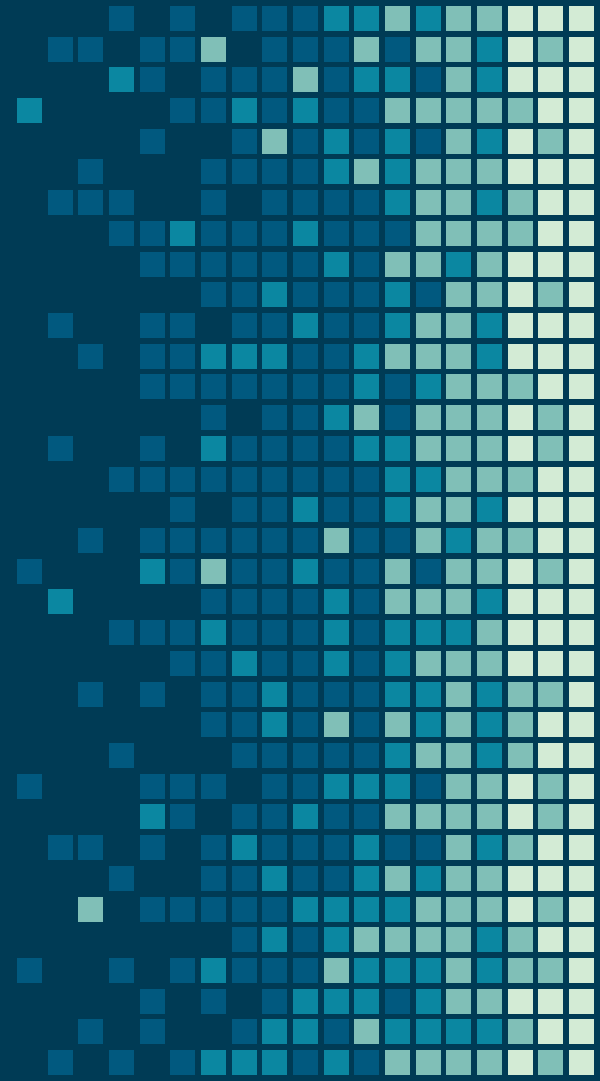


SOFOG 3D
UAV flights
Cloud sensor data



UAV flights during SOFOG 3D

3 X6 Skywalker UAVs

(X6-8, X6-9, X6-11)



6 POI

(10 nov, 29/30 nov, 30/31 dec, 5/6 jan, 23/24 fev, 7/8 mar)

17 science flights

Operating principle of Cloud Sensor

Scattered light measurement

Light source : 4 LEDs
(Orange, Cyan, IR1, IR2)

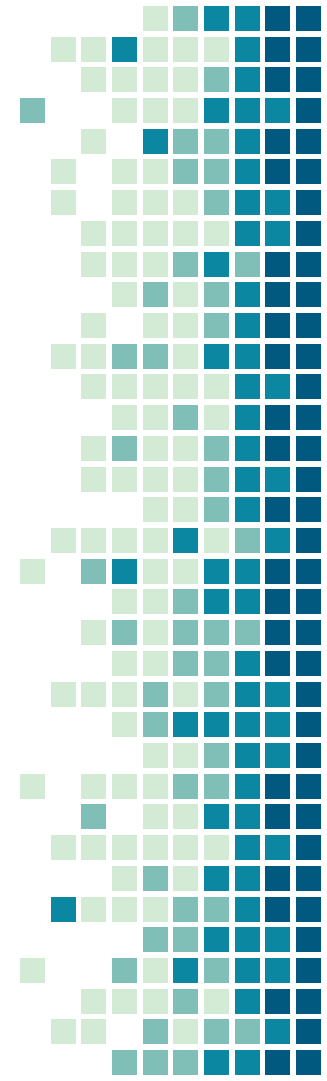
1 Photodetector

Output voltage ↗ as optical extinction ↗ in cloud



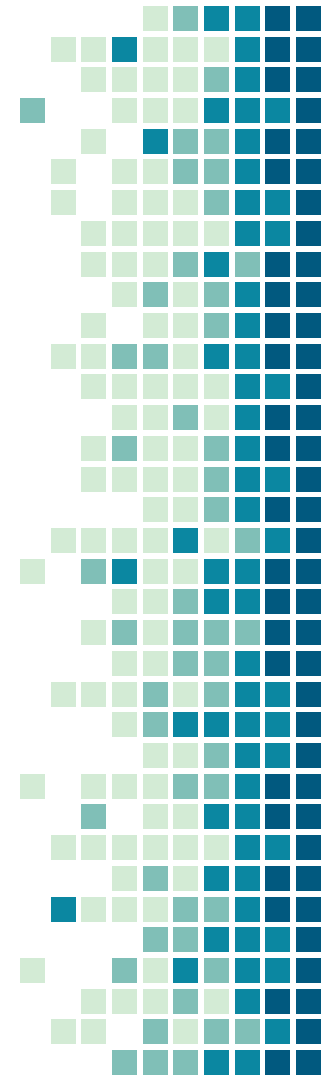
Harrison, R. G. and Nicoll, K. A.: Note: Active optical detection of cloud from a balloon platform, Rev. Sci. Instrum., 85, 066104, <https://doi.org/10.1063/1.4882318>, 2014.

Sanchez, K. J. et al. : Top-down and bottom-up aerosol–cloud closure: towards understanding sources of uncertainty in deriving cloud shortwave radiative flux, Atmos. Chem. Phys., 17, 9797–9814, <https://doi.org/10.5194/acp-17-9797-2017>, 2017.



Issues

- Test CS in fog conditions
- Variability ?
- Spatial heterogeneities ?



Règle

Ligne Trajet Polygone Cercle Trajet 3D Polygone 3D

Mesurez la distance entre deux points au niveau du sol.

Longueur de la carte : 4,65 Kilomètres

Longueur au sol : 4,65

Direction : 68,73 degrés

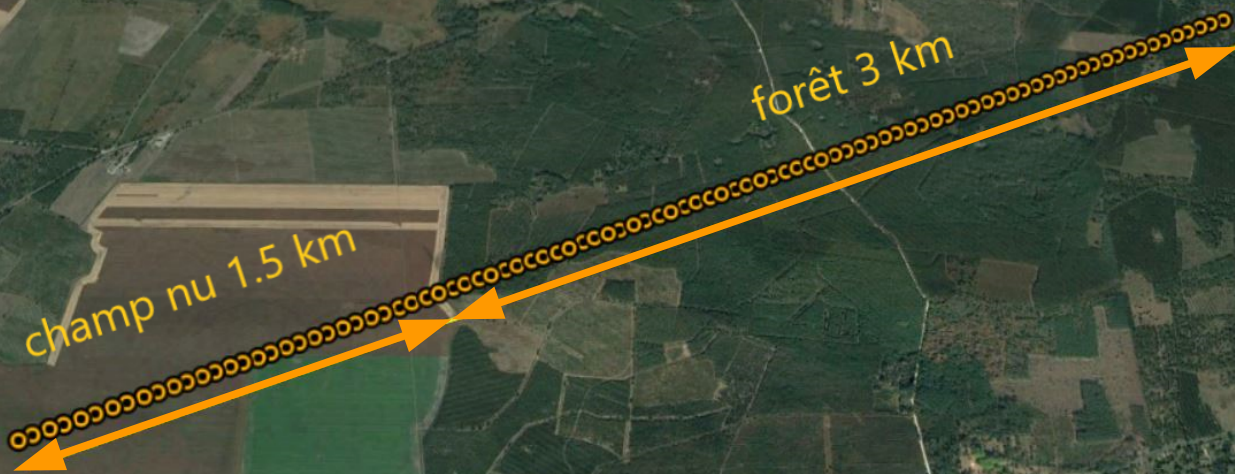
Navigation à la souris

Enregistrer

Effacer

Horizontal legs

Tartehum



© 2020 Google

Google Earth

2009

Date des images satellite : 2/10/2018

44°25'06.11"N

0°34'35.36"O

élev. 73 m

altitude 4.69 km

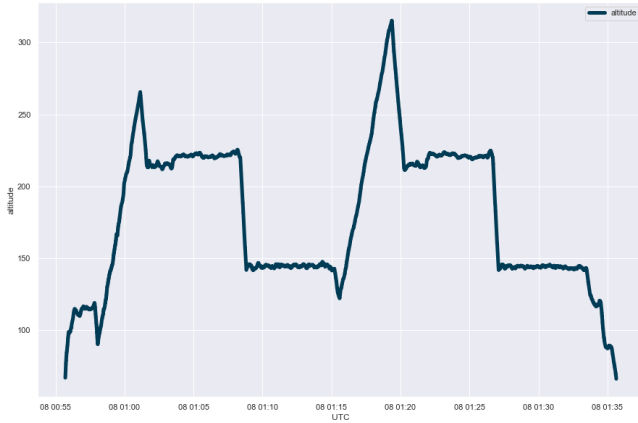
Flight plan

POI 14

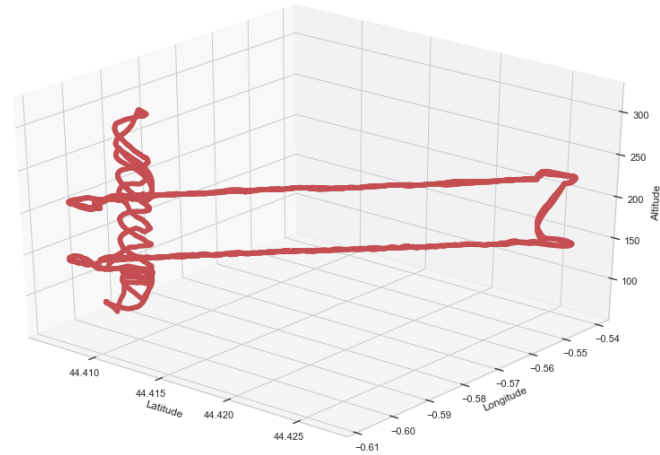
Flight1 (00h42)

X6-11

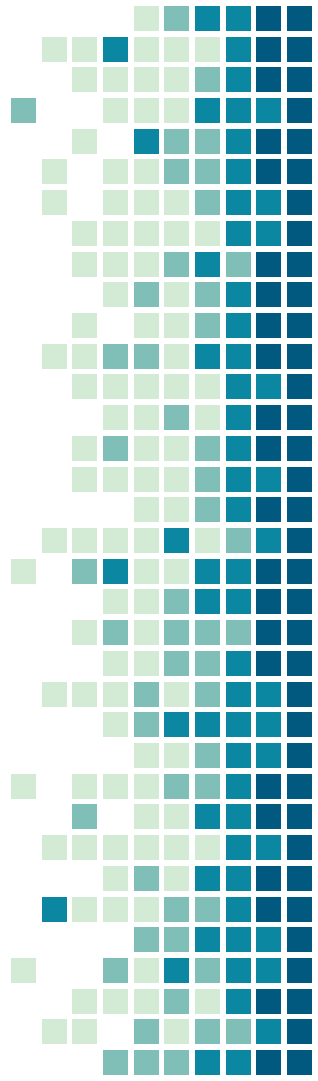
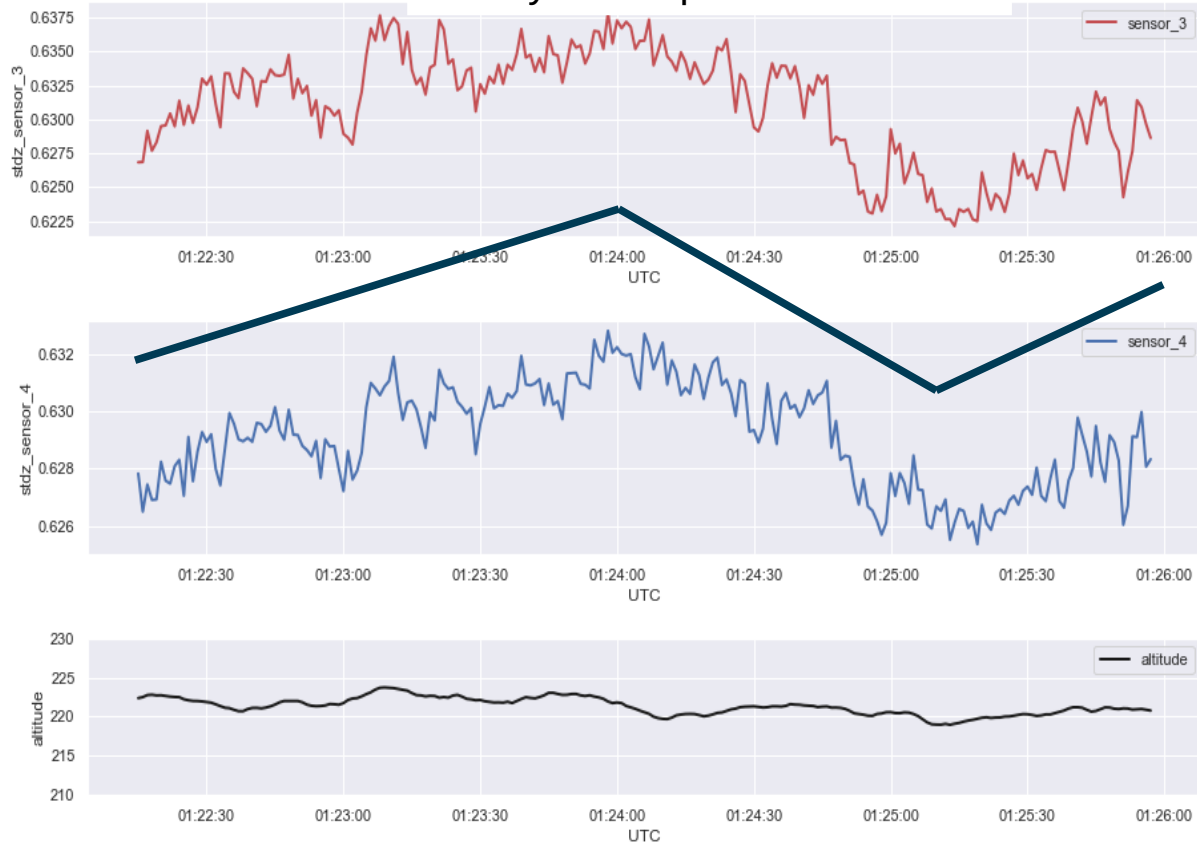
X6-11 2020-03-08 00:42
Flight 1



X6-11 2020-03-08 00:42
Flight 1
Trajectoire



X6-11 2020-03-08 00:42
Flight 1 Palier 3 220m
IR / Cyan comparison



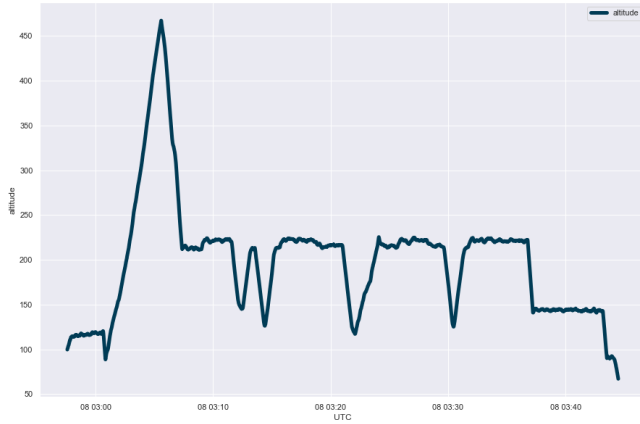
Flight plan

POI 14

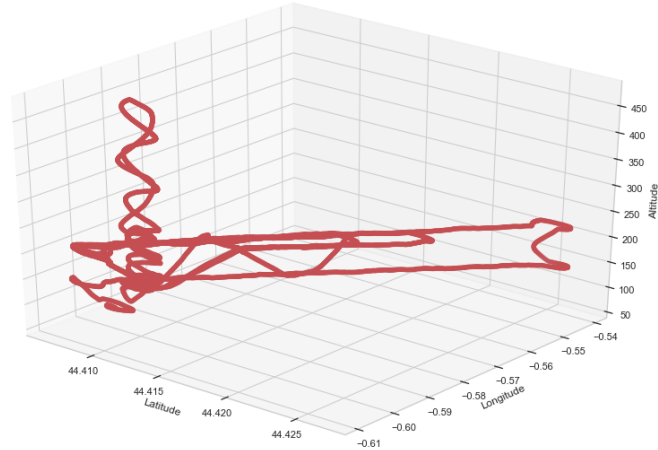
Flight 3 (03h45)

X6-08

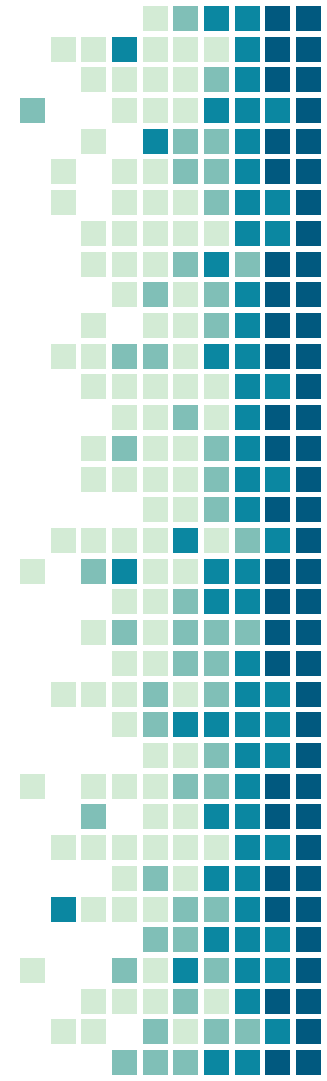
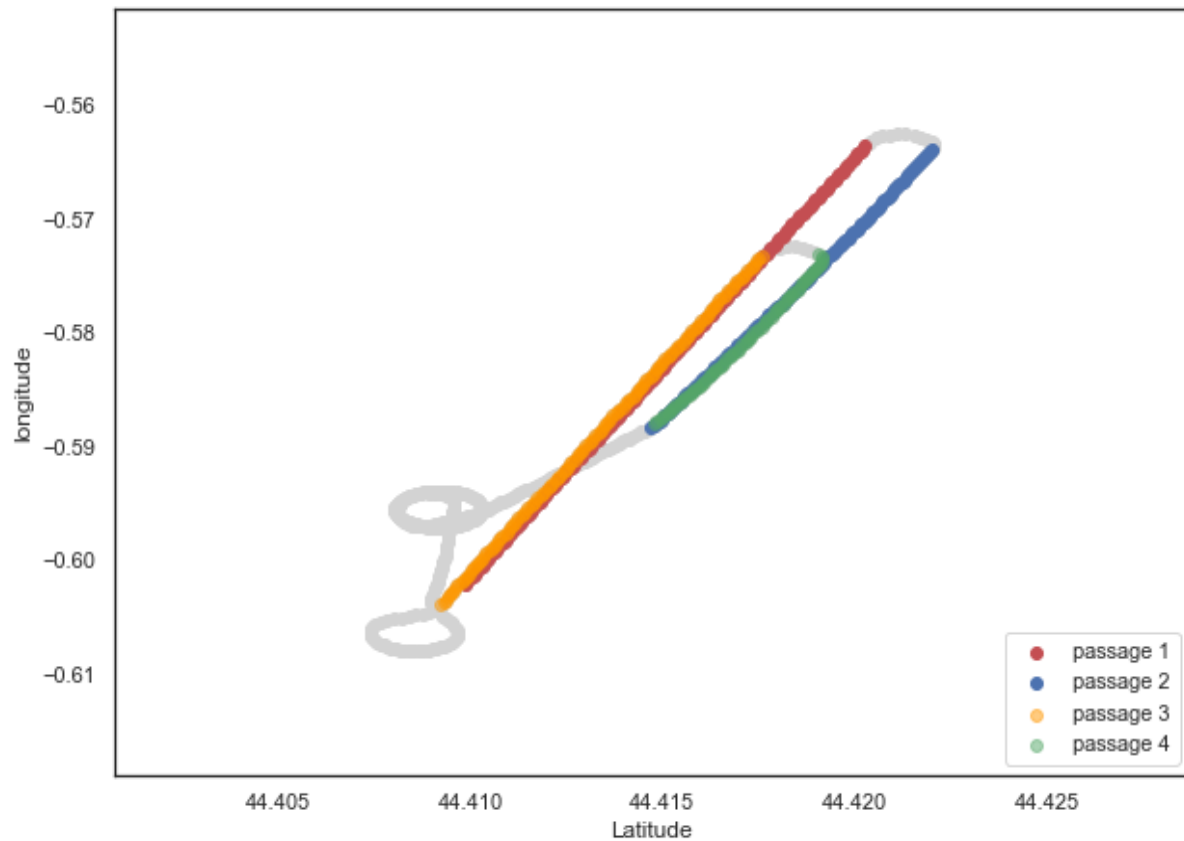
X6-08 2020-03-08 03:45
Flight 3



X6-08 2020-03-08 03:45
Flight 3
Trajectoire

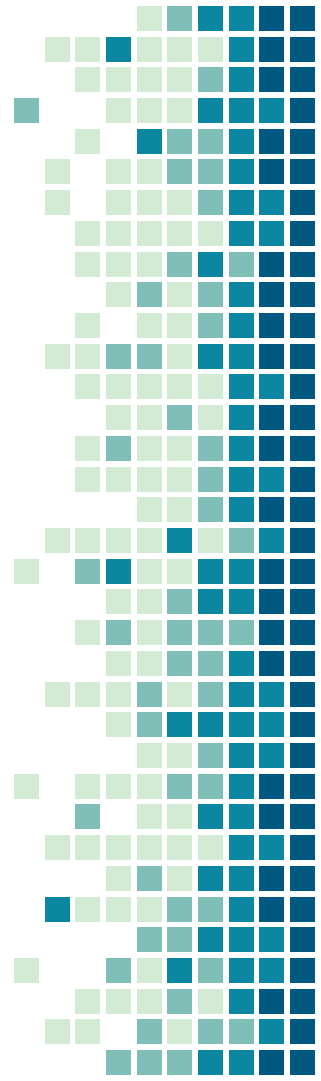
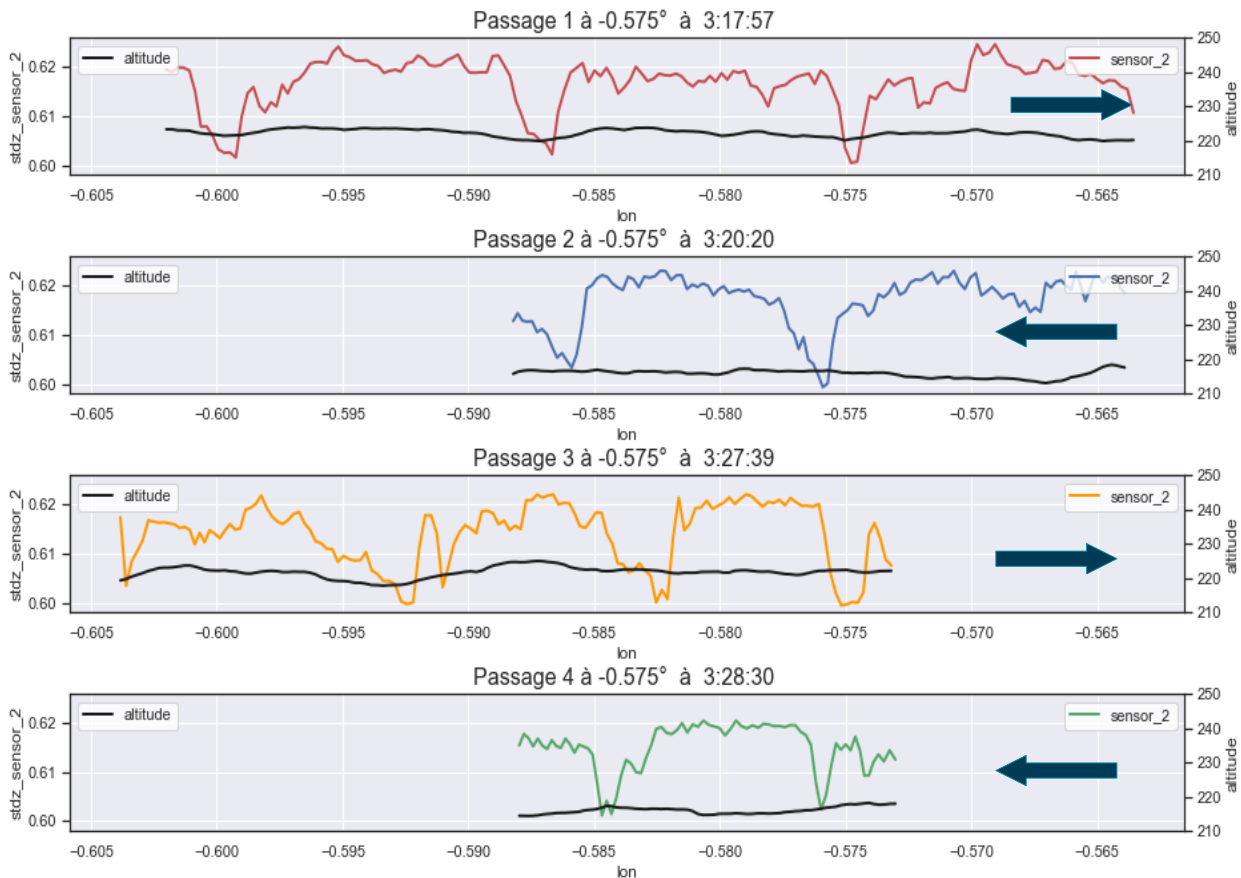


X6-08 2020-03-08 03:45
Flight 3

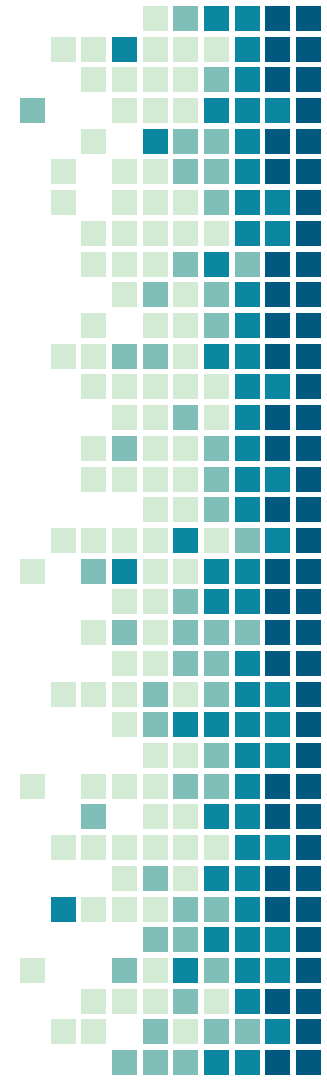
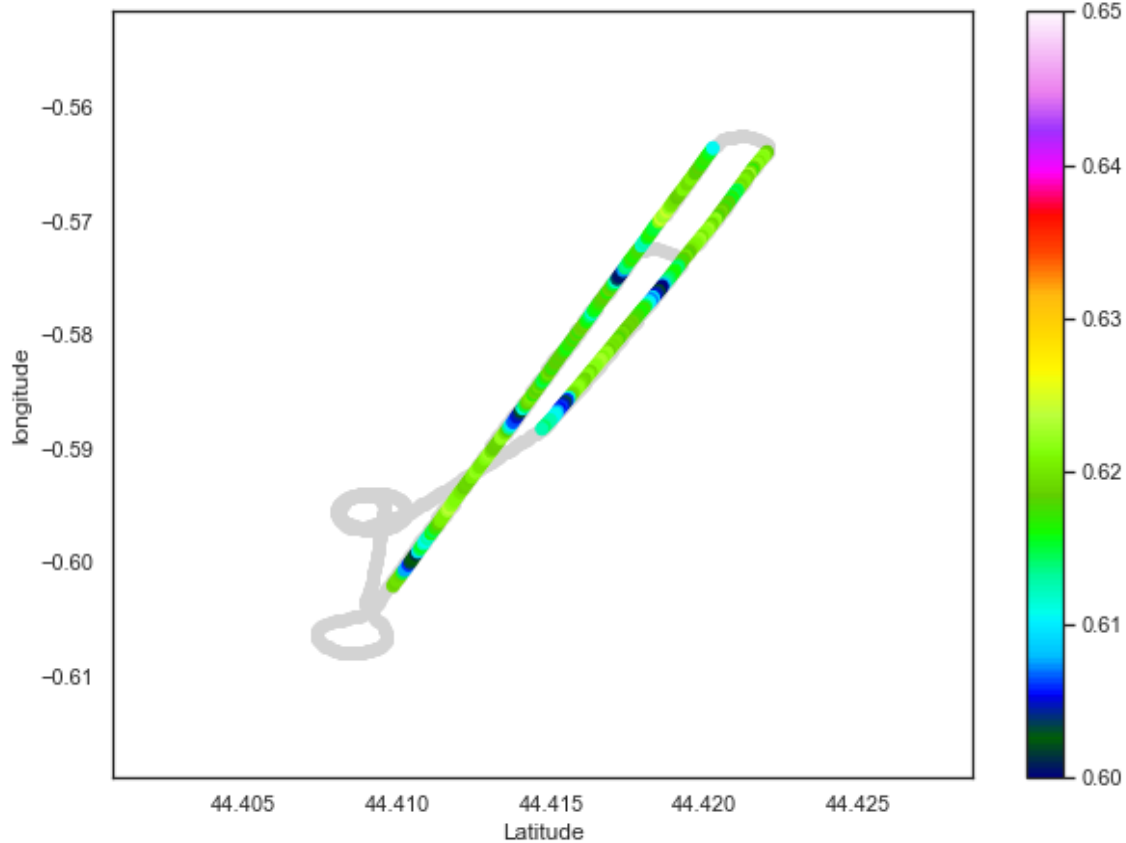


X6-08 2020-03-08 03:45
Flight 3 Comparaison 4 passages 220m

Infrared



X6-08 2020-03-08 03:45 Flight 3
A/R 220m IR



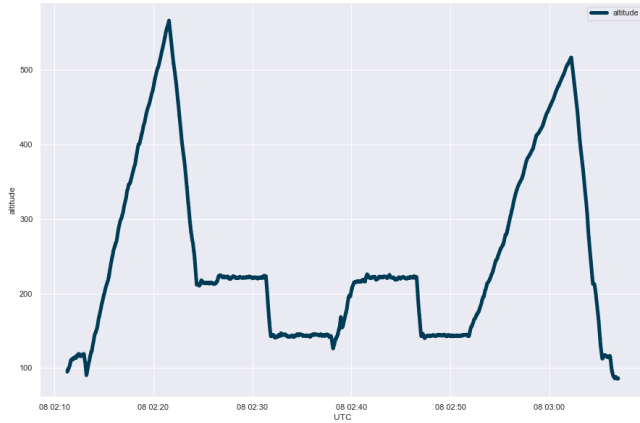
Profiles

POI 14

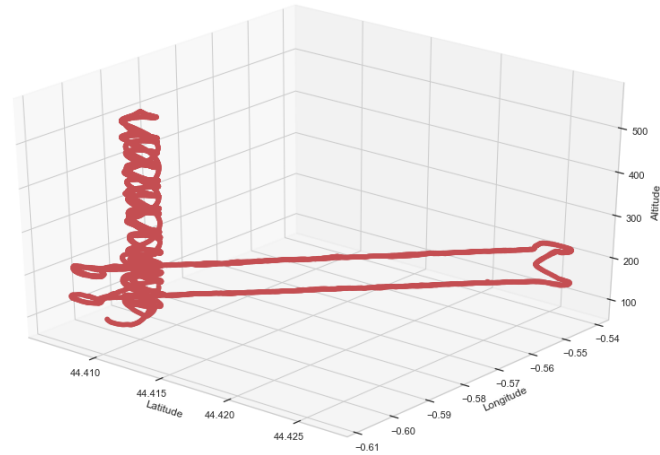
Flight 2 (01h50)

X6-11

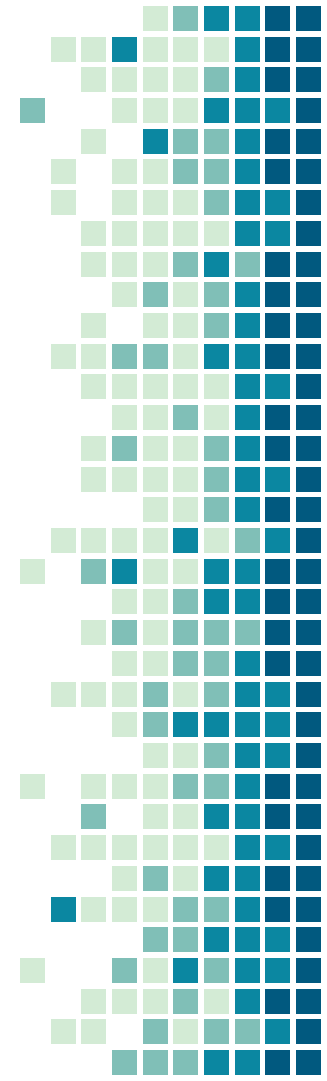
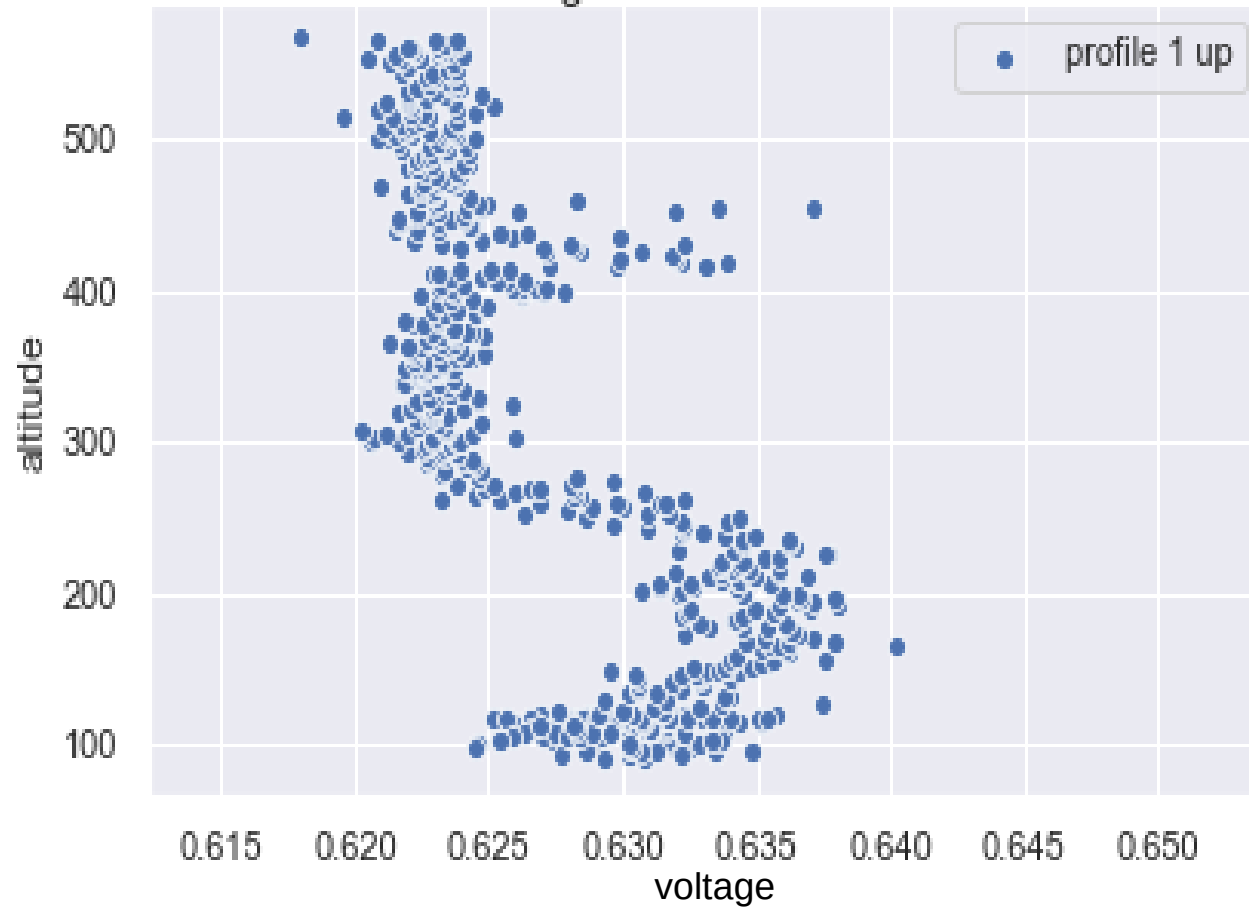
X6-11 2020-03-08 02:01
Flight 2



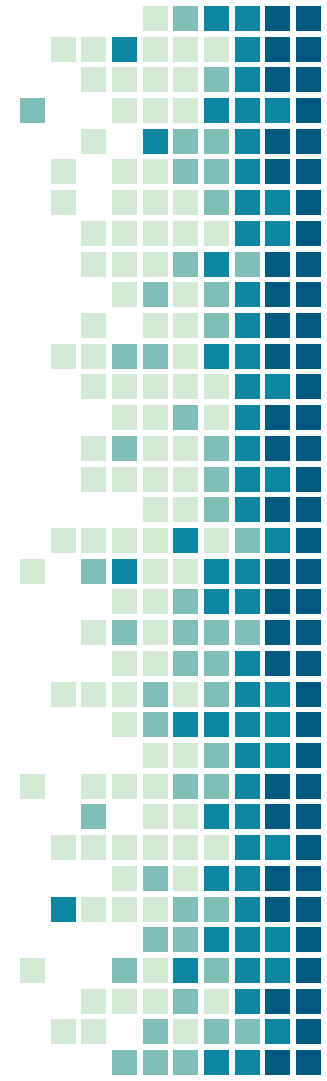
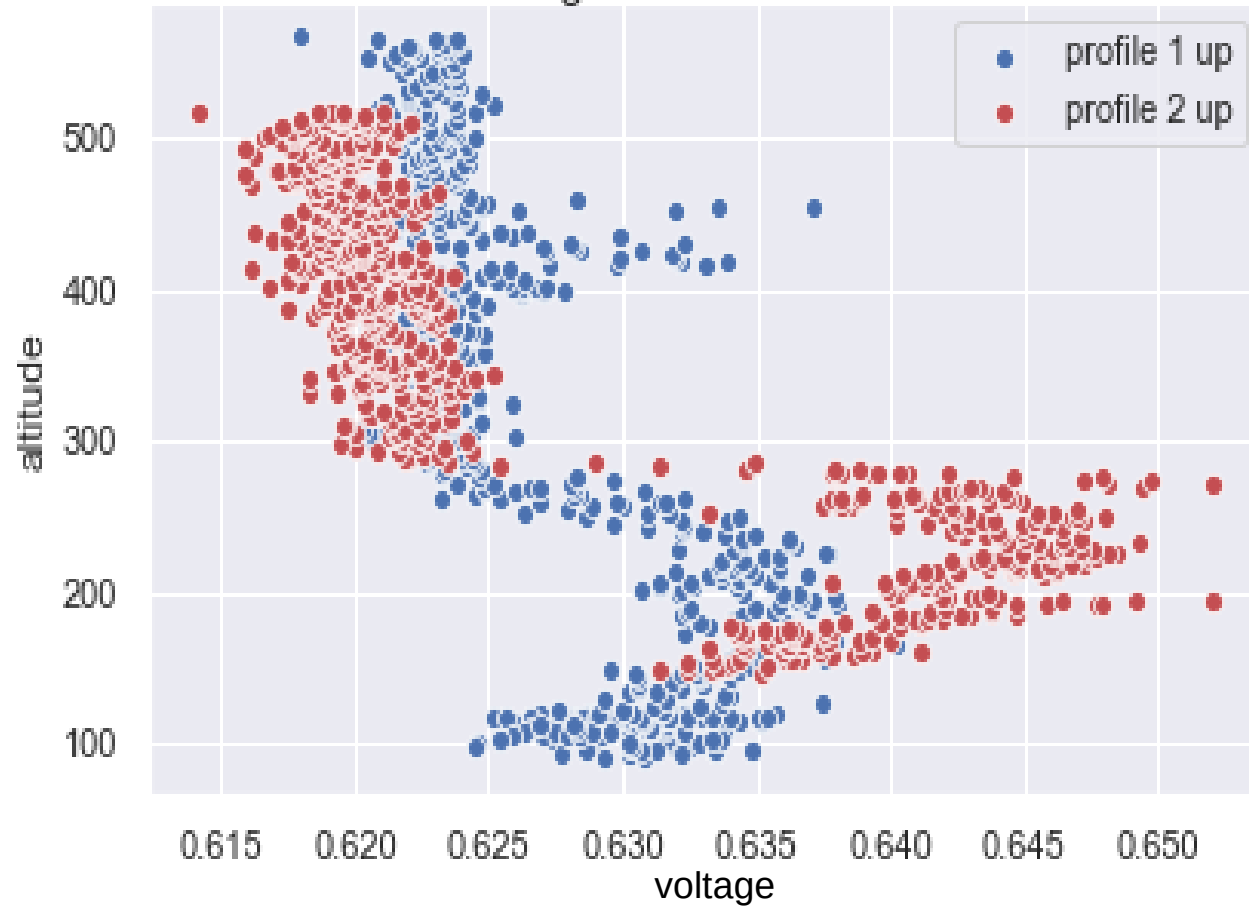
X6-11 2020-03-08 02:01
Flight 2
Trajectoire



X6-11 2020-03-08 02:01
flight 2 canal IR



X6-11 2020-03-08 02:01
flight 2 canal IR



Thanks for your attention

