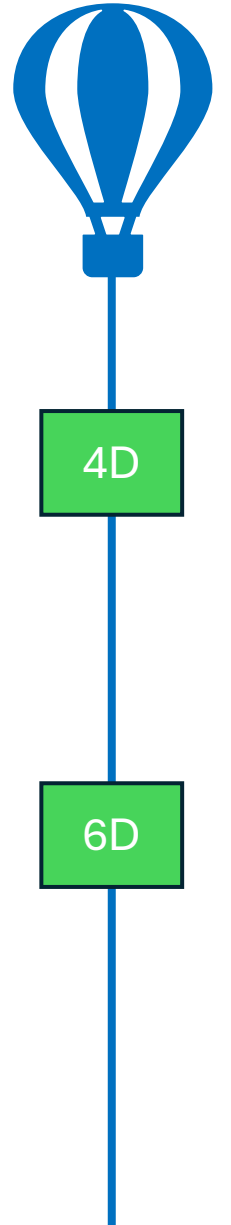
CO₂ Measurements Comparison | 05/06/2025 | Crater



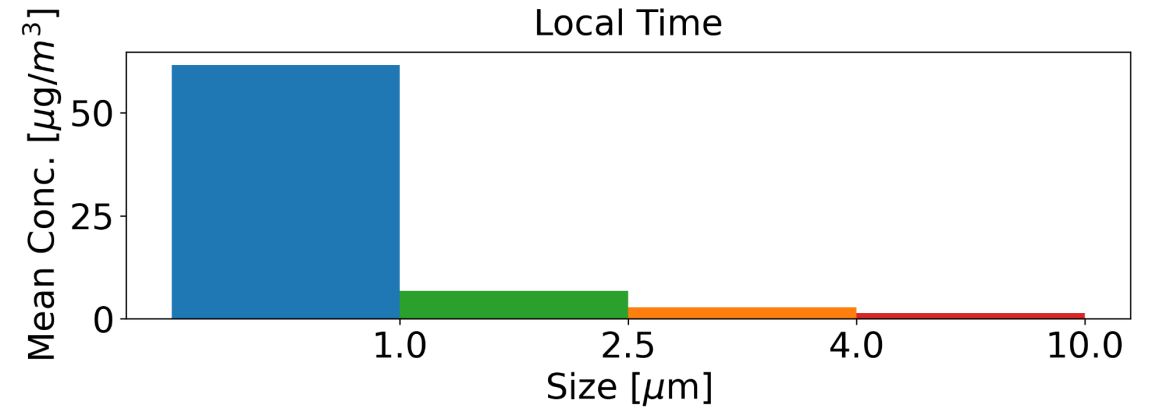
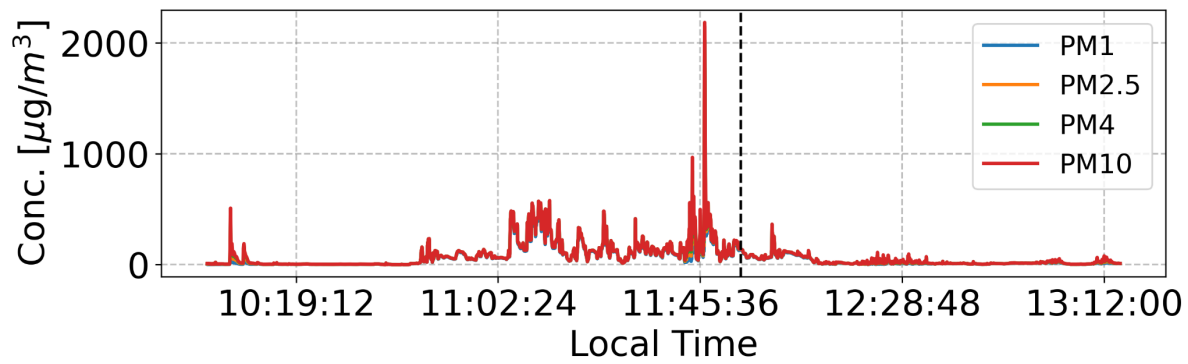
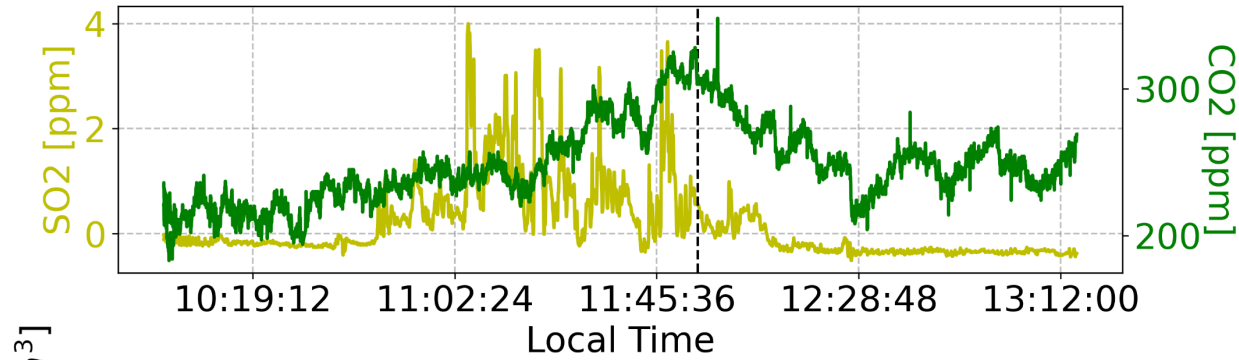
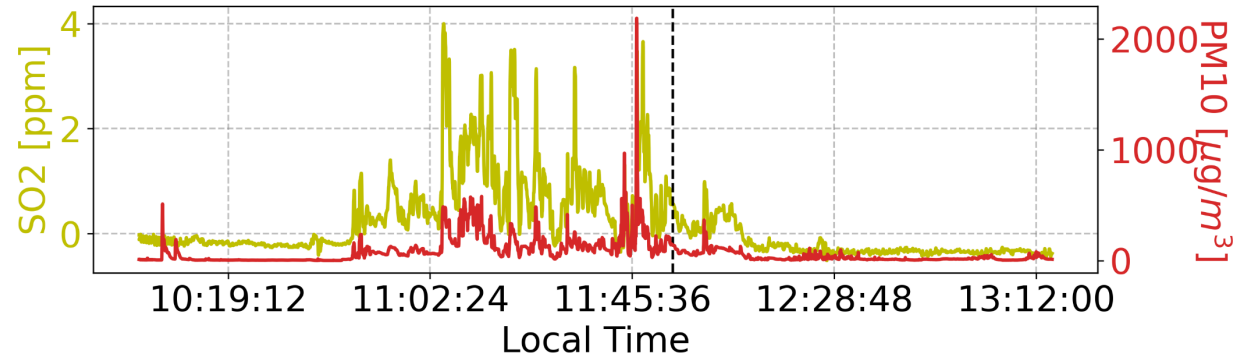
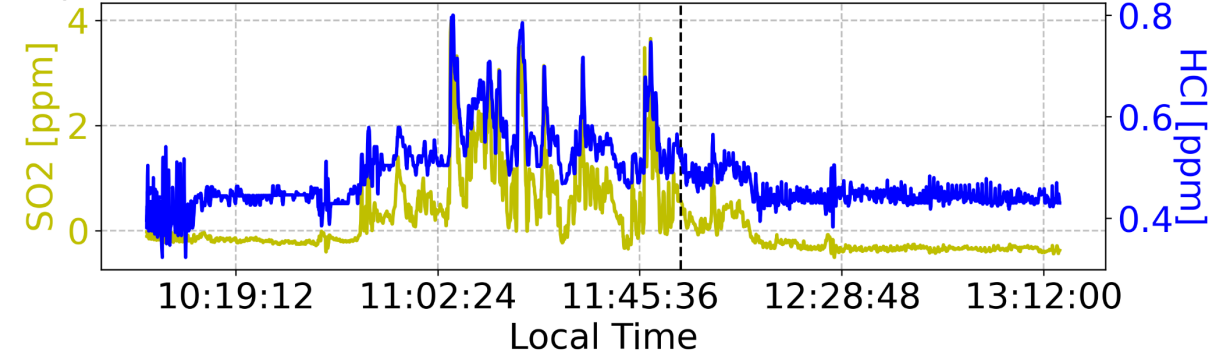
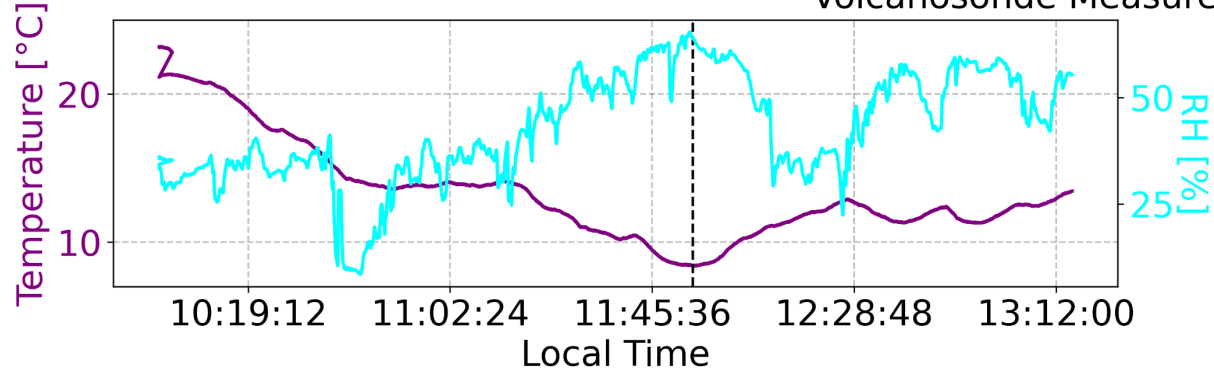
CO₂ Measurements Comparison | 05/06/2025 | Crater



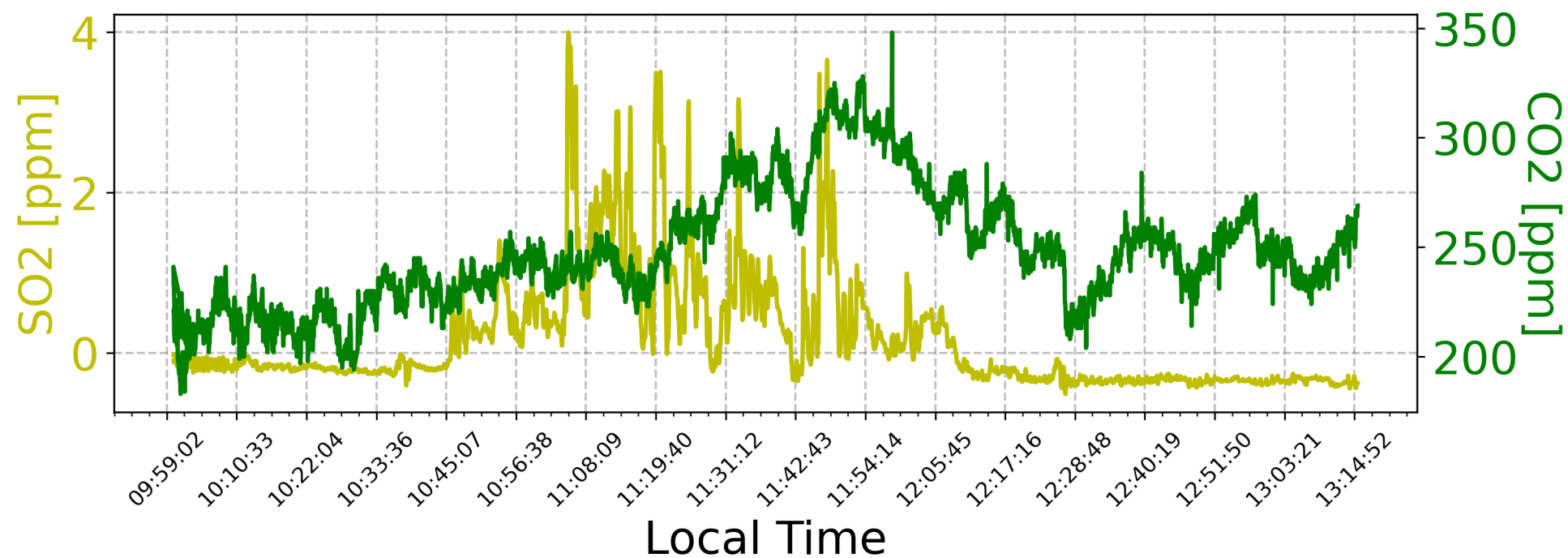
05-06-2025



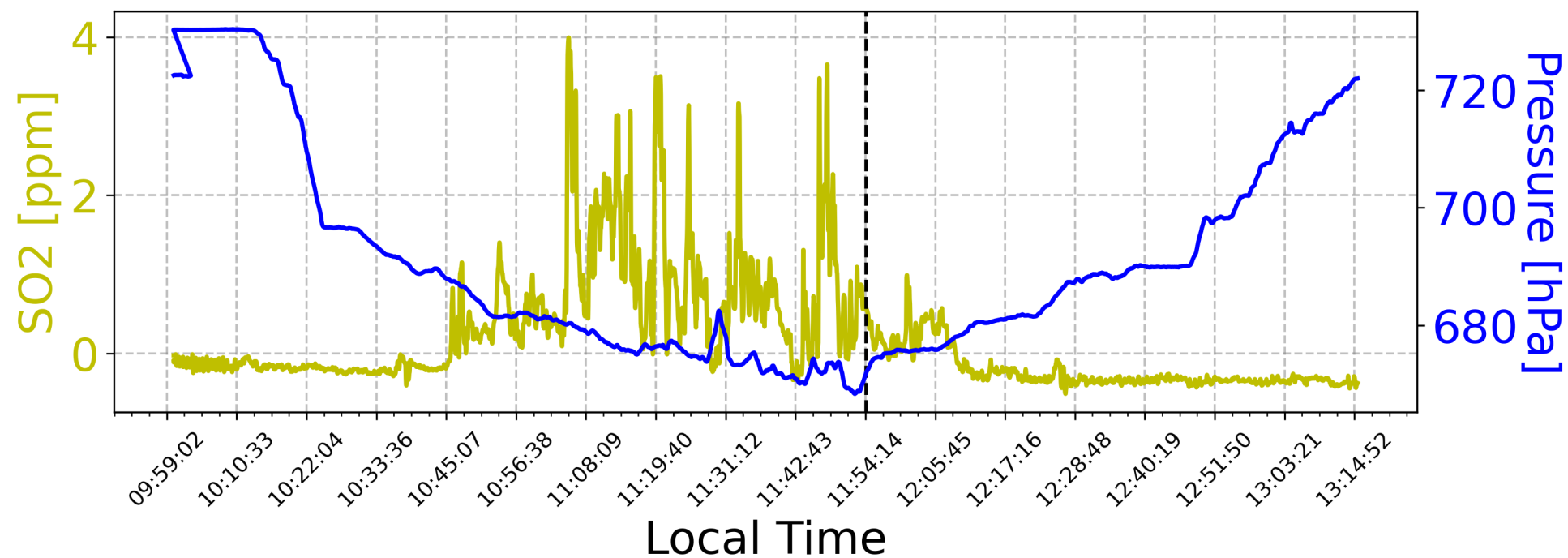
Volcanosonde Measurements | 4D - 05/06/2025



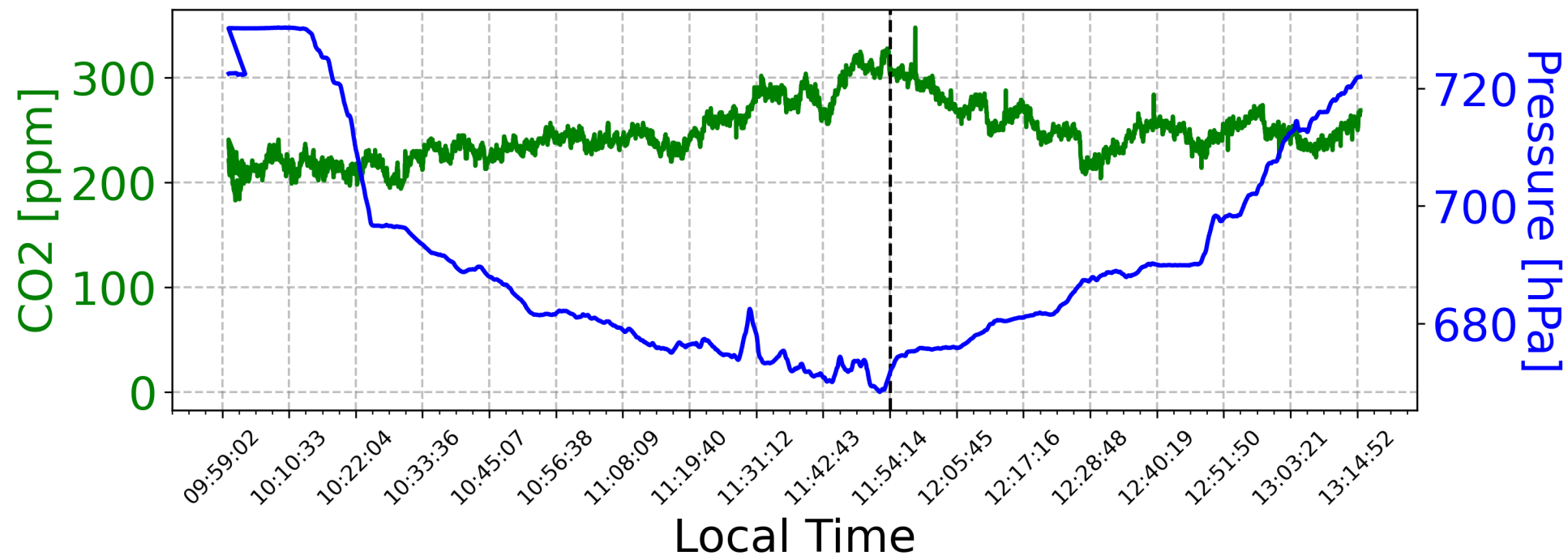
Volcanosonde Measurements | 4D - 05/06/2025



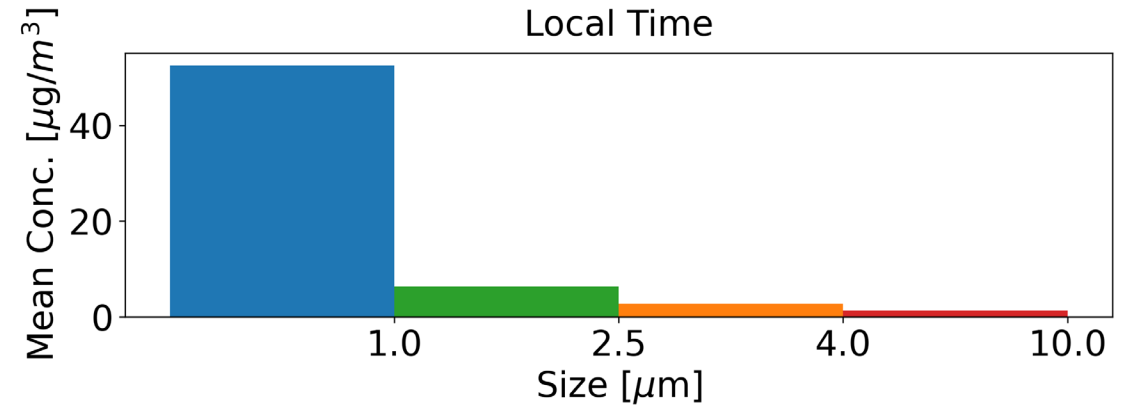
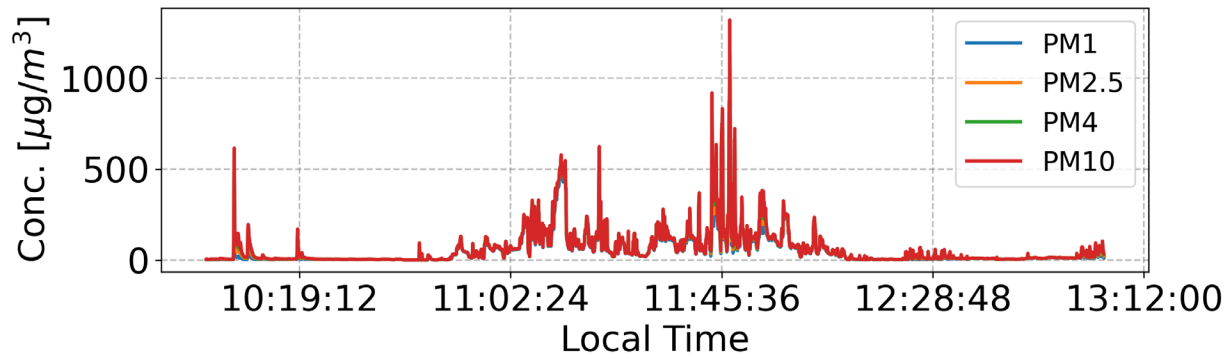
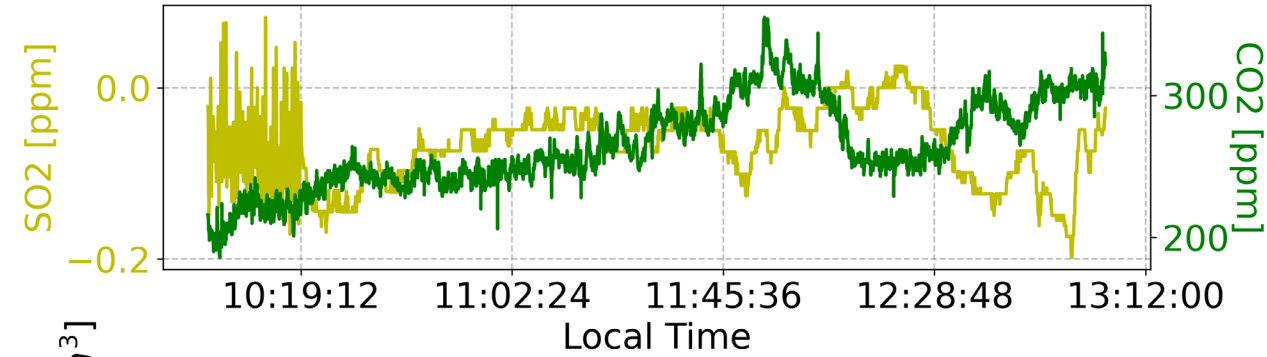
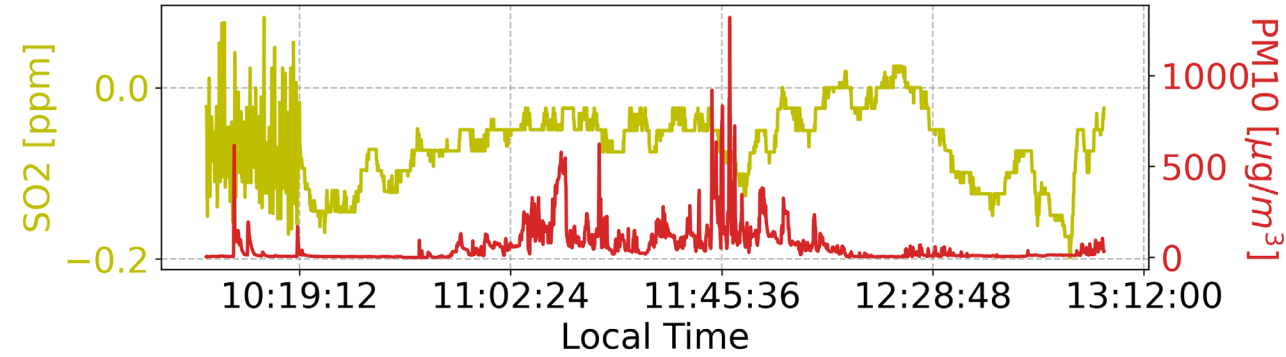
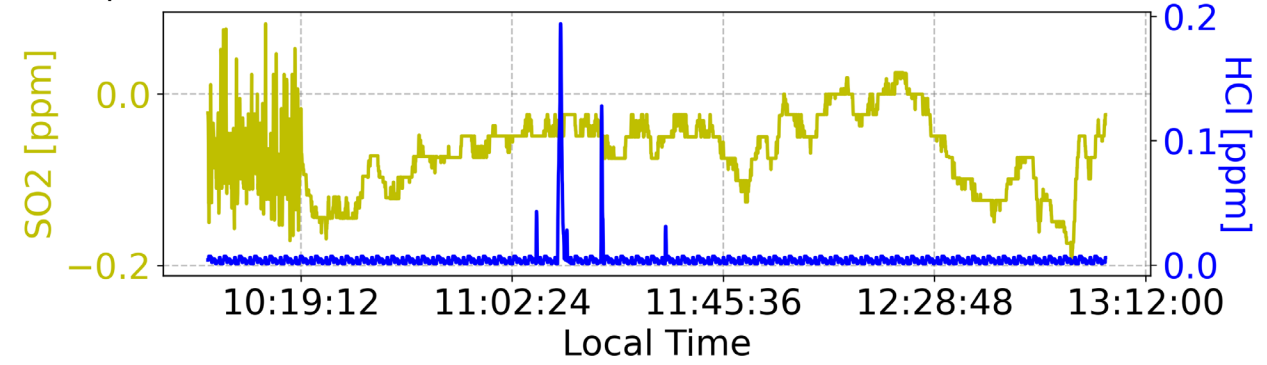
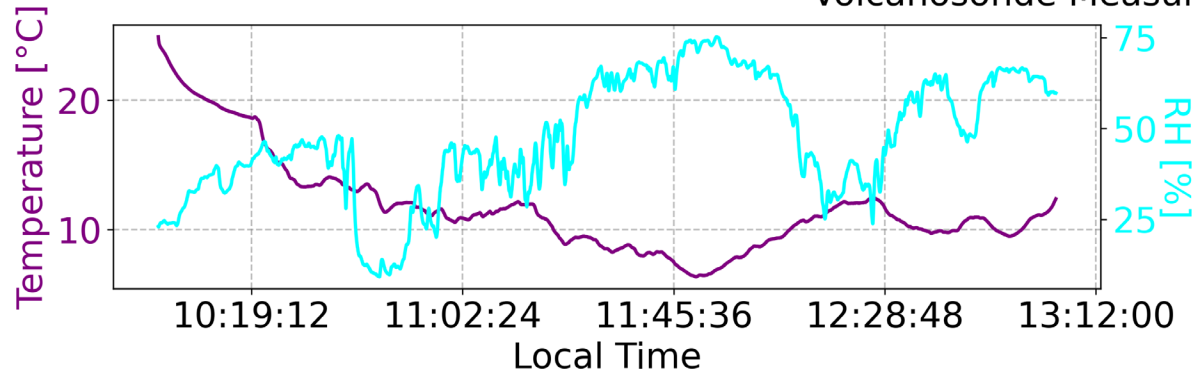
Volcanosonde Measurements | 4D - 05/06/2025



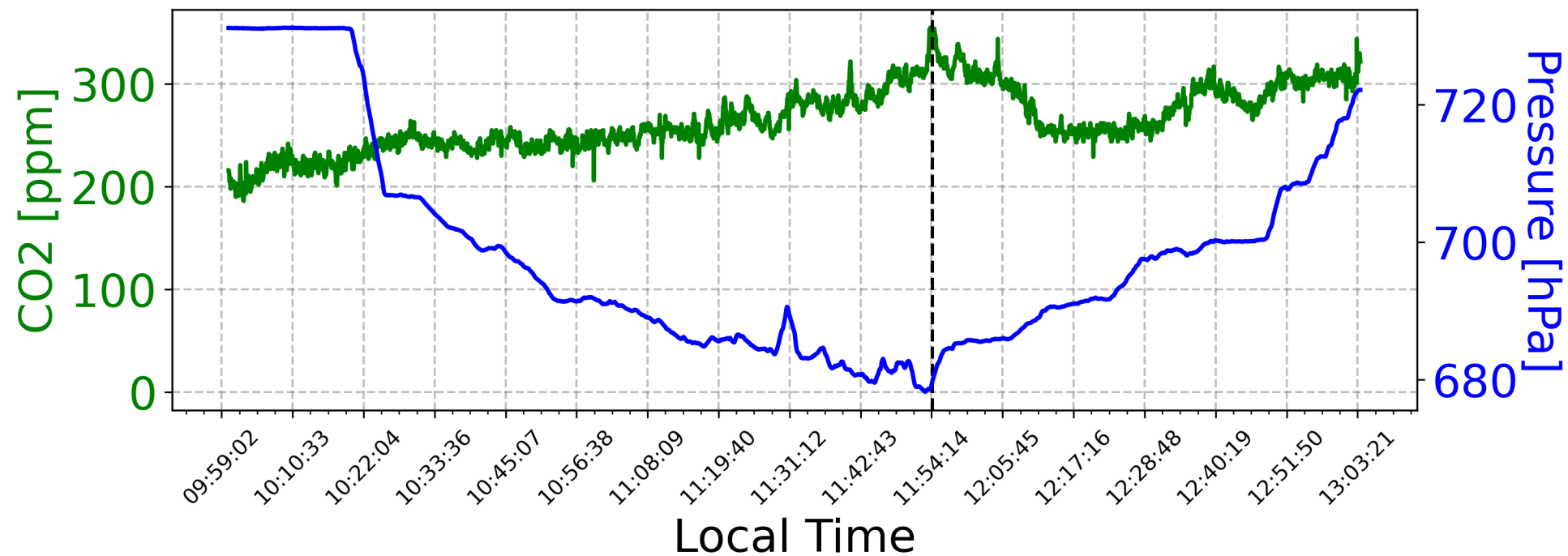
Volcanosonde Measurements | 4D - 05/06/2025



Volcanosonde Measurements | 6D - 05/06/2025



Volcanosonde Measurements | 6D - 05/06/2025

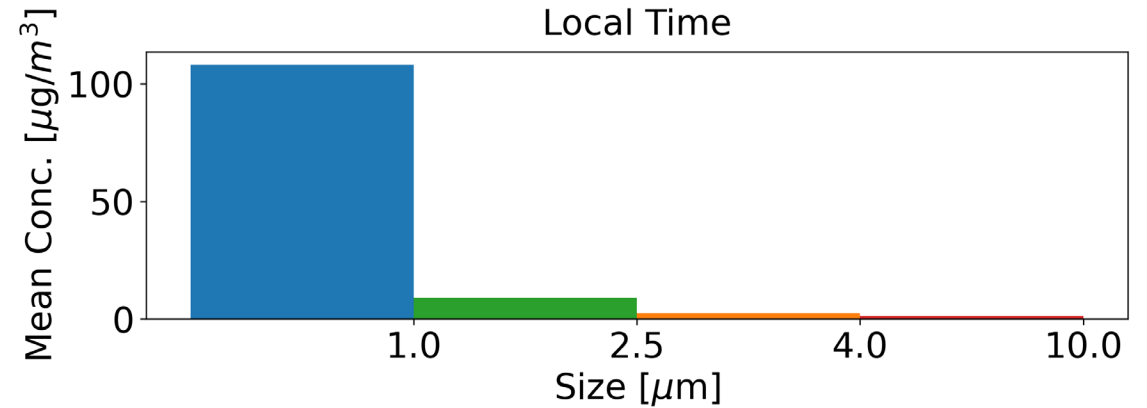
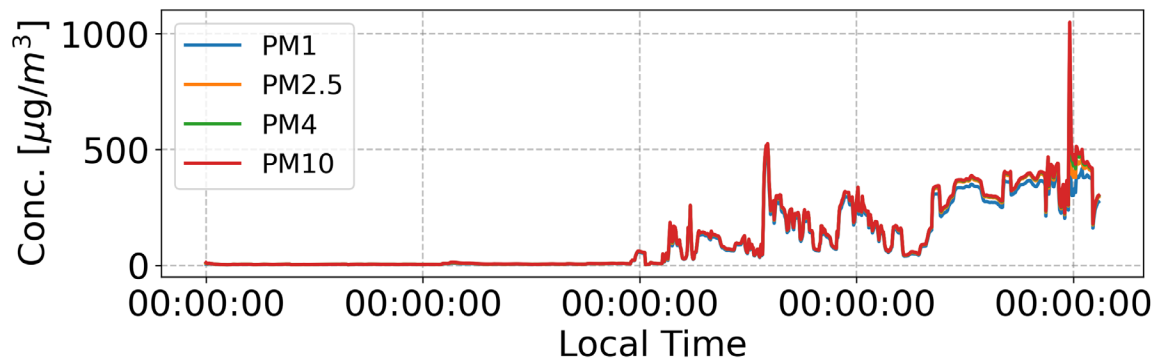
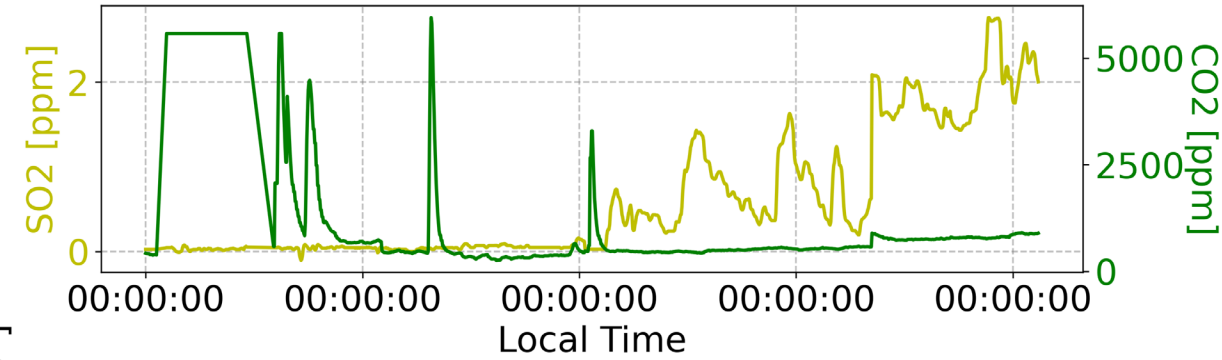
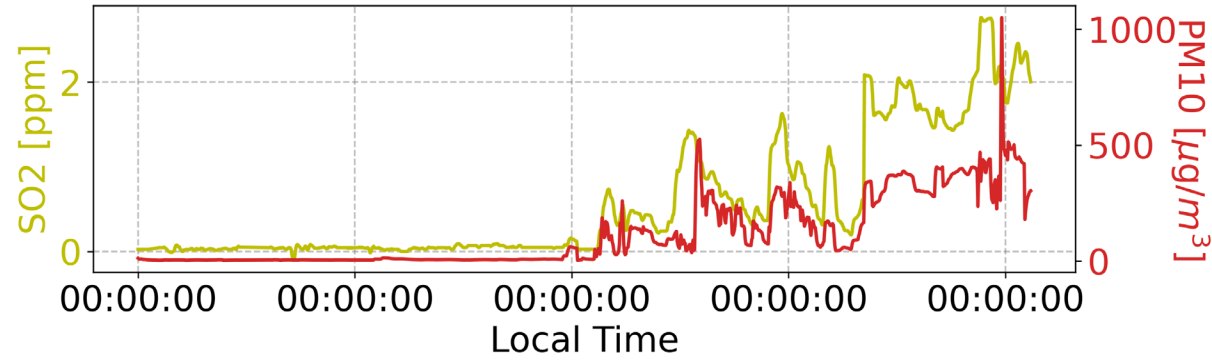
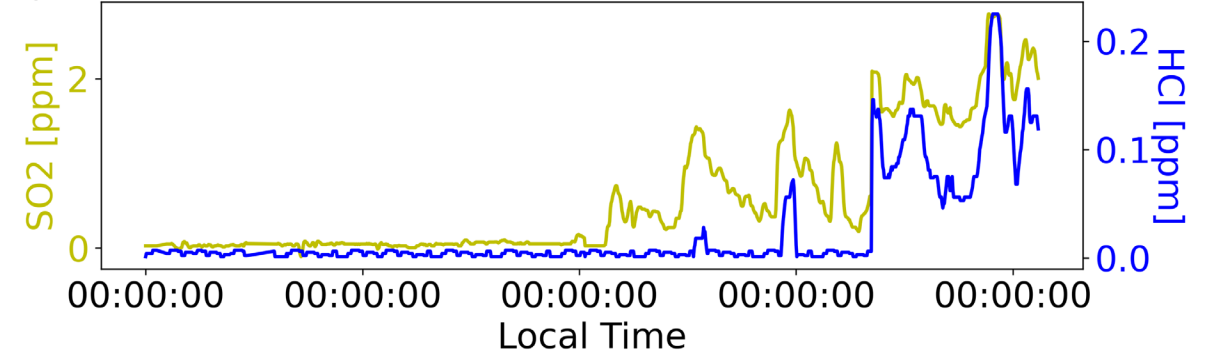
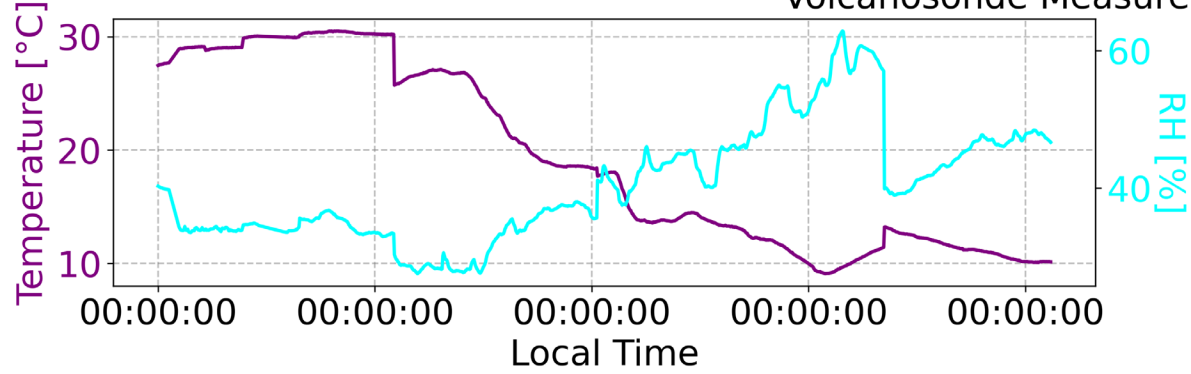




06-06-2025

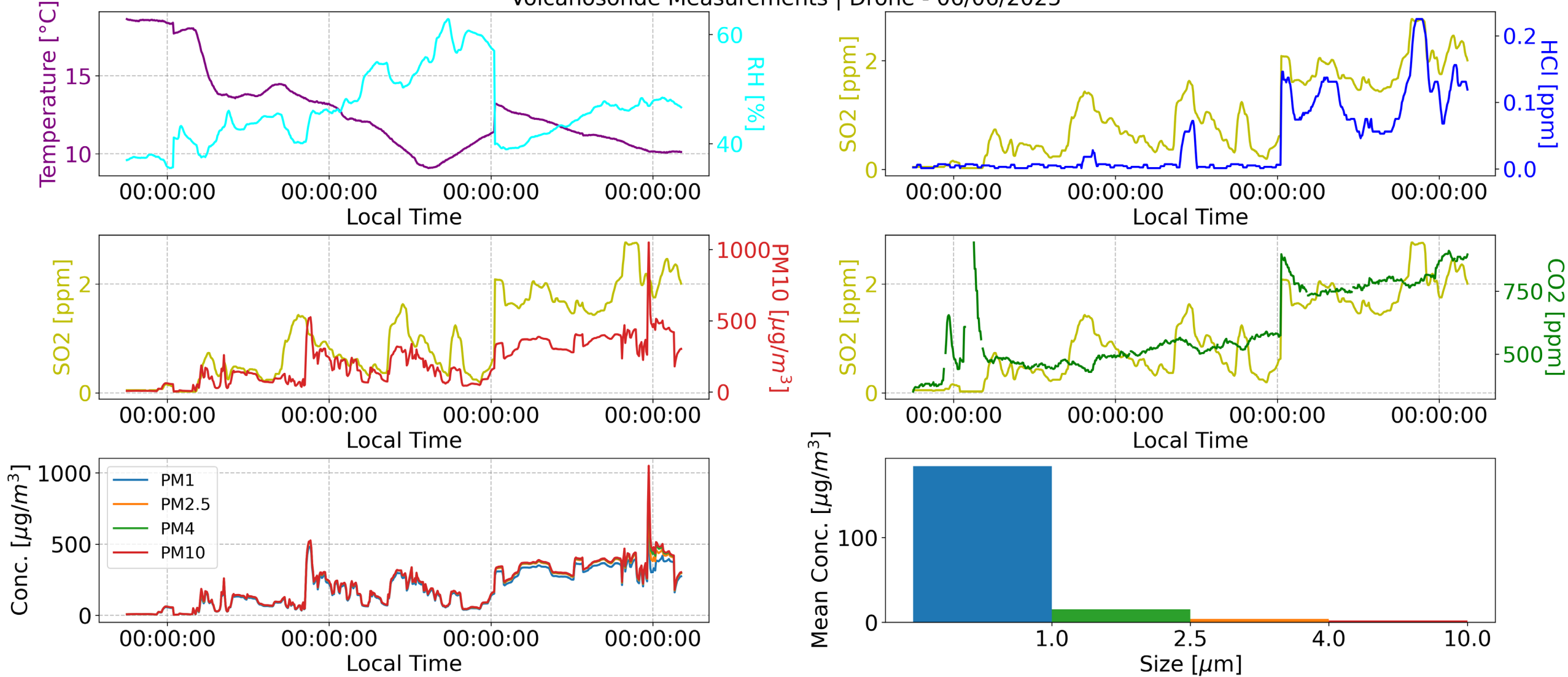
Original data

Volcanosonde Measurements | Drone - 06/06/2025

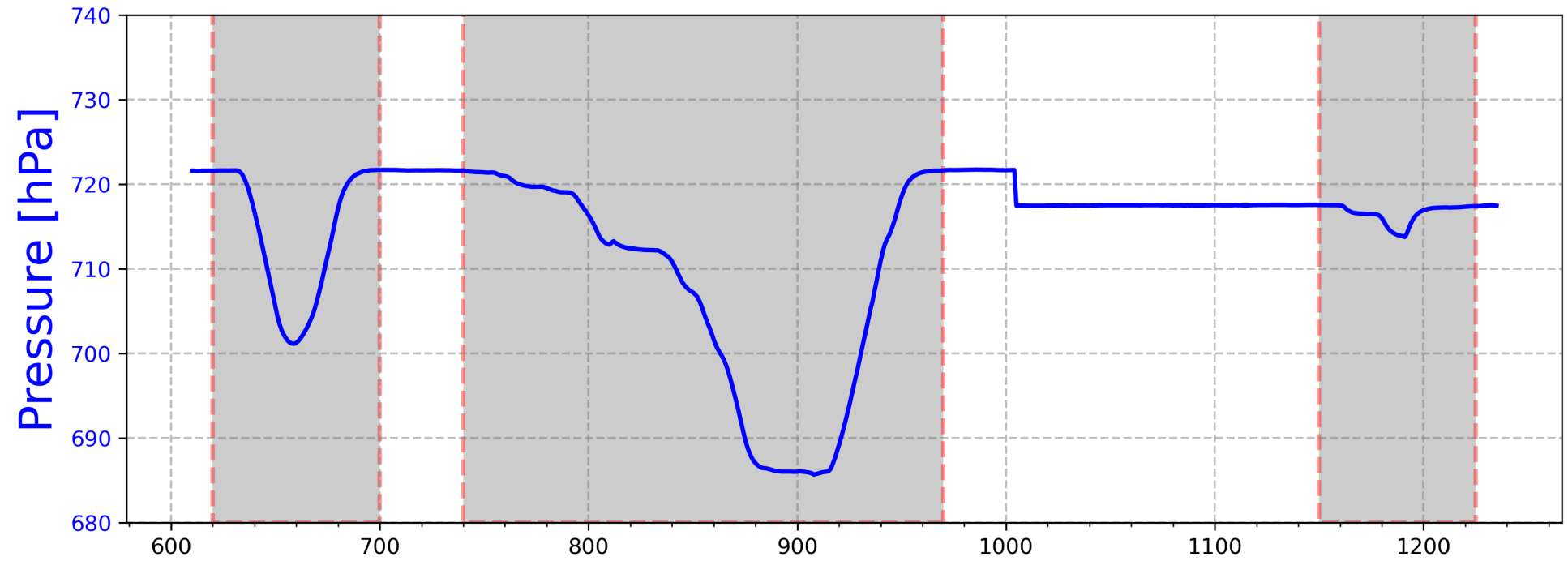


Filtered data

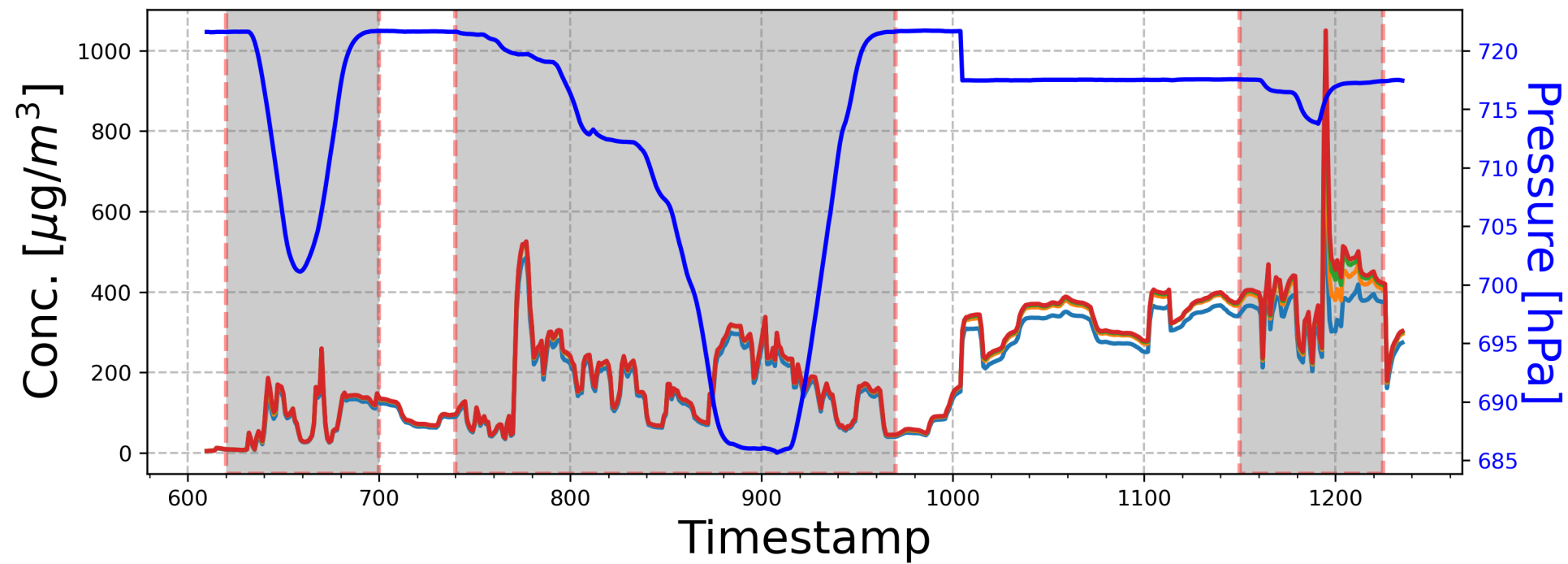
Volcanosonde Measurements | Drone - 06/06/2025



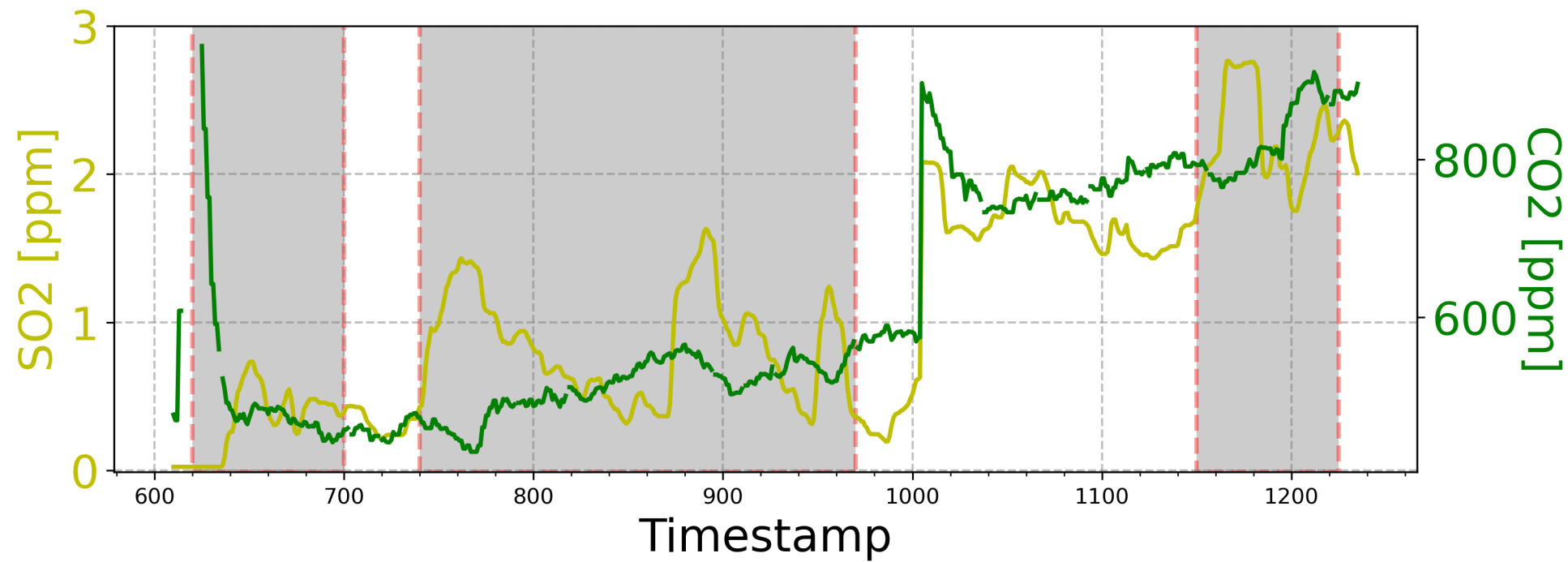
Volcanosonde Measurements | Drone - 06/06/2025



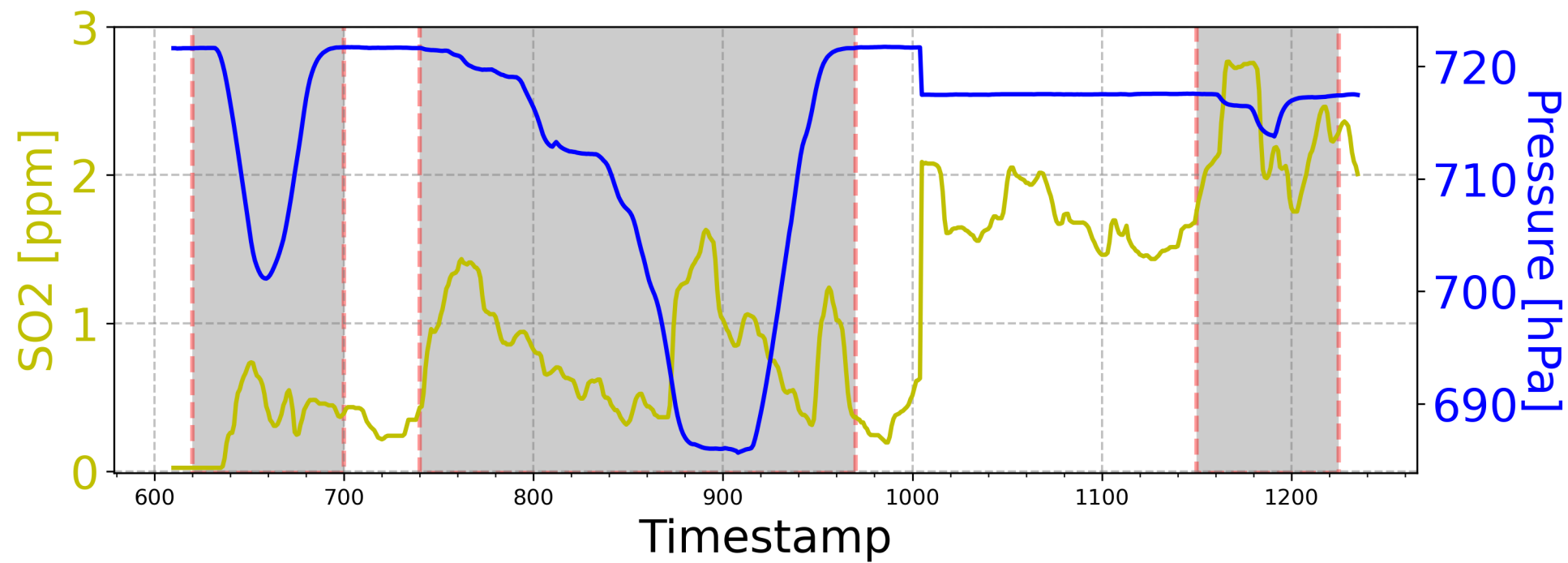
Volcanosonde Measurements | Drone - 06/06/2025



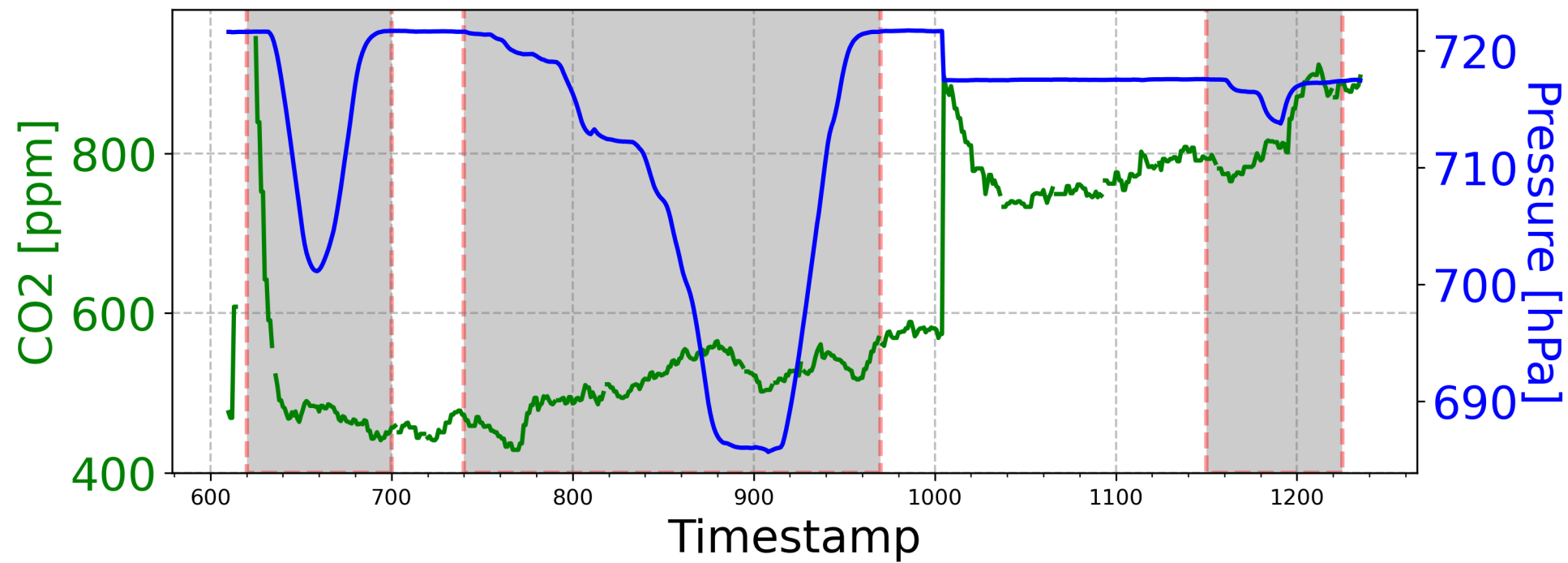
Volcanosonde Measurements | Drone - 06/06/2025



Volcanosonde Measurements | Drone - 06/06/2025



Volcanosonde Measurements | Drone - 06/06/2025



Volcanosonde Measurements | Drone - 06/06/2025

