



In-cabin and out of cabin road test data

VIAQ-29-08

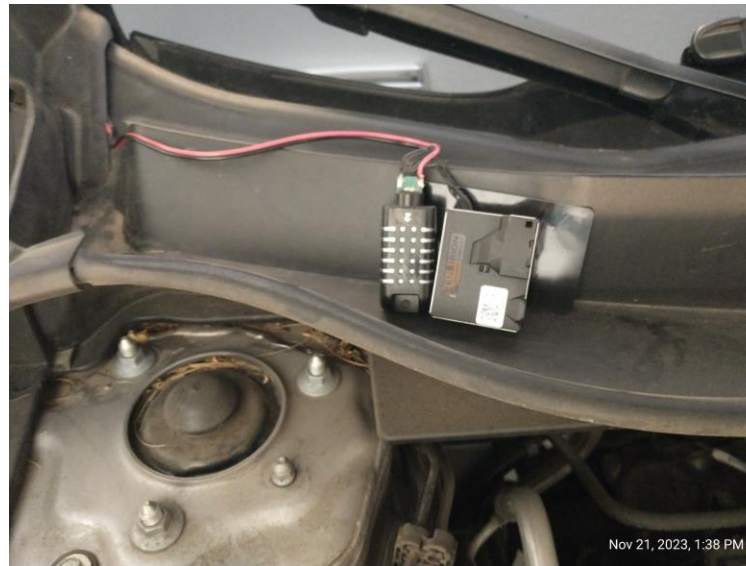
Tests conditions

- Blower speed at 4 bars out of 7
- Recirculation flap position = Open all the time
- Air cooling off
- No significant wind
- External temperature about 75 Fahrenheit
- Cabin air filter about 20 k miles model Epauto CP182 with activated charcoal

Location of in-cabin sensor



Location of external sensor



Air filter used (~20k miles)



*Manufacturer words:
EPAuto CP182 (CF11182) Replacement for Honda Premium
Cabin Air Filter includes Activated Carbon
(Contains soda and carbon to generate fresh breeze air)*

The sensors



VOC/NO₂ sensor from SGX Sensortech (Amphenol group)
Leading supplier of Automotive air quality sensors



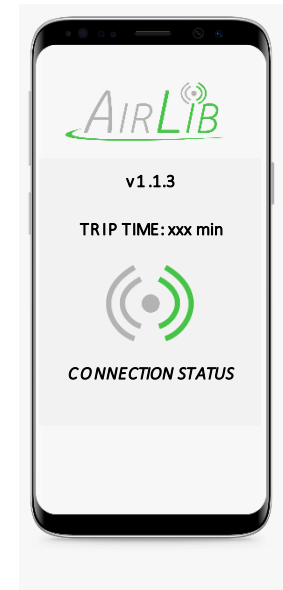
Particulate Matter sensor SEN44 from Sensirion, Switzerland
Market leader in PM/T/RH sensors

Data collection

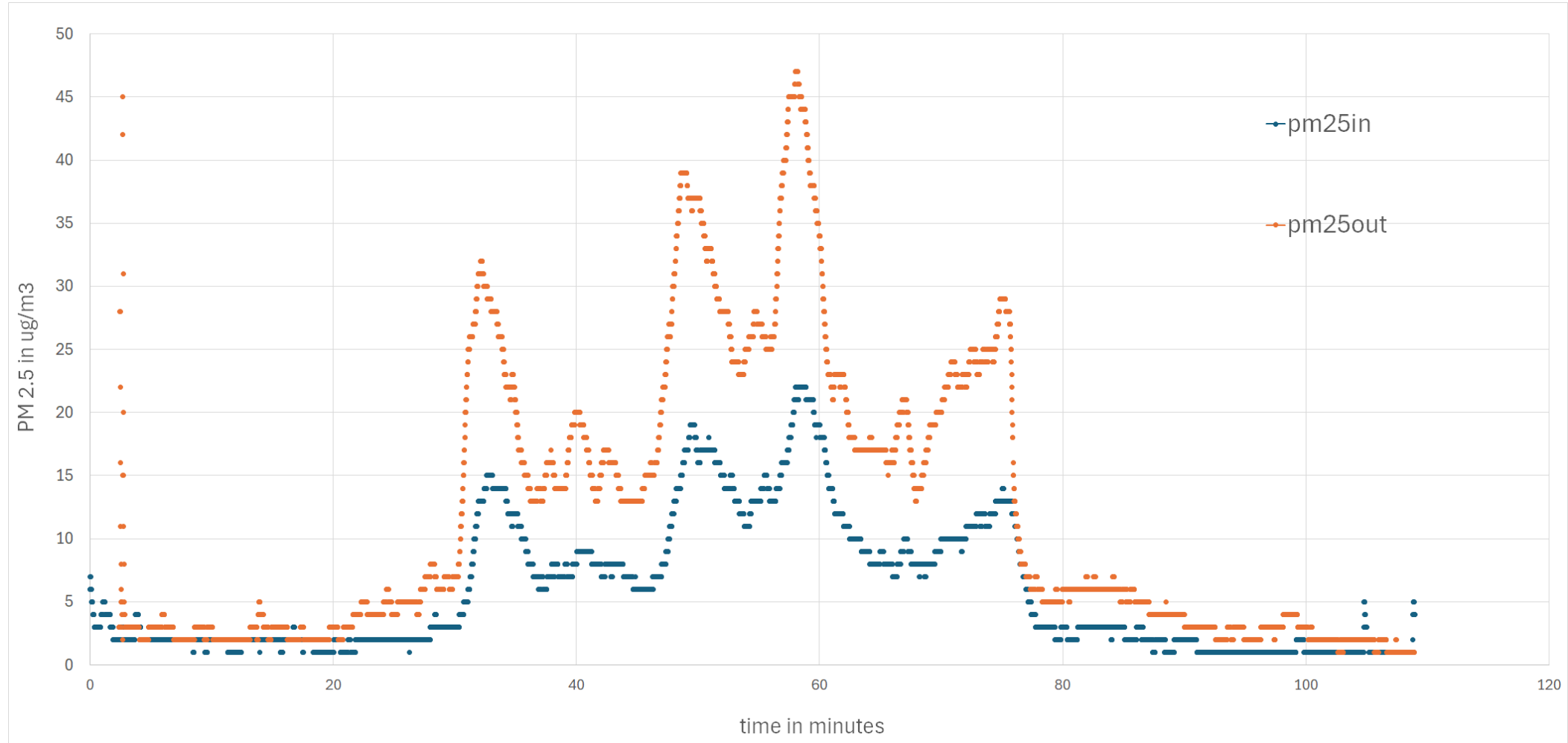
Smartphone app connected to sensor via Bluetooth (one for each sensor)

Near real-time data upload to Google Cloud Storage

Synchronization with EPOCH timestamps

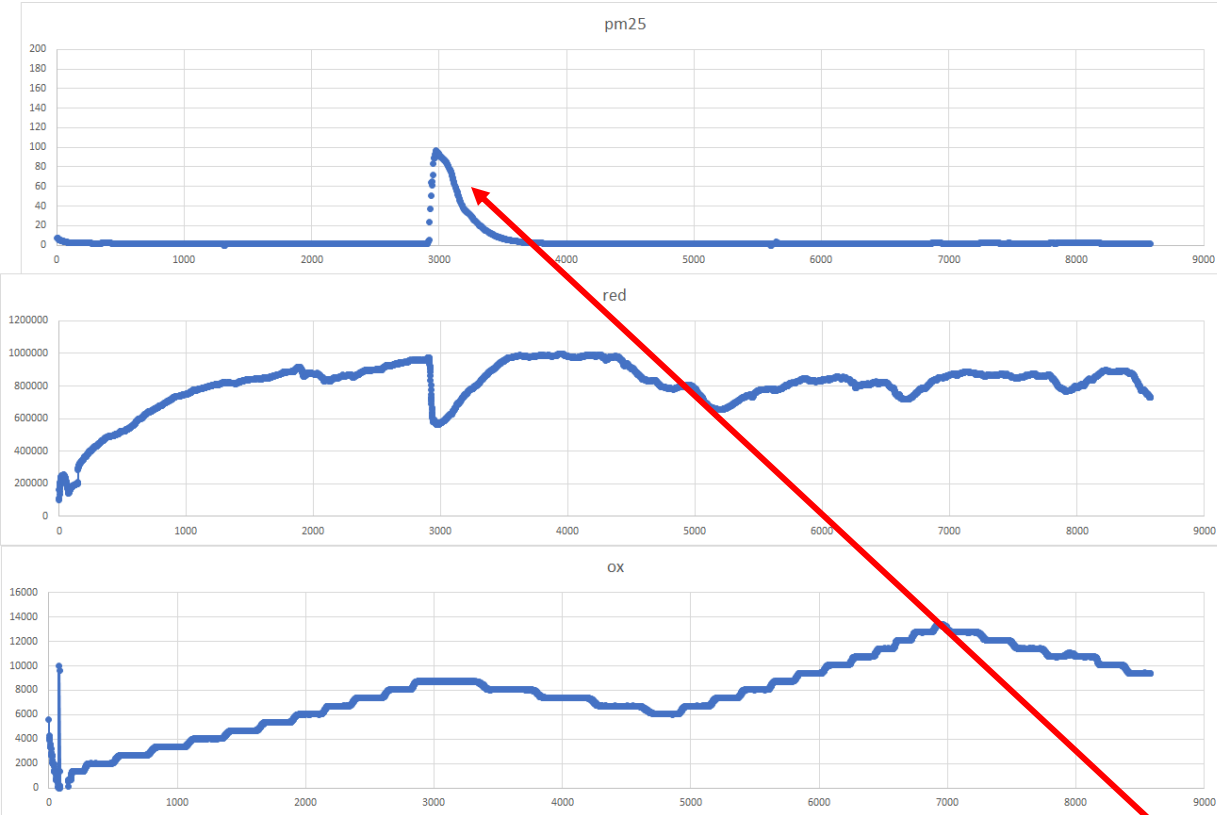


Part of trip from Phoenix to Las Vegas – Jan 10th 2024



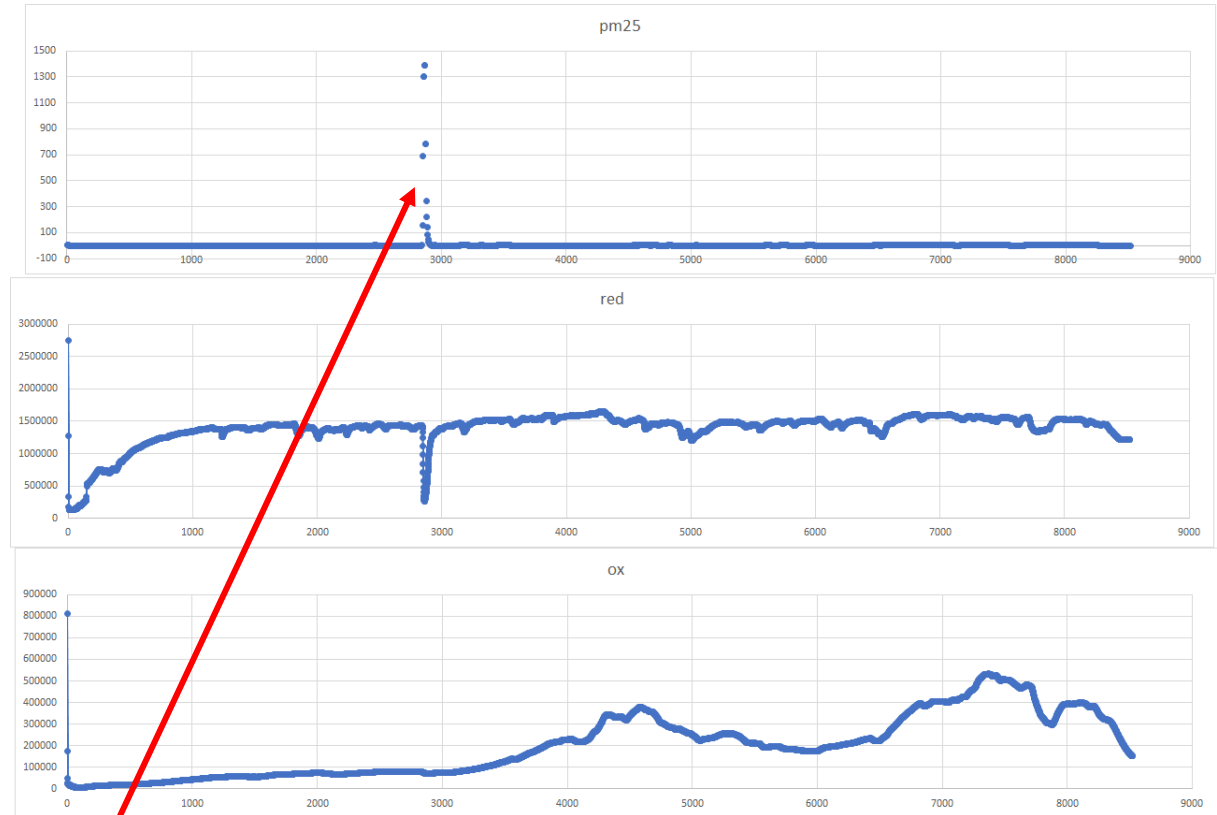
Example: high PM spike

In-cabin sensor graphs



Time unit is 250ms. 1000 on the axis → 250s

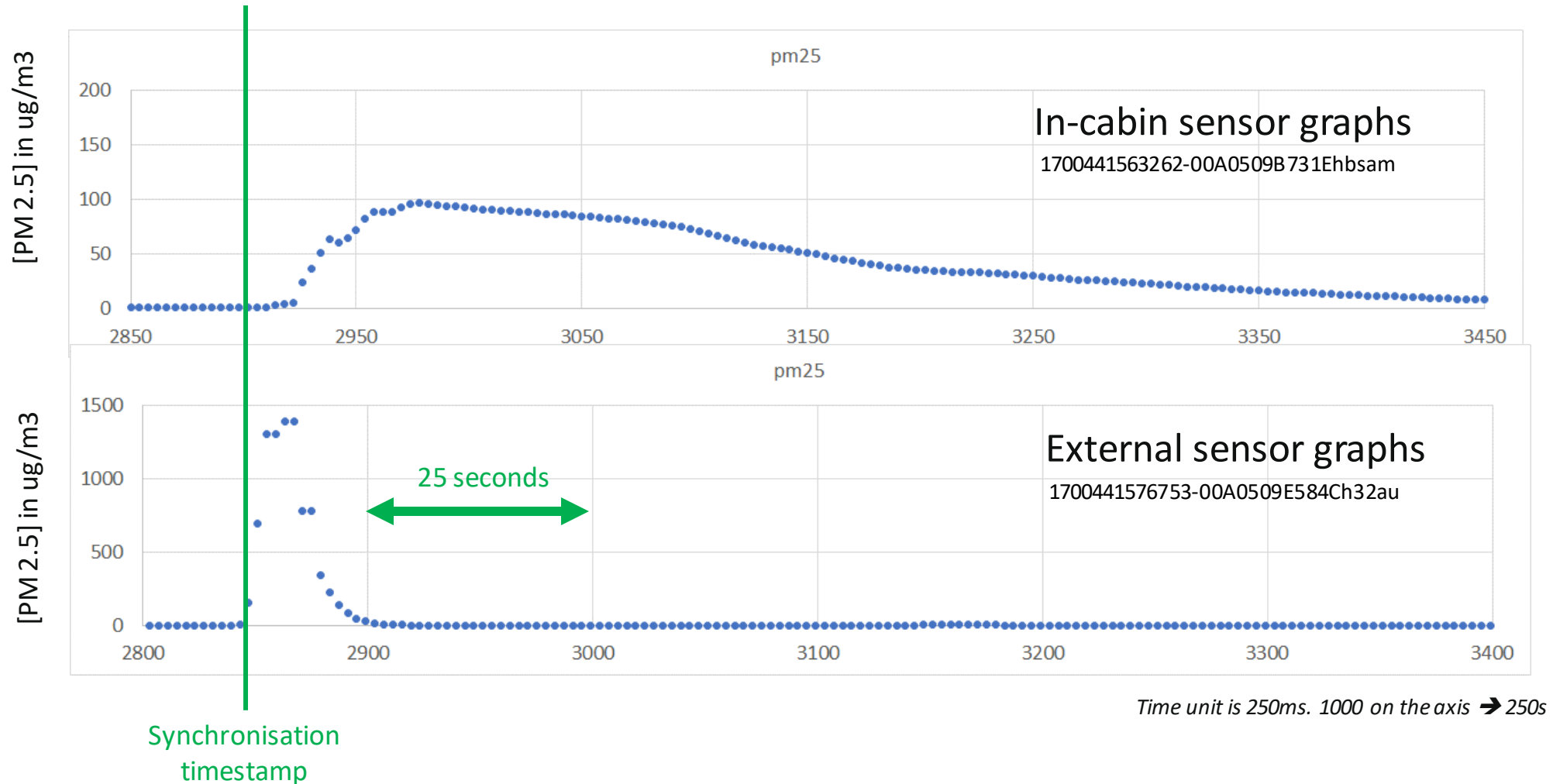
Out of cabin sensor graphs



Cloud of pollution behind accelerating truck

Trip date: Nov 20th 2023

Example: high PM spike



Observations:

- The external high pollution peak lasts approx. 12 seconds, while the internal “peak” is spread over approx. 2 minutes
- PM 2.5 peak is at approx. 1500 ug/m³ on external sensor and 100 on internal sensor, due to both the filter and the dilution