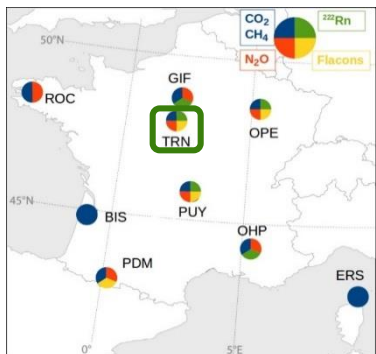


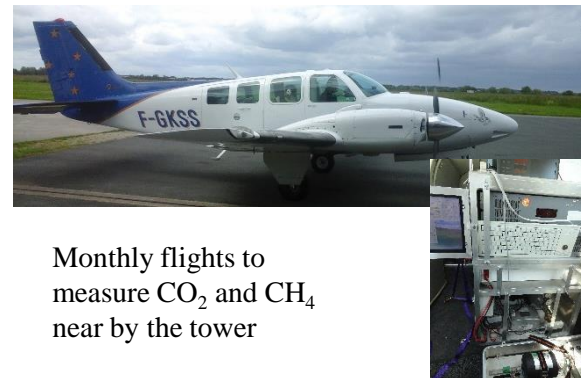
Combined balloon, aircraft, and surface greenhouse gas measurements at Traînou supersite, France

C. Lett, M. Lopez, M. Ramonet, C. Crevoisier, F. Danis, O. Membrive, T. Warneke, Y. Té, P. Jeseck, V. Thouret, P. Chazette, J. Totems, M. Delmotte, O. Laurent, J. Marais, D. Combaz, O. Jossoud, O. Llido, J. Leprêtre, F. M. Bréon, L. Rivier, P. Ciais

Context and Objectives:

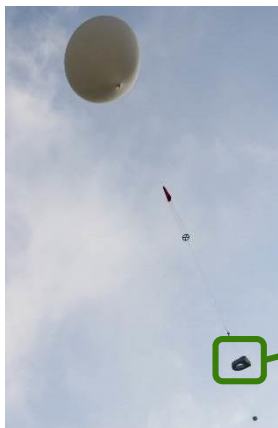


Traînou tall tower:
CH₄, CO₂, CO and COS measurements at 5, 50, 100 and 180m
Radon, integrated ¹⁴C measurements at 180m
H₂ measurements at 5m
TCCON measurements



Monthly flights to measure CO₂ and CH₄ near by the tower

Methodology:

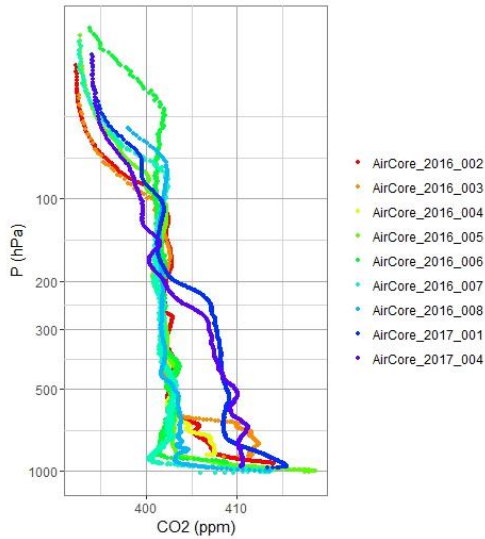


FTIR COCCON

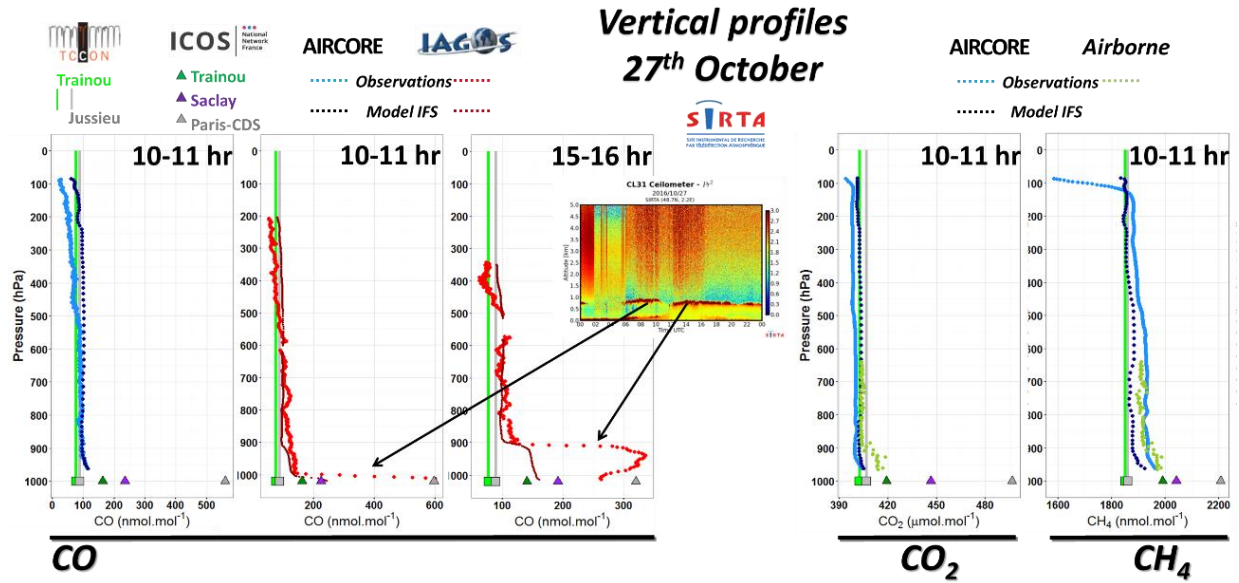


LIDAR

Results:



AirCore Profile (CO₂, CH₄, CO, δ¹³CO₂, δ¹³CH₄, N₂O)



Conclusion/Prospective:

- AirCore sampling is an easy and cost effective way to obtain in-situ measurements of greenhouse gases of the atmospheric column.
- Gathering data from surface measurements, aircraft, balloons and satellites will help characterizing more deeply vertical profiles of CO₂ and CH₄.
- It also enables the validation of satellites measurements, for instance the data that will be provided by MERLIN and MICROCARB due to be launched in 2021. All the data from the campaign will be available at the AERIS data pole and used to validate simulations from atmospheric transport models and gas reanalysis provided by CAMS.