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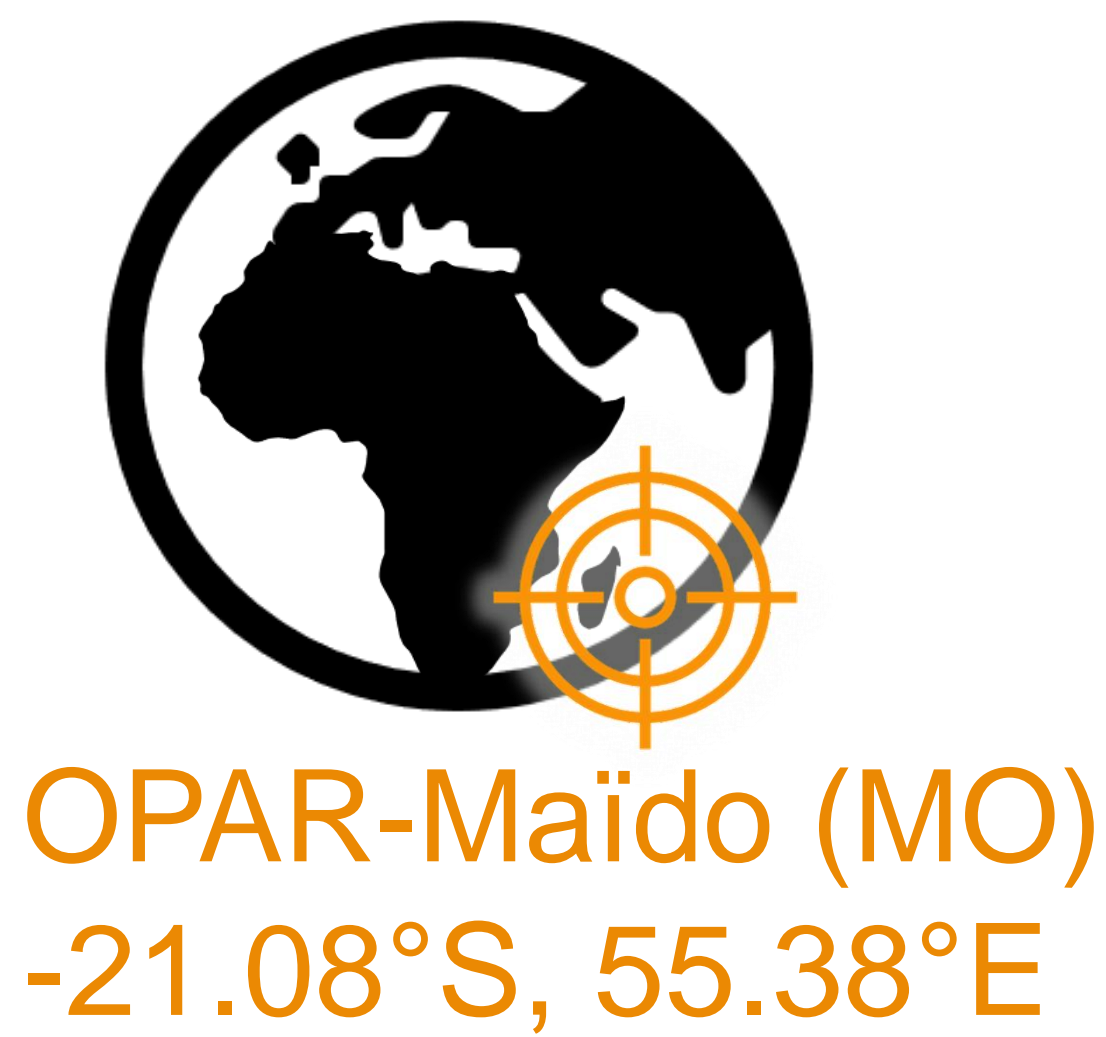
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Implementation of long-term VOC measurement at the remote tropical background GAW global station, Maïdo observatory

M. Rocco¹, O. Magand², P. Boulanger³, S. Toriello³, P. Hernandez², Y. Hello², V. Duflo^{4,5}

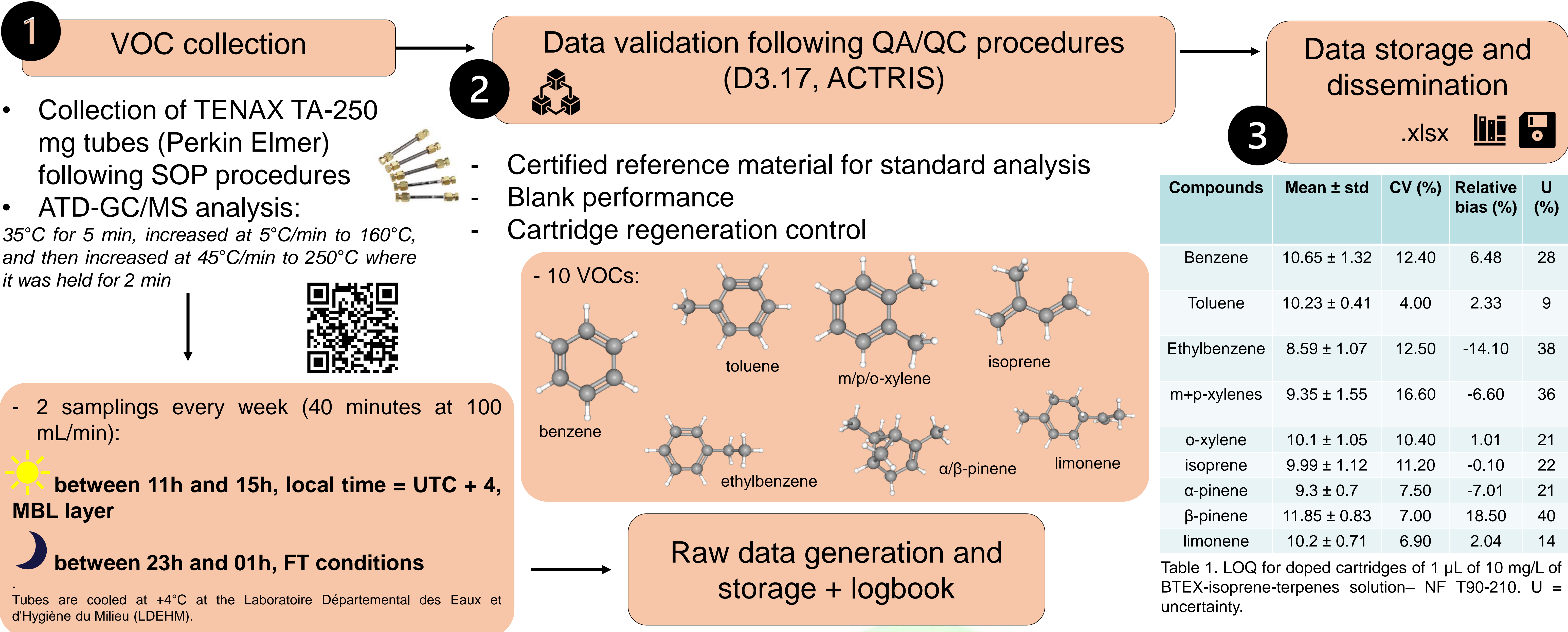


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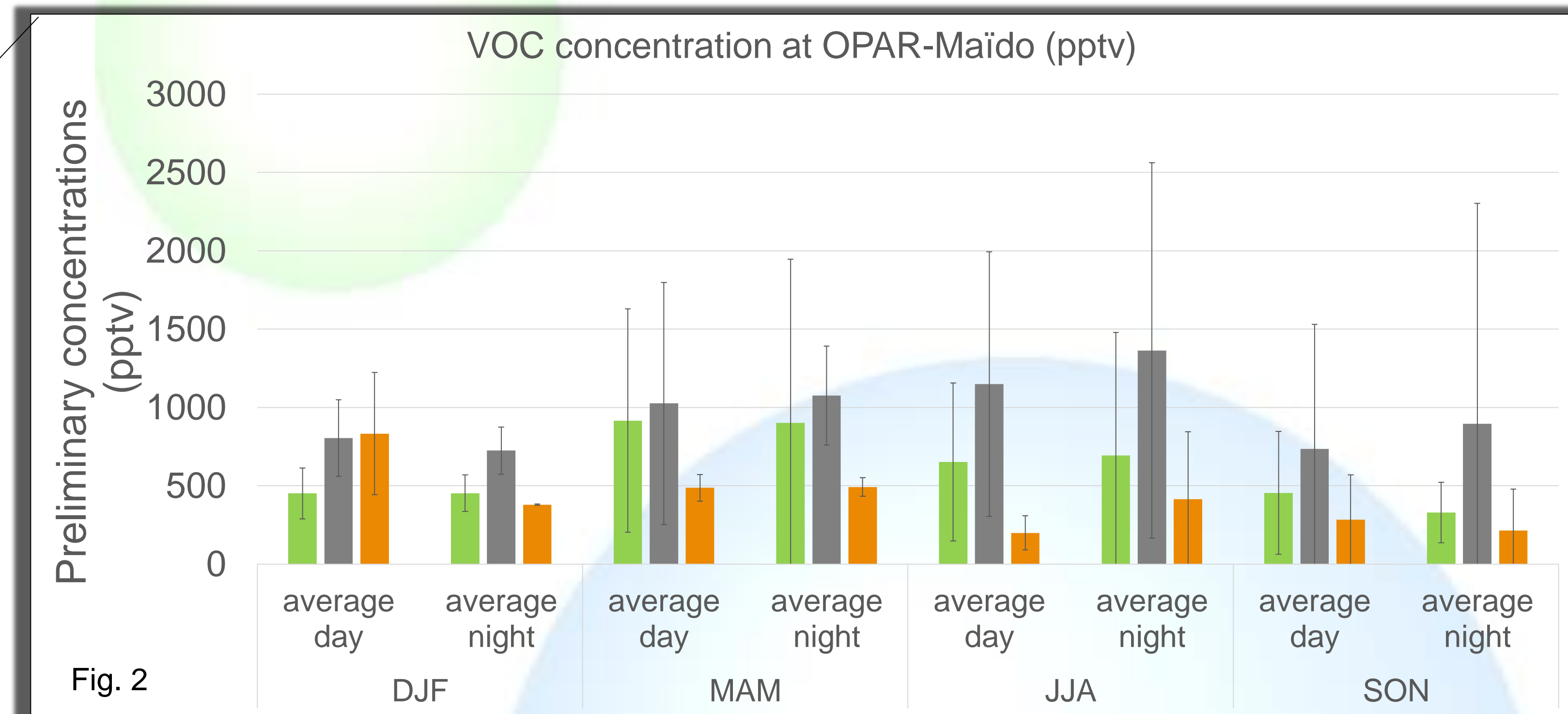
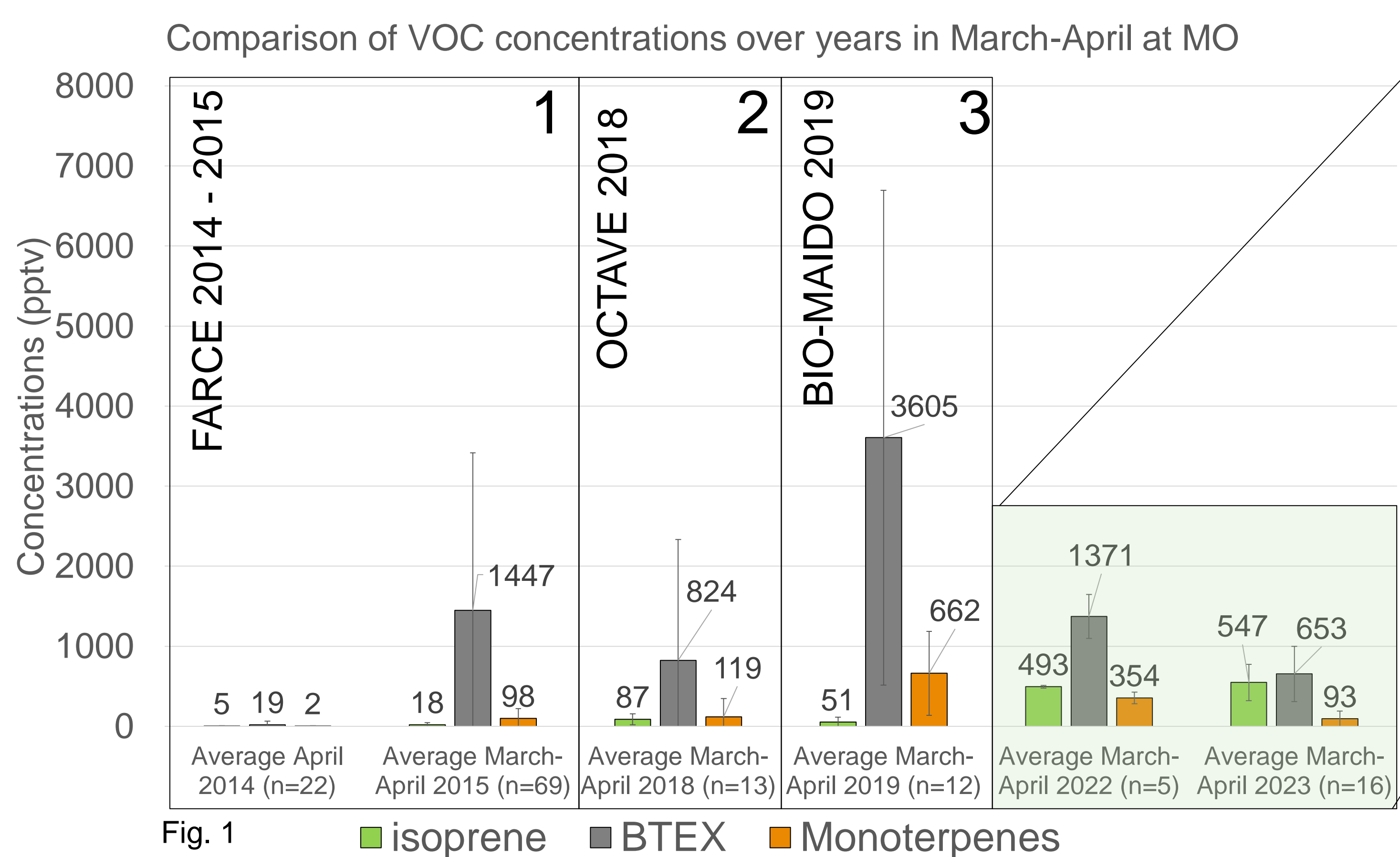
Sources and sinks of volatile organic compounds (VOCs) have been measured in past studied in the tropical South Hemisphere [1]. In the aim to continue these measures, VOCs measurements have been set up for long-term measurements by adsorbent tubes (TENAX-TA) at the Maïdo observatory (MO, -21.08°S, 55.38°E). This study presents the methodology of validation and data processing of a dataset of VOC concentrations during more than one year from April 2022 to October 2023. The data set represents the initial measurements of VOC concentrations that will be implemented over time and used for future VOC assessment at MO.

[1]: Amelynck et al., 2021 (<https://doi.org/lama.univ-amu.fr/10.18758/71021061>), Verreyken et al., 2021 (<https://doi.org/lama.univ-amu.fr/10.5194/acp-2021-124>), Rocco et al., 2020 (<https://doi.org/10.3390/atmos11020140>), Rocco et al., 2022 (<https://doi.org/lama.univ-amu.fr/10.1029/2021JD035570>), Leriche et al., 2023 (<https://doi.org/10.5194/egusphere-2023-1362>)

Methodology and data processing



Preliminary Results



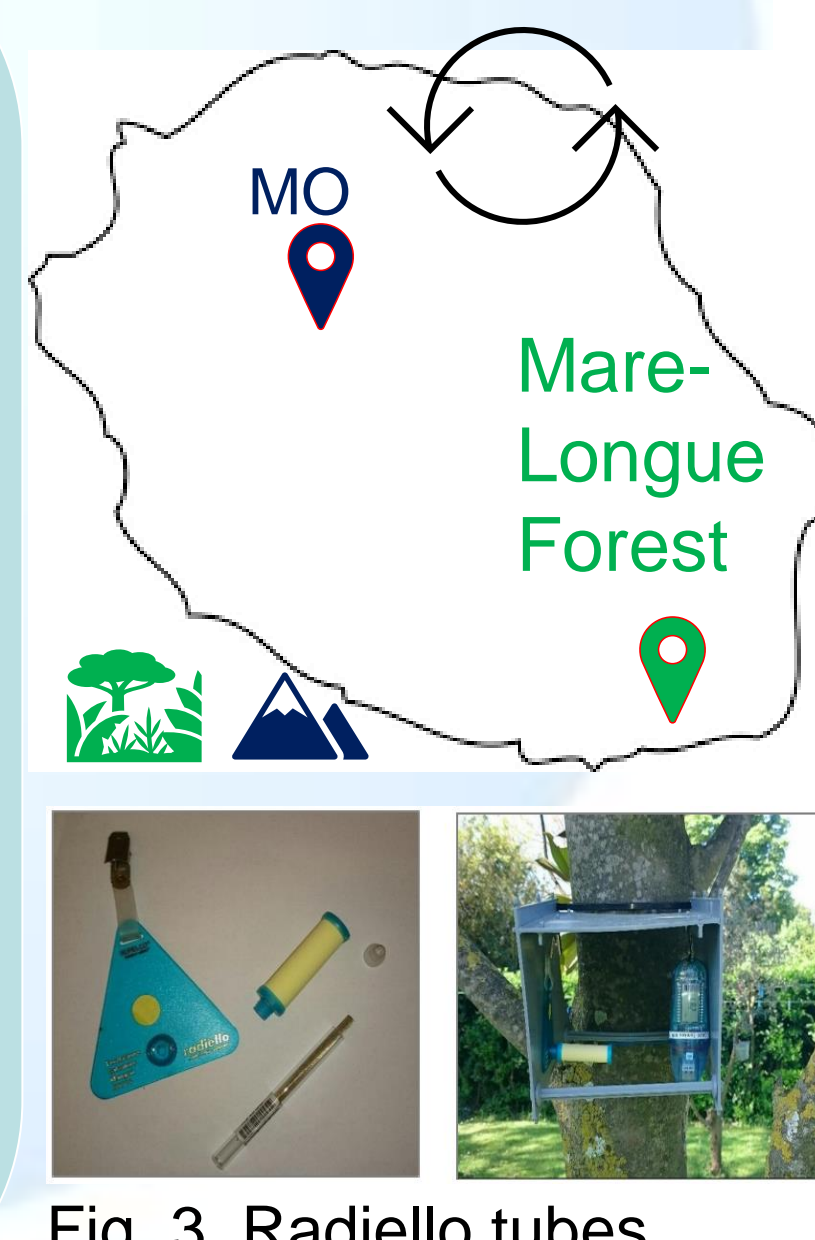
TENAX cartridge have been performed in previous field campaigns (1, 2, 3 on Fig. 1) and showed high BTEX concentrations (excepted in 2014). For our measures (Fig. 2), we showed preliminary concentrations of isoprene are varying between 329 ± 193 pptv to 916 ± 713 pptv. No seasonal and diurnal variation are visualized for isoprene, BTEX and monoterpenes during our measurements. At this stage of this work, we show here preliminary data that are not validated.

Conclusion

Here, we present the results and validation process of the long-term measurement of VOCs using a simple and low-cost technique. We generated a temporal dataset of VOCs at the MO station with the aim of monitoring biogenic and anthropogenic VOCs.

Next objectives:

- incorporate continuous VOC measurements at MO using online techniques
- Mare-Longue forest VOC measurement and link between the two sites (TROPIVOC project funded by OMNCG).



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