

# Anthropophonie de JET SKI

Courses de COGOLIN 21 et 22 mai 2022

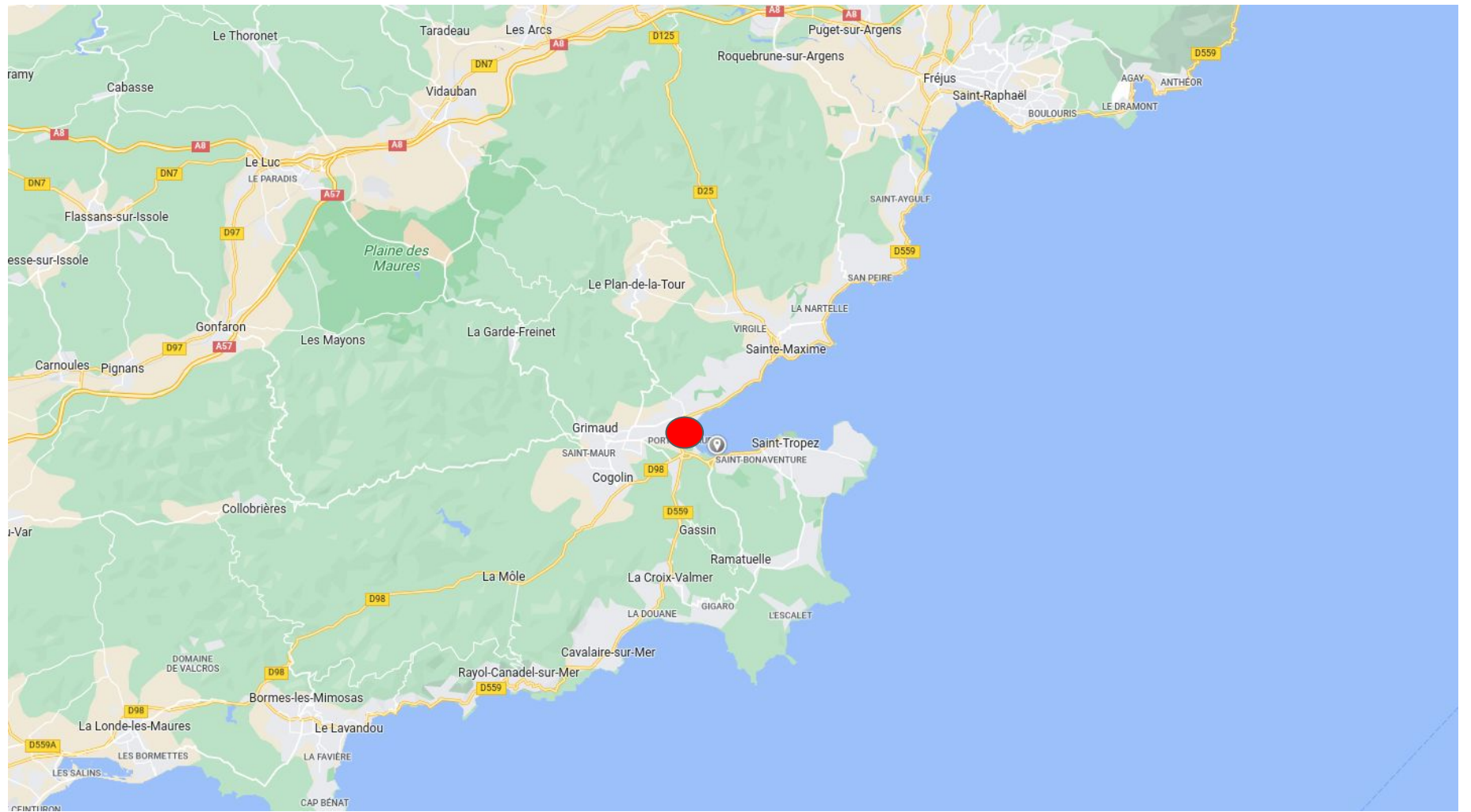
Maxence Ferrari, Hervé Glotin

Protocole avec Pascale Giraudet, Nathalie Prevot et Jean-Marc Prevot, Jean-Guillem Destremau

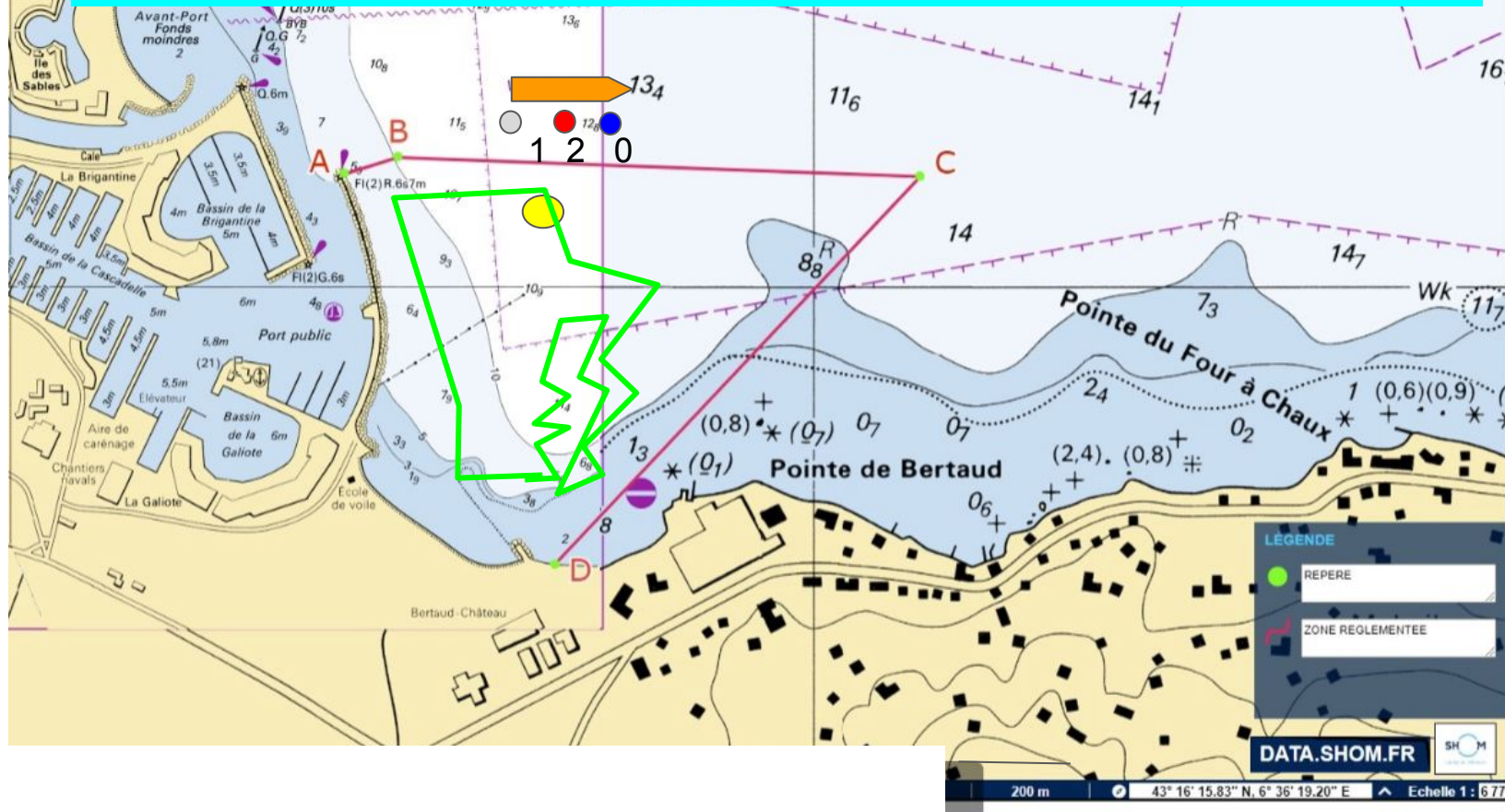
DYNI LIS CNRS UTLN, Chaire IA ADSIL, Parc National de Port-Cros  
Etude PELAGOS "Cétacés en milieu anthropisé / contrat 10/2021

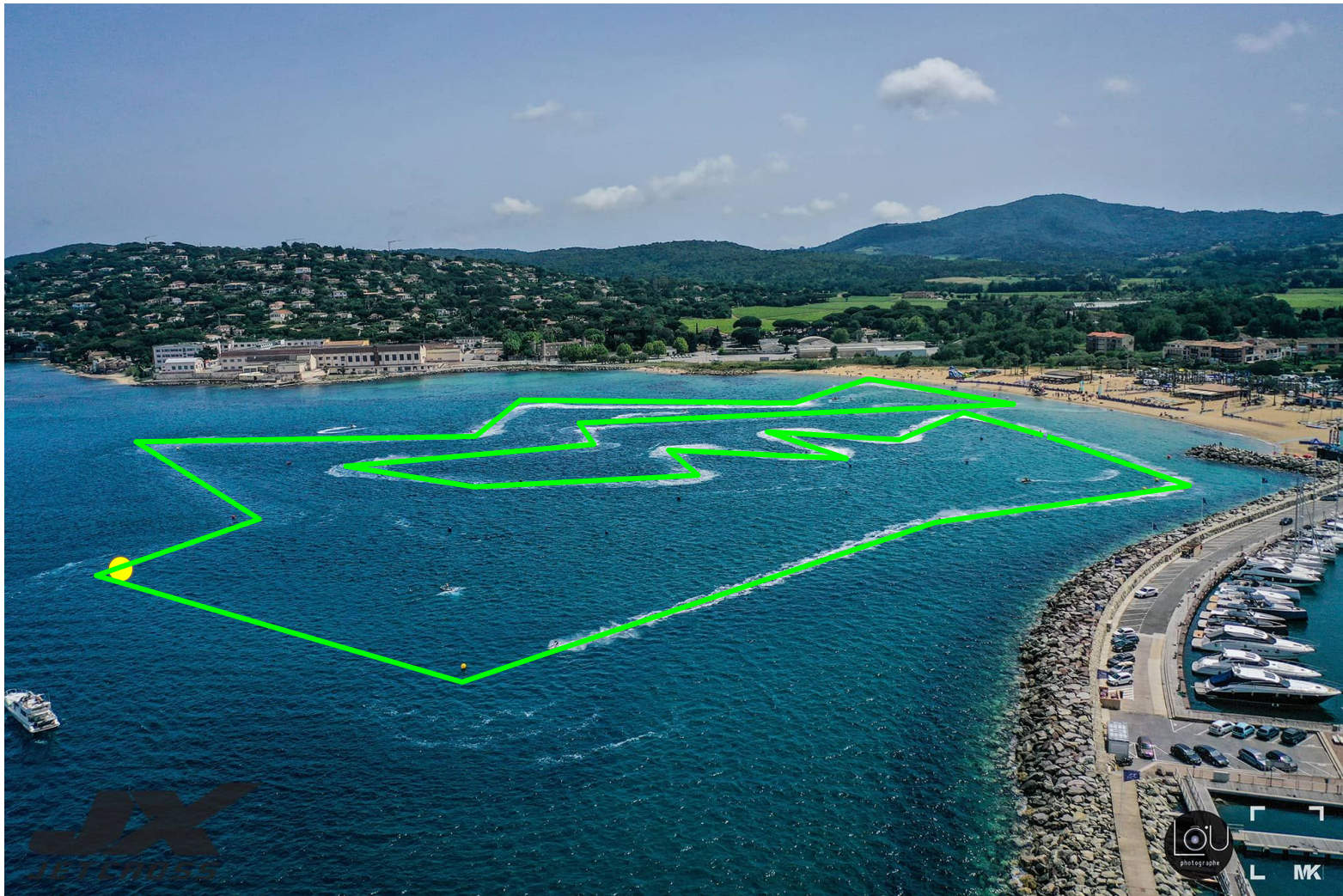


CNS Pelagos oct. 2022



Antenne triphonique (voies 0,1,2) ~linéaire de 12m  
cable par -5m, à tribord du bateau ancré devant le passage de la course (parcours vert)





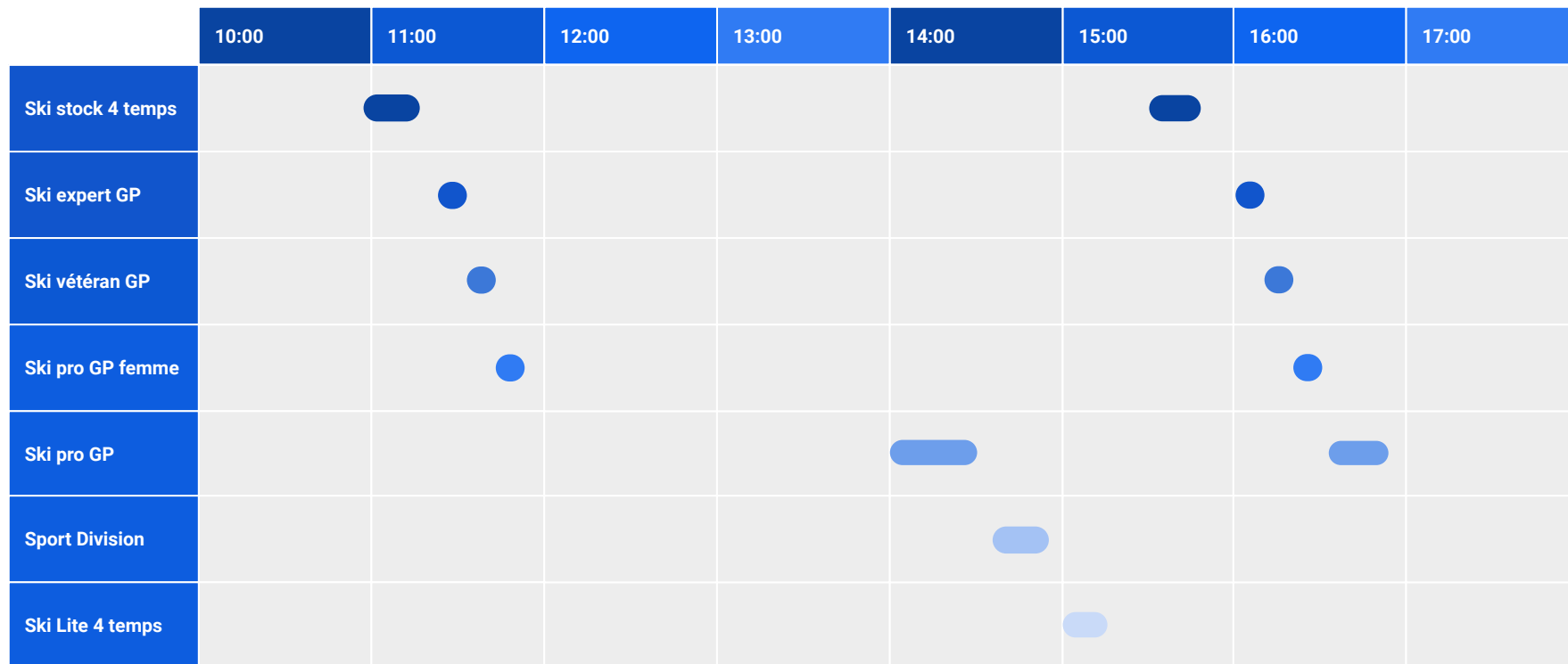
Vue du bateau le 21 juin





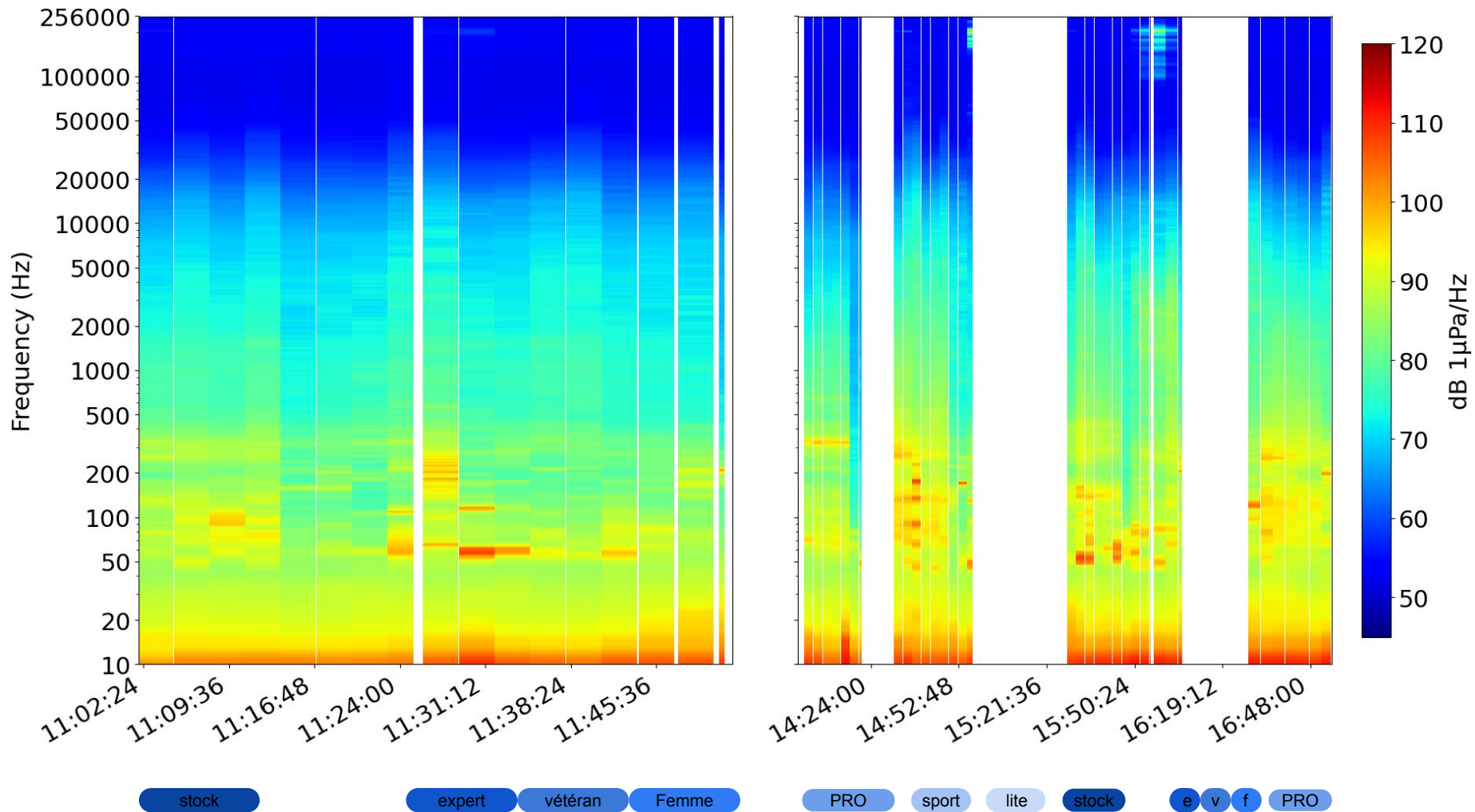
[http://sabiiod.lis-lab.fr/pub/jet\\_ski.mp4](http://sabiiod.lis-lab.fr/pub/jet_ski.mp4)

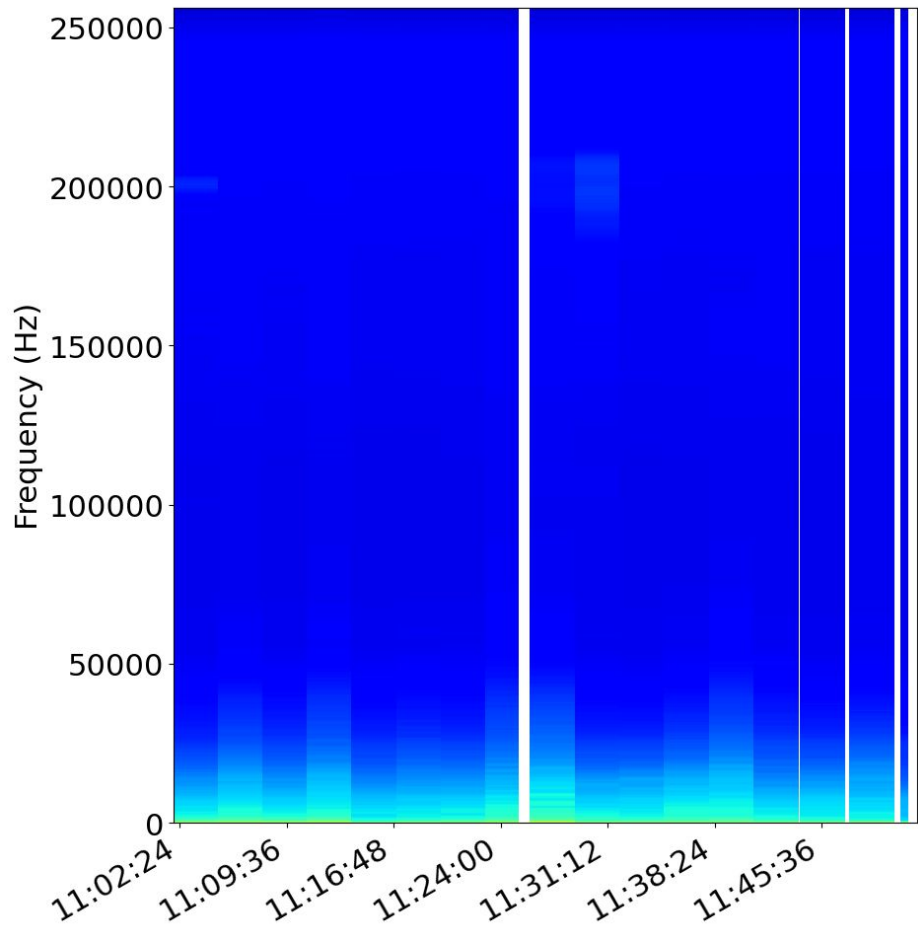
# Timeline of the event during the sunday





Median DSP



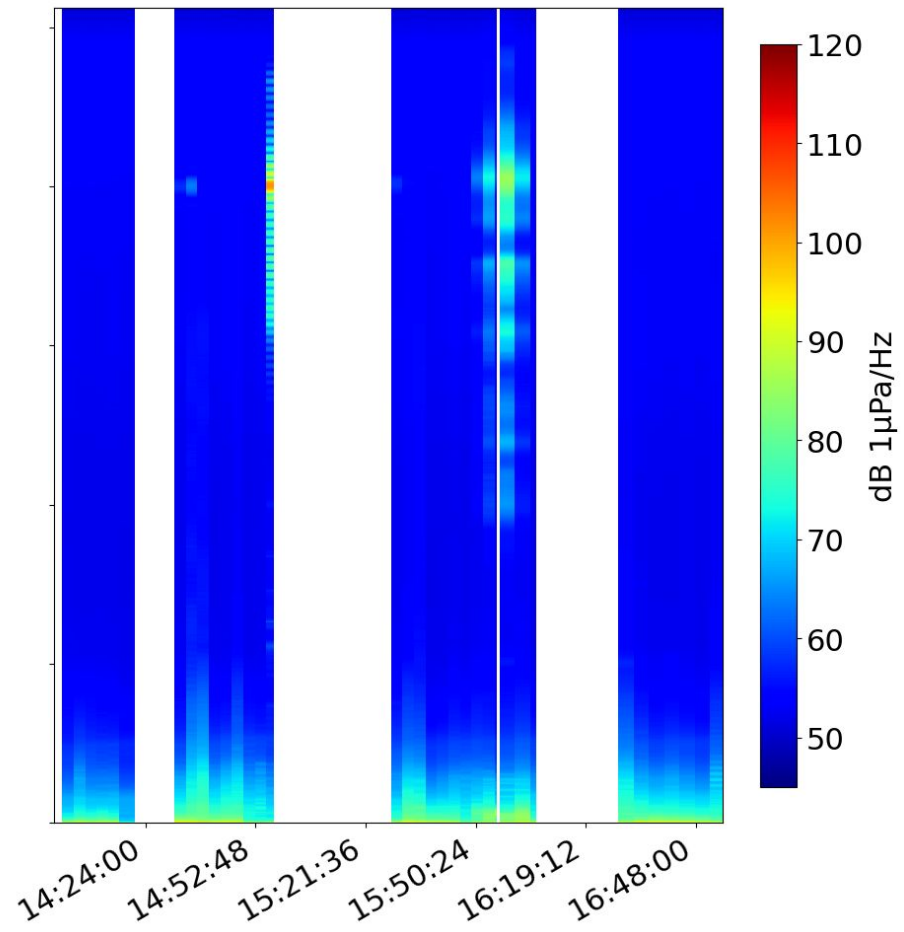


stock

expert

vétéran

Femme



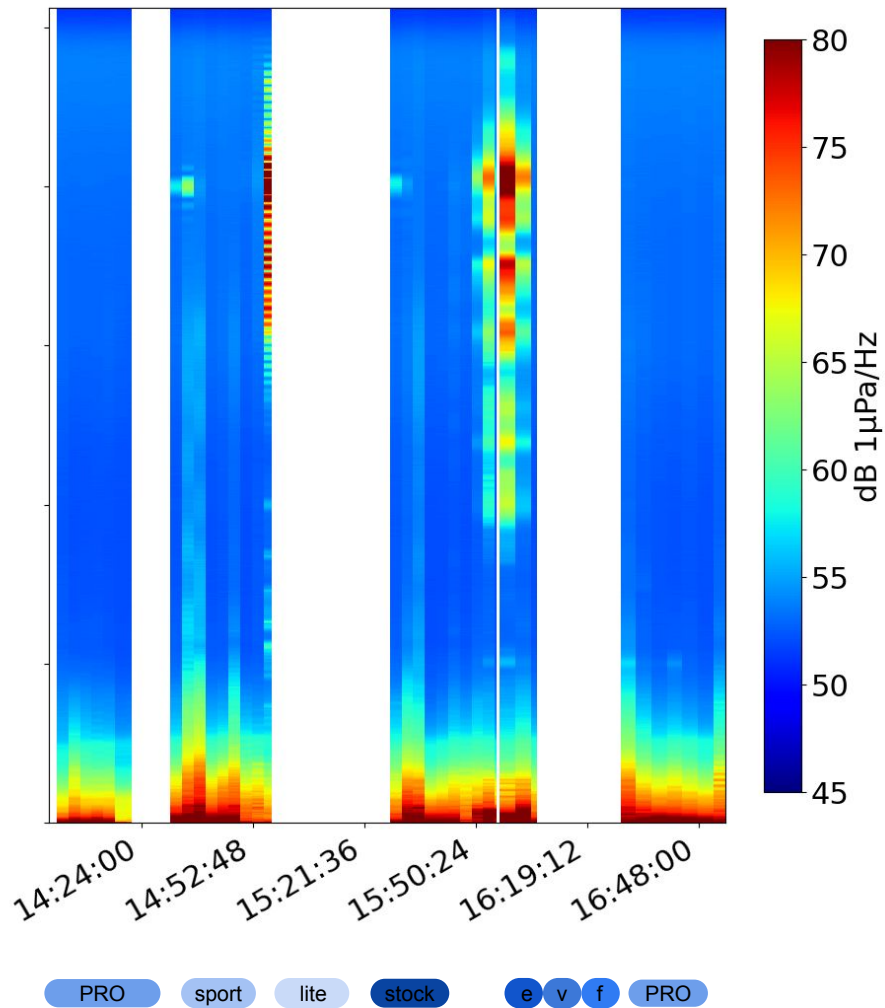
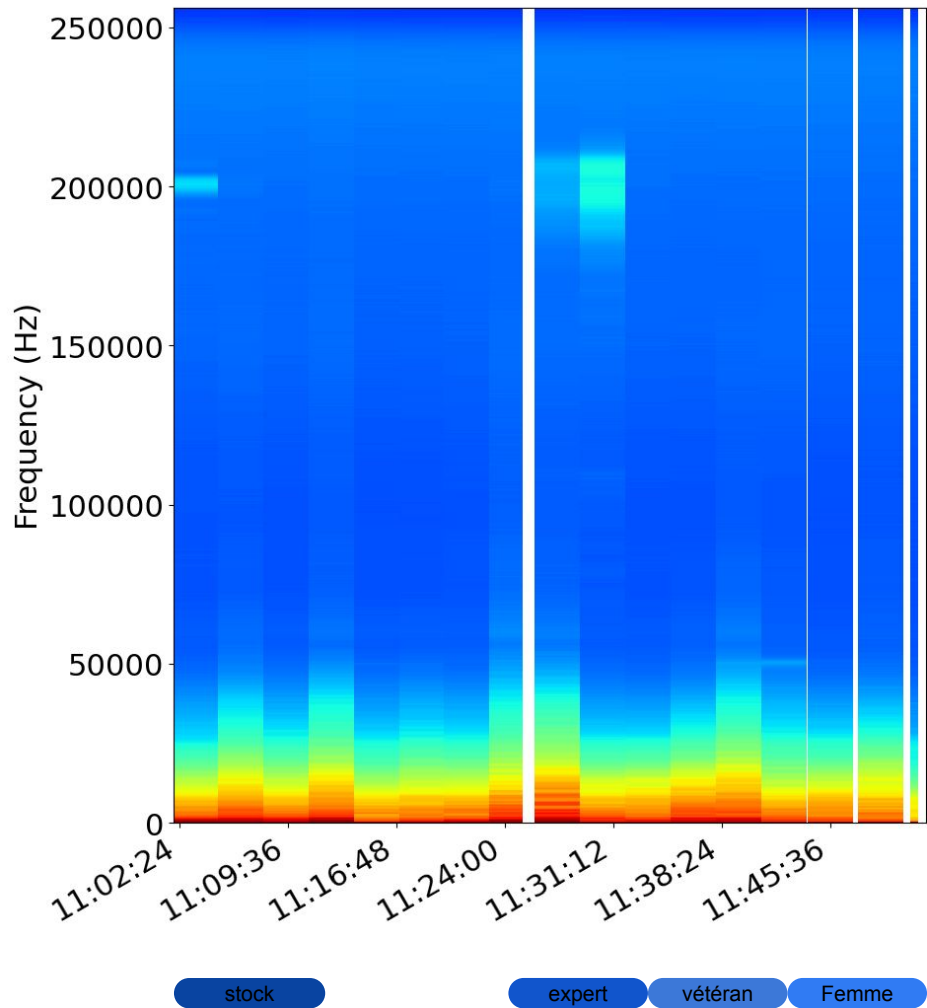
PRO

sport

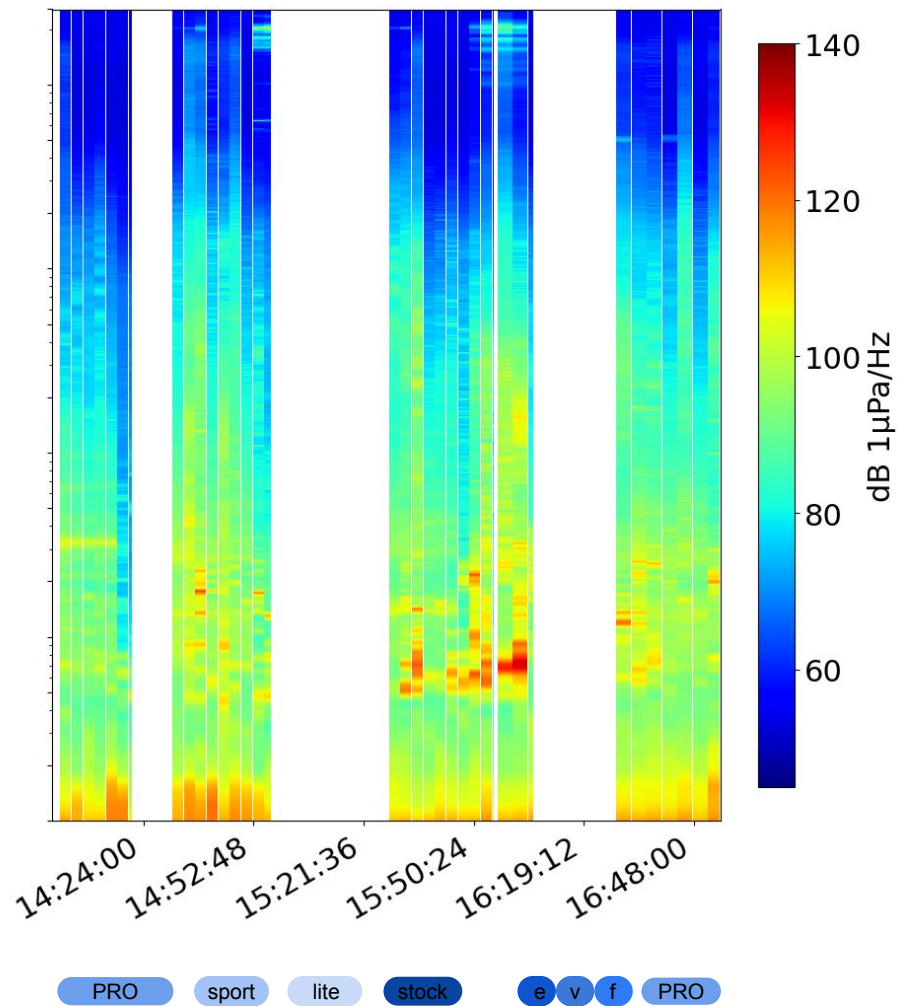
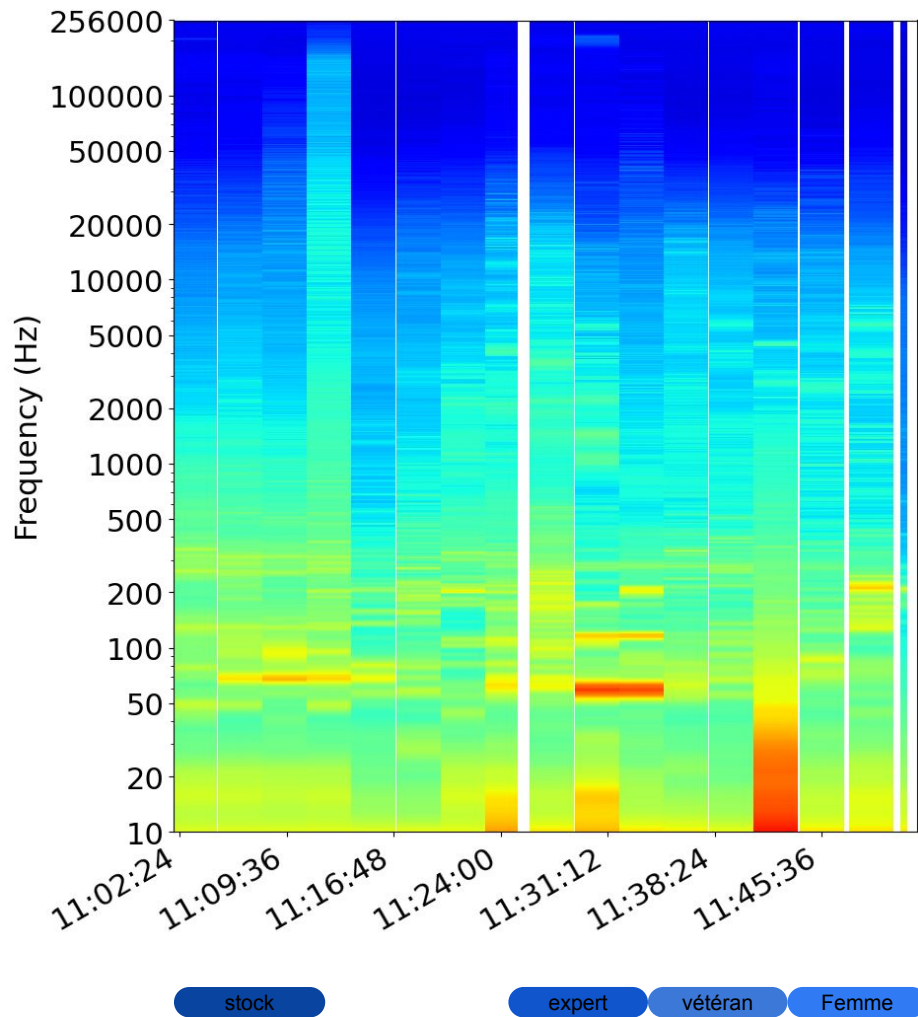
lite

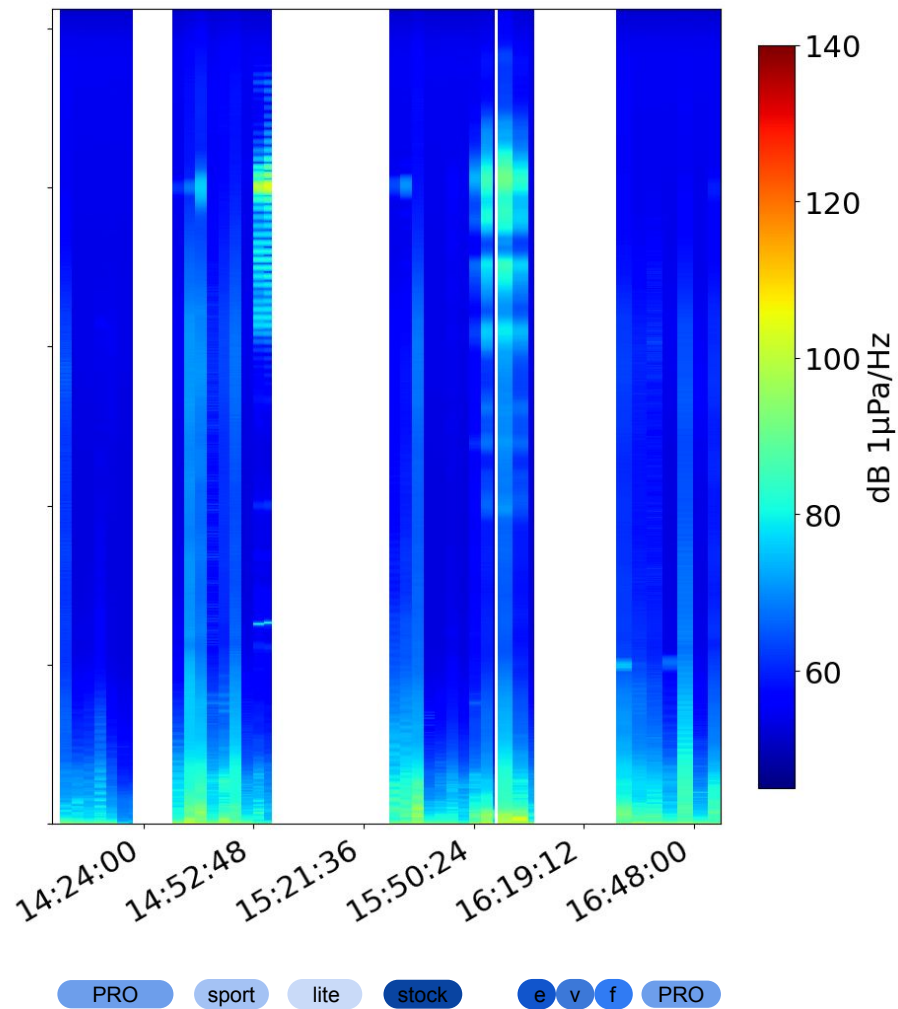
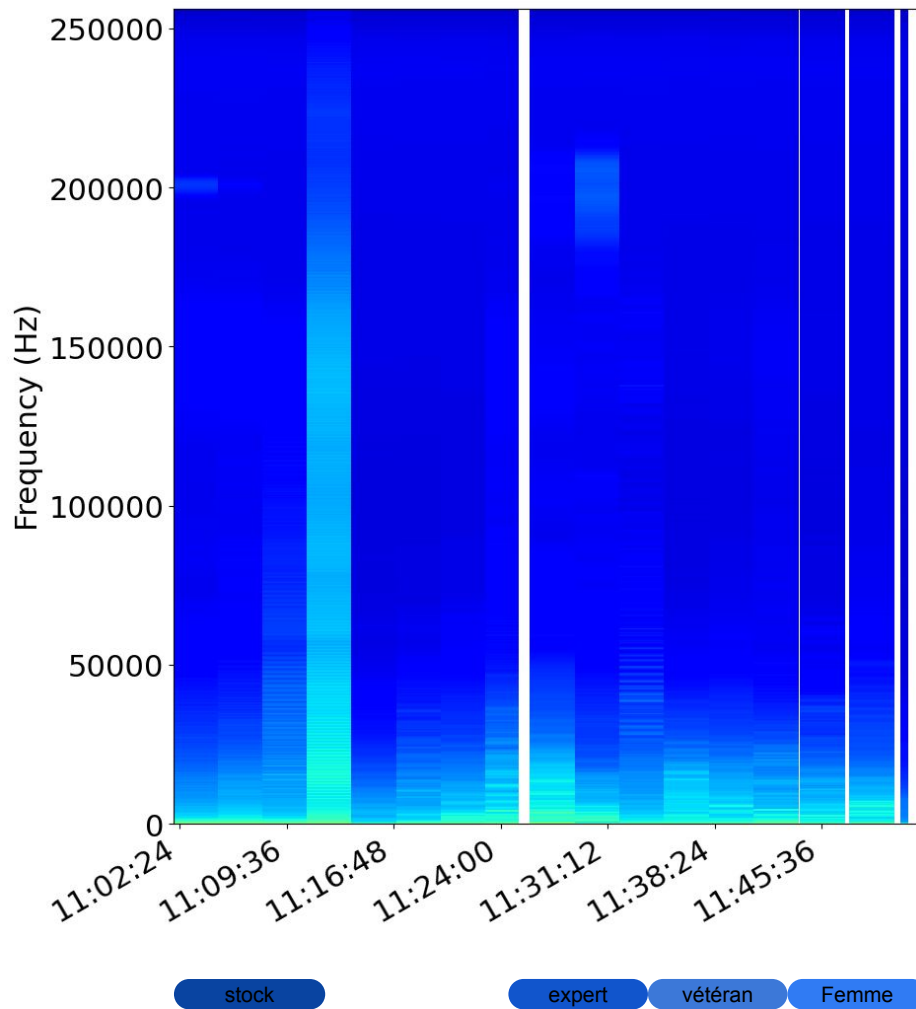
stock

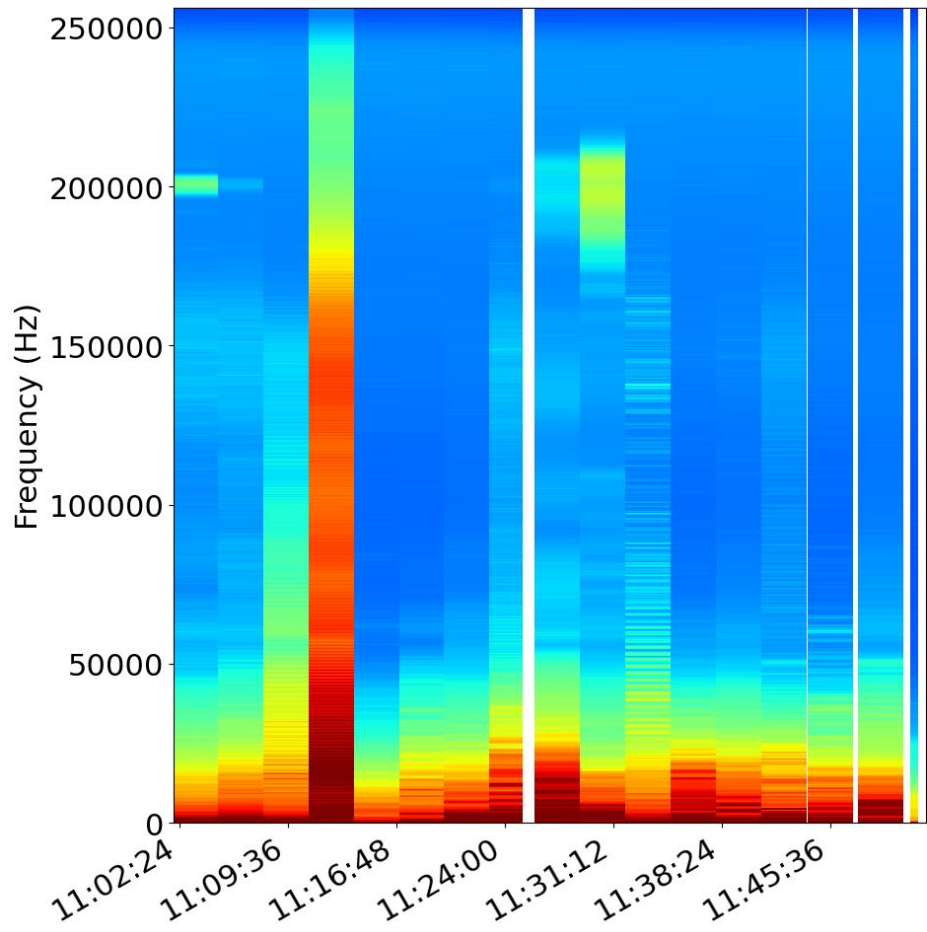
e v f PRO



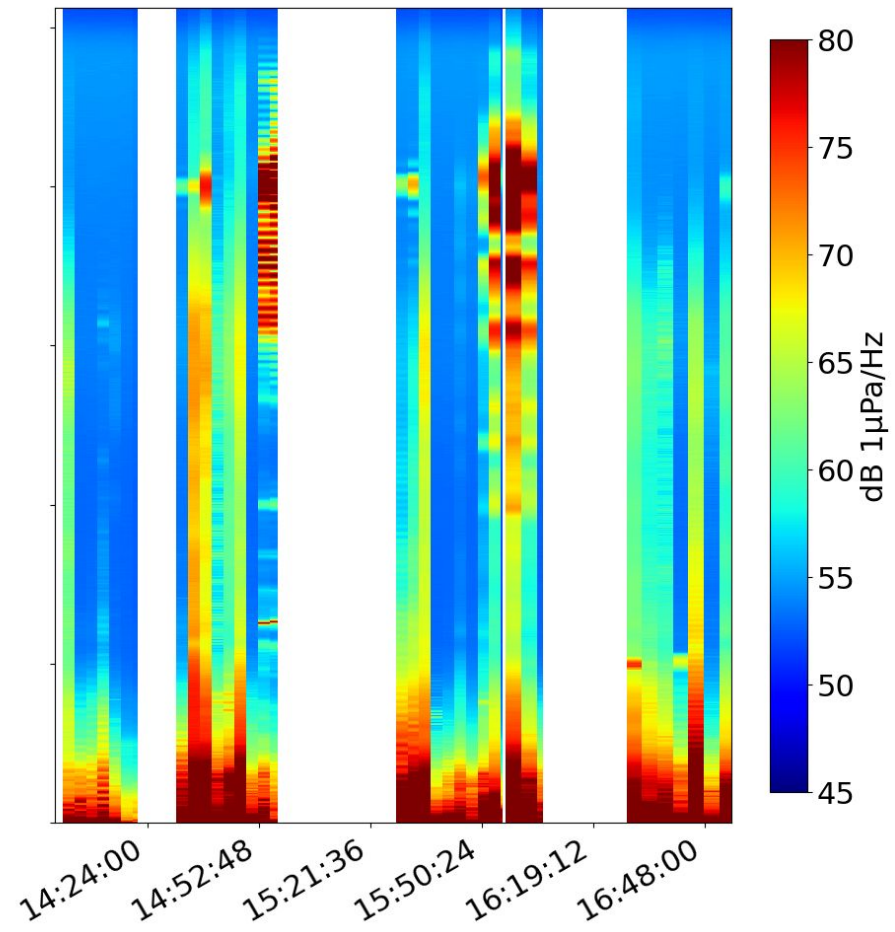
Maximum DSP



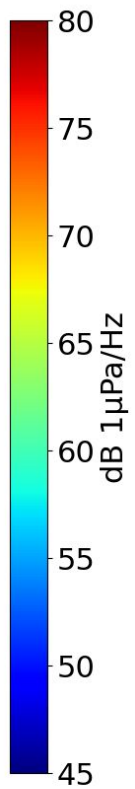




stock expert vétéran Femme



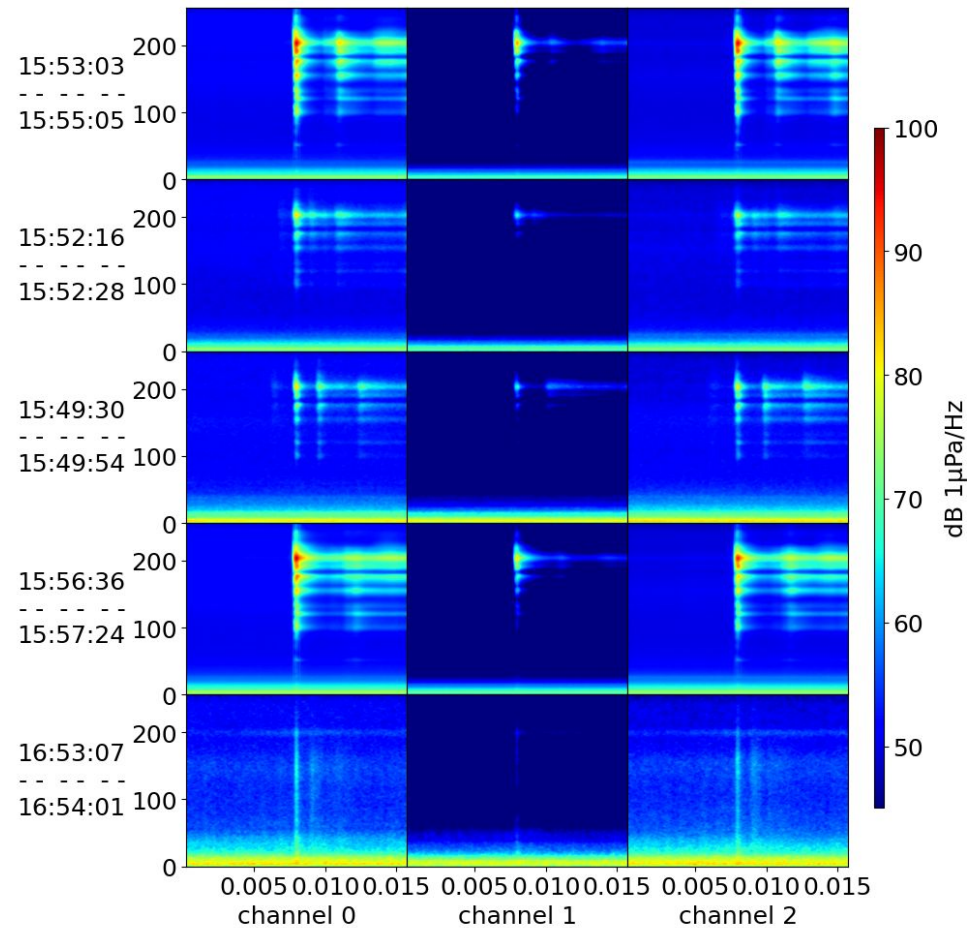
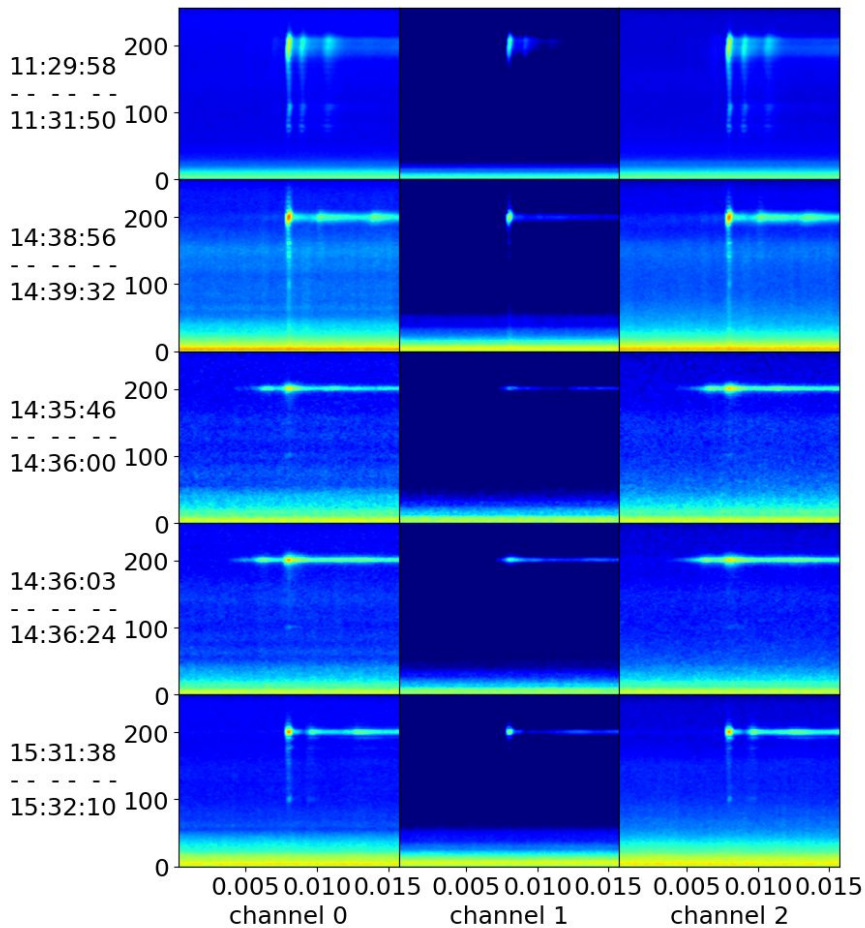
PRO sport lite stock e v f PRO



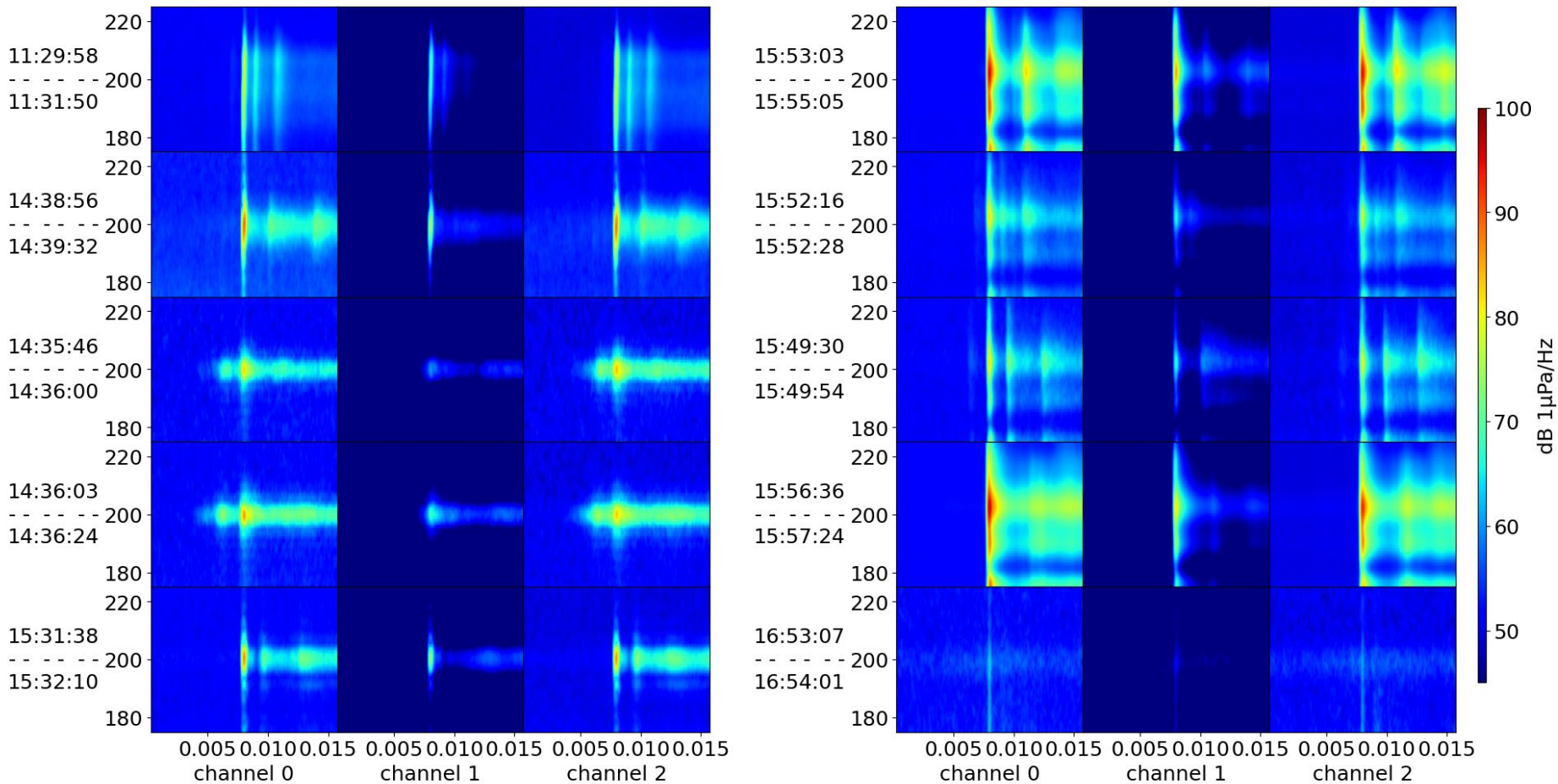


200kHz peaks

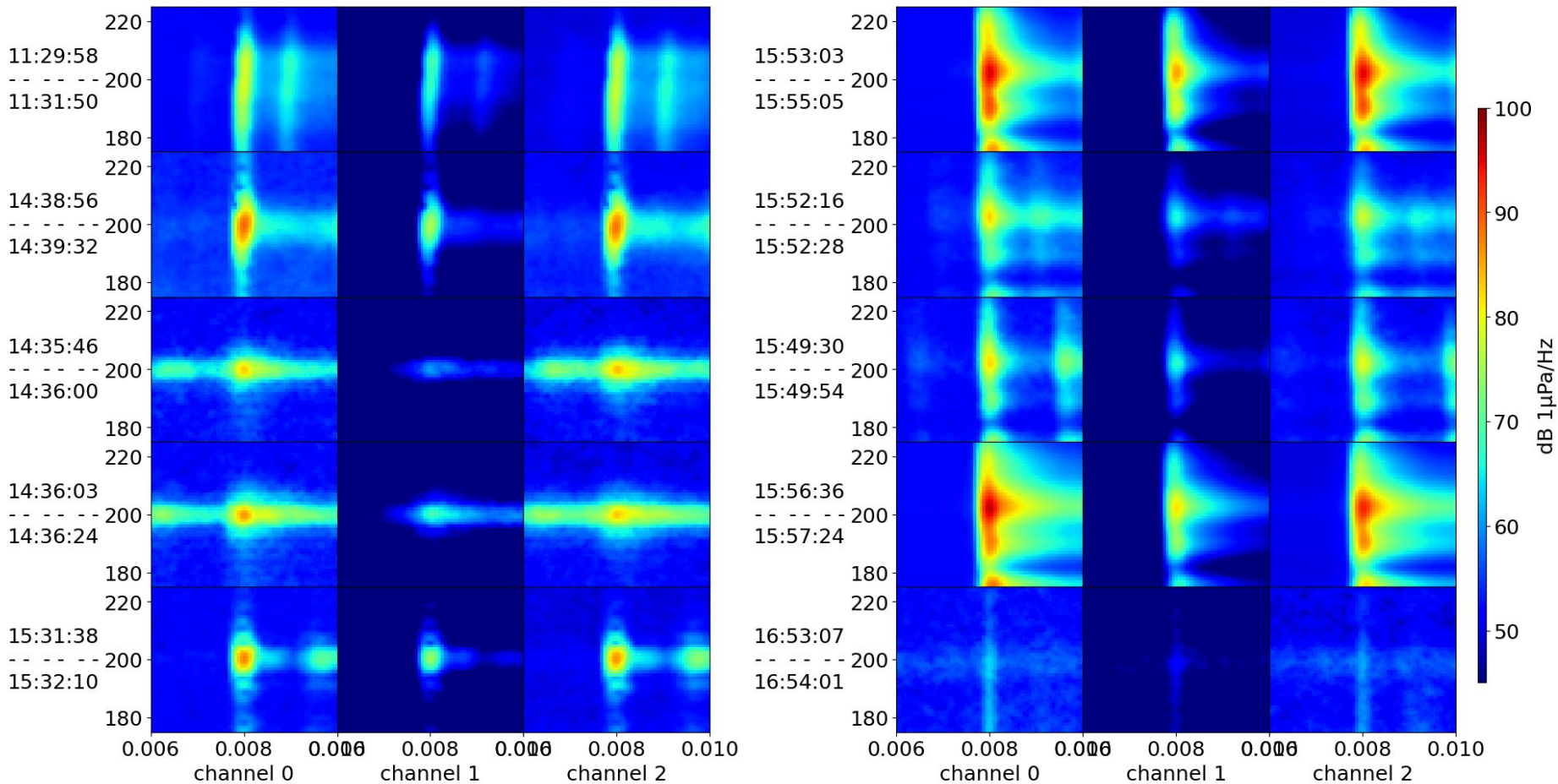
# Demonstration of High level dB emission from a jet ski



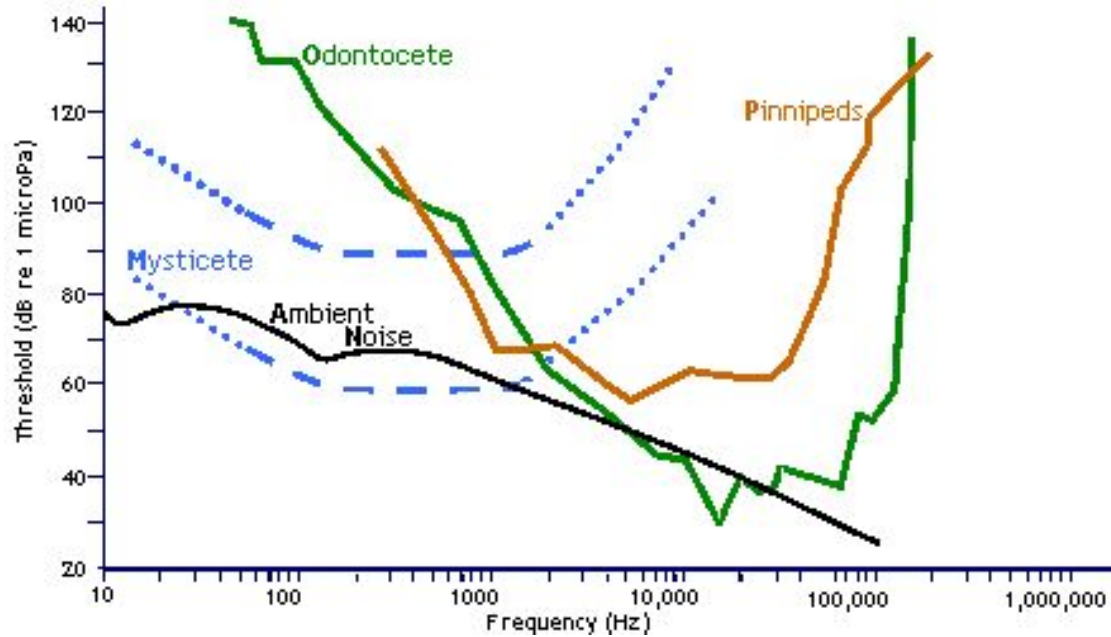
# Demonstration of High level dB emission from a jet ski



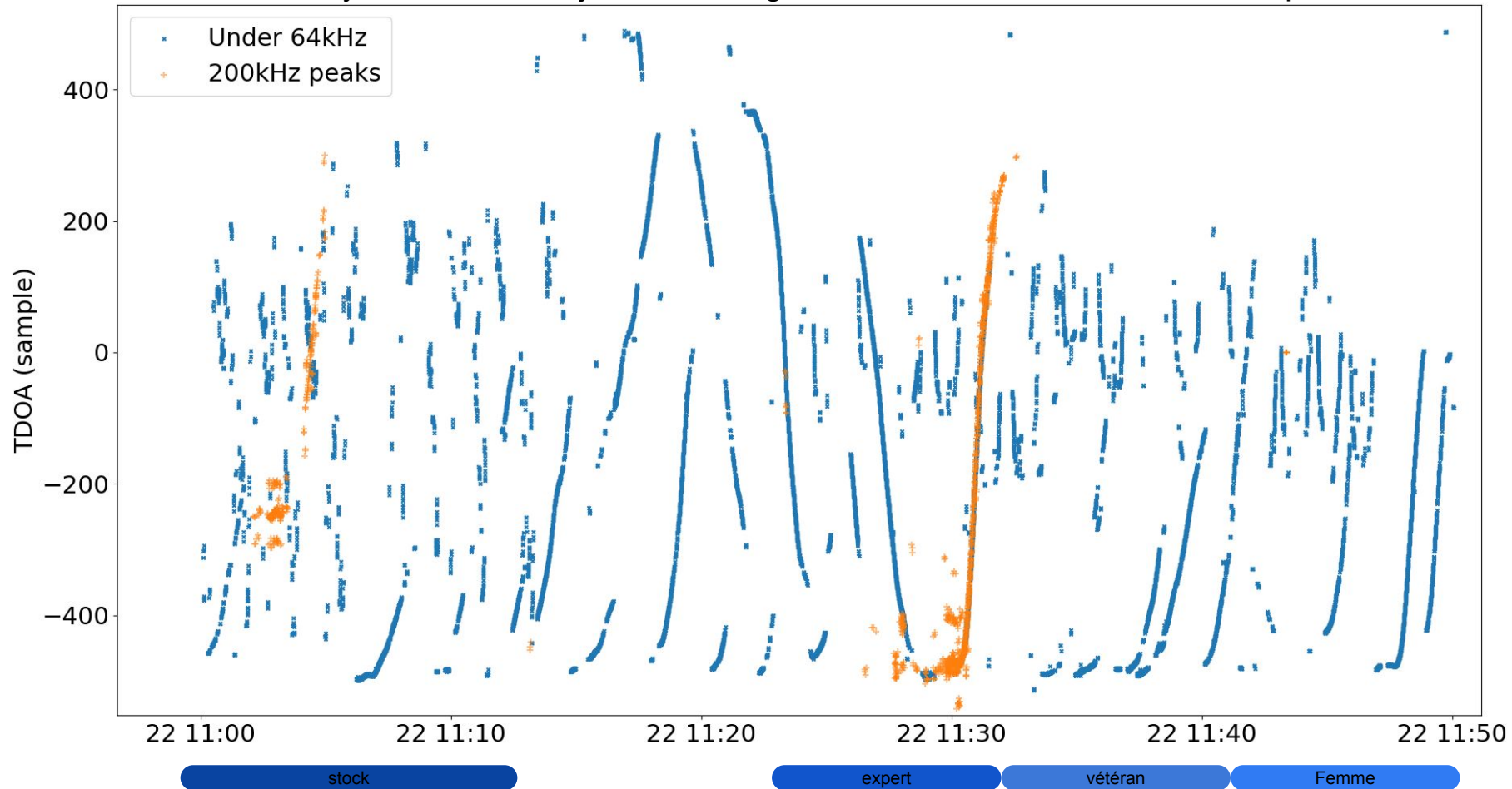
# Demonstration of High level dB emission from a jet ski

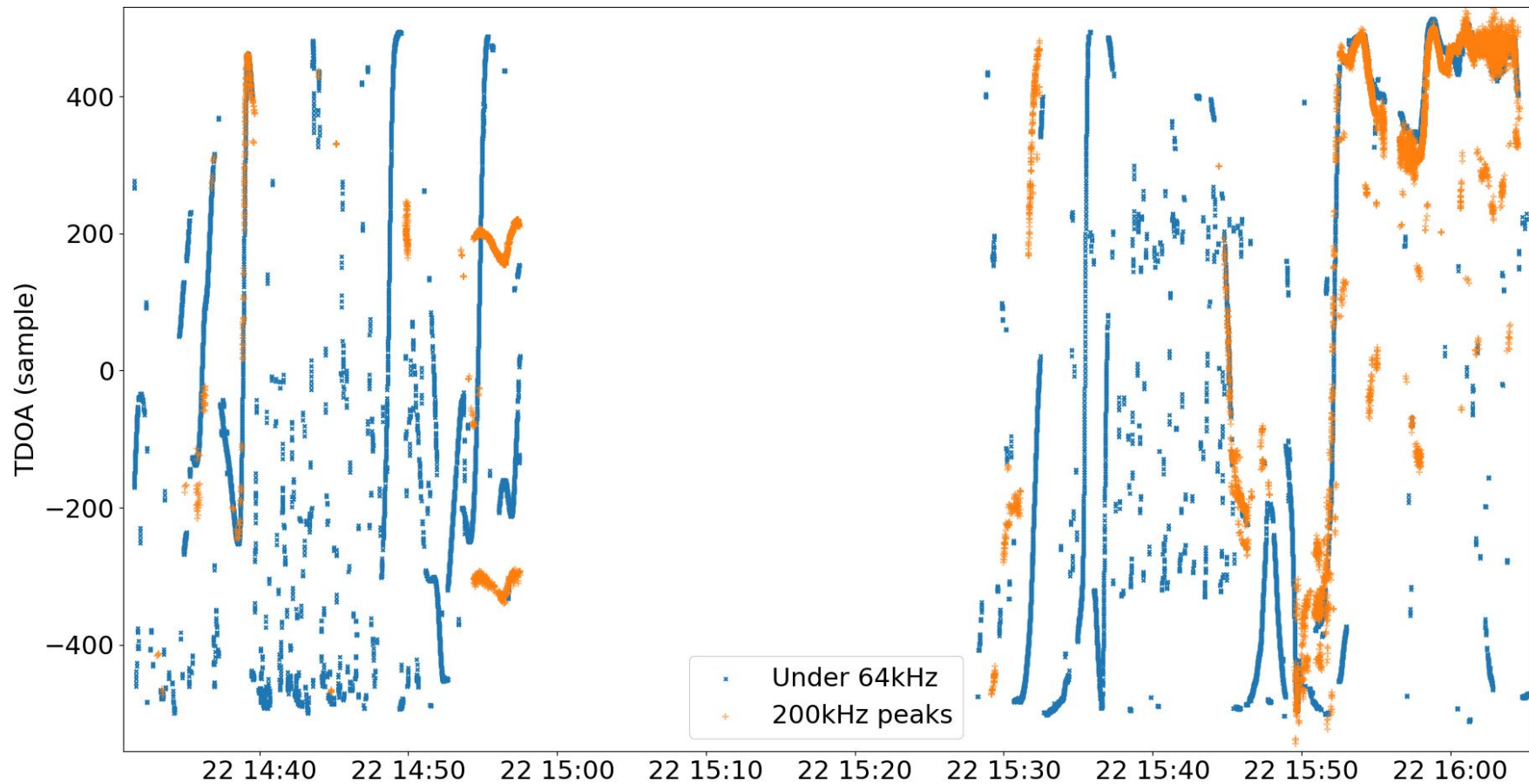


# Hearing in cetaceans



Time delay of arrival of the jet ski showing we track them, some have 200 kHz peaks



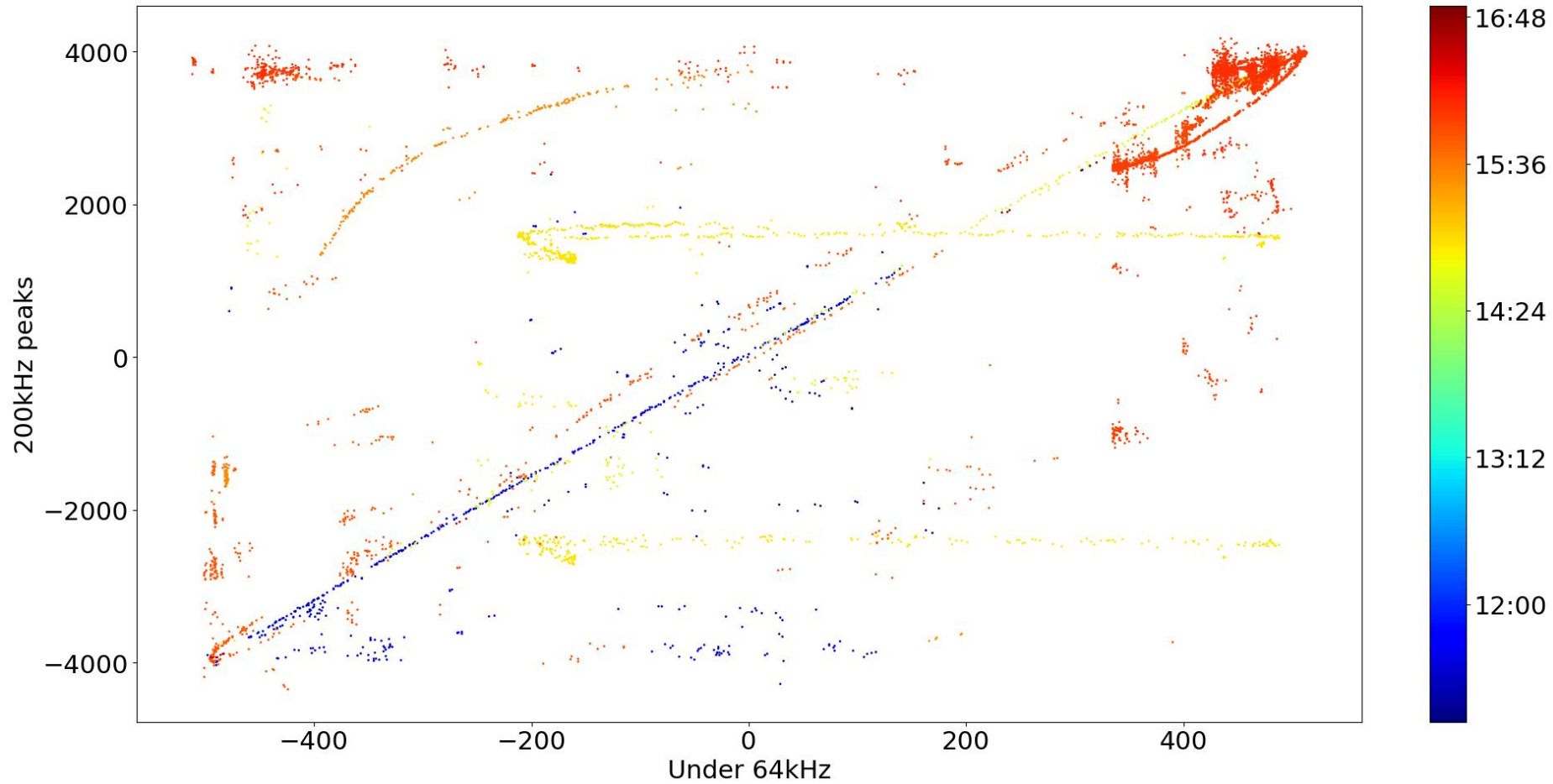


sport

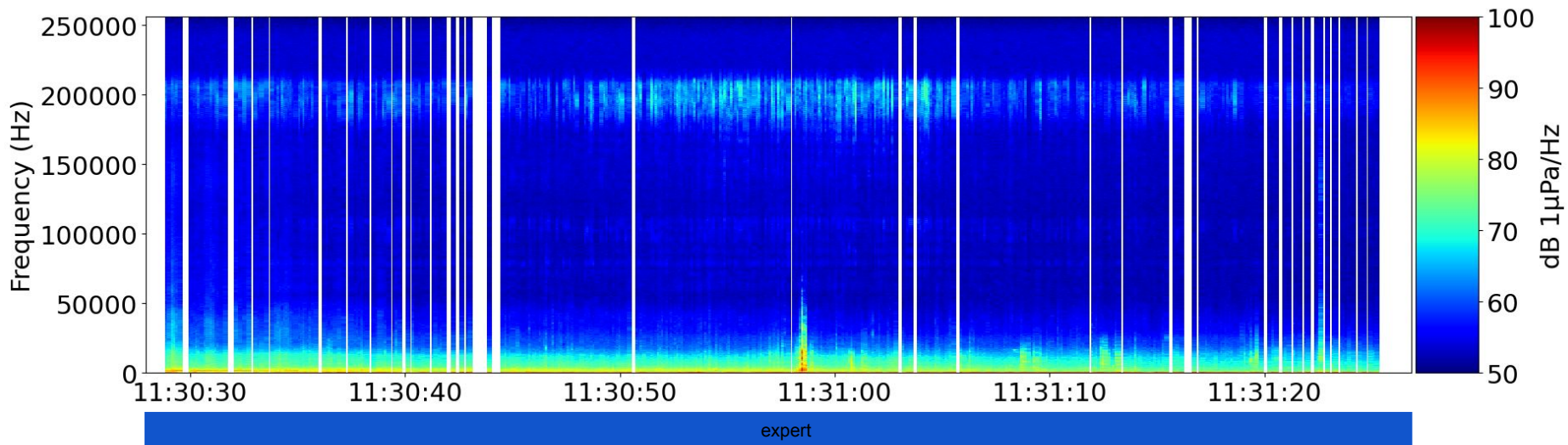
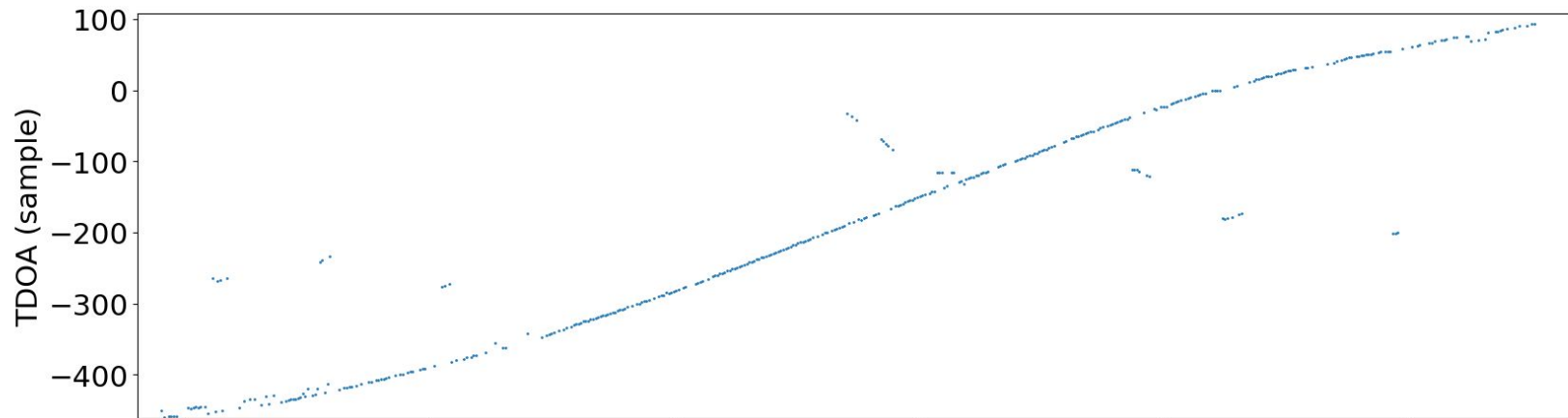
lite

stock

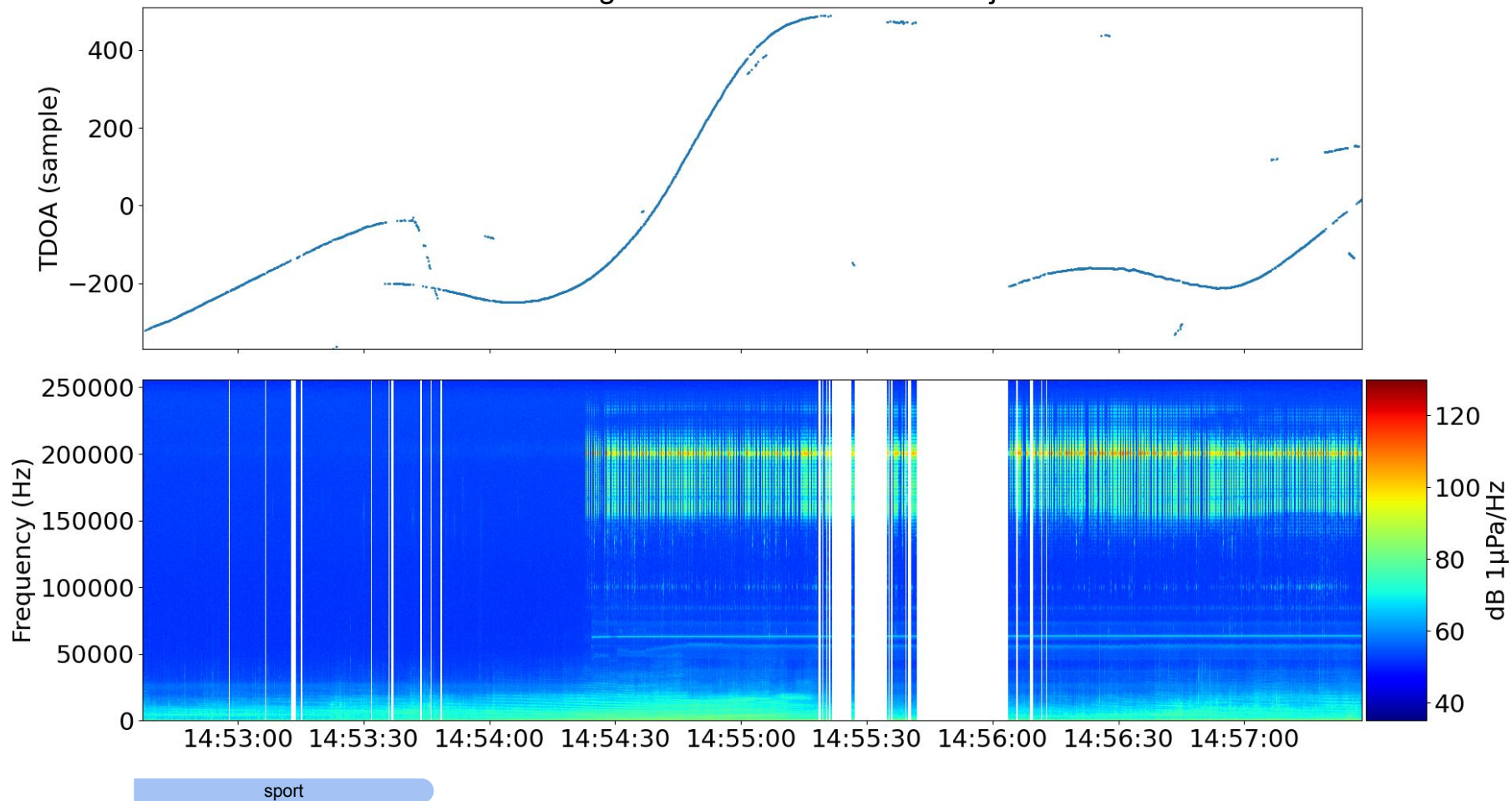
expert



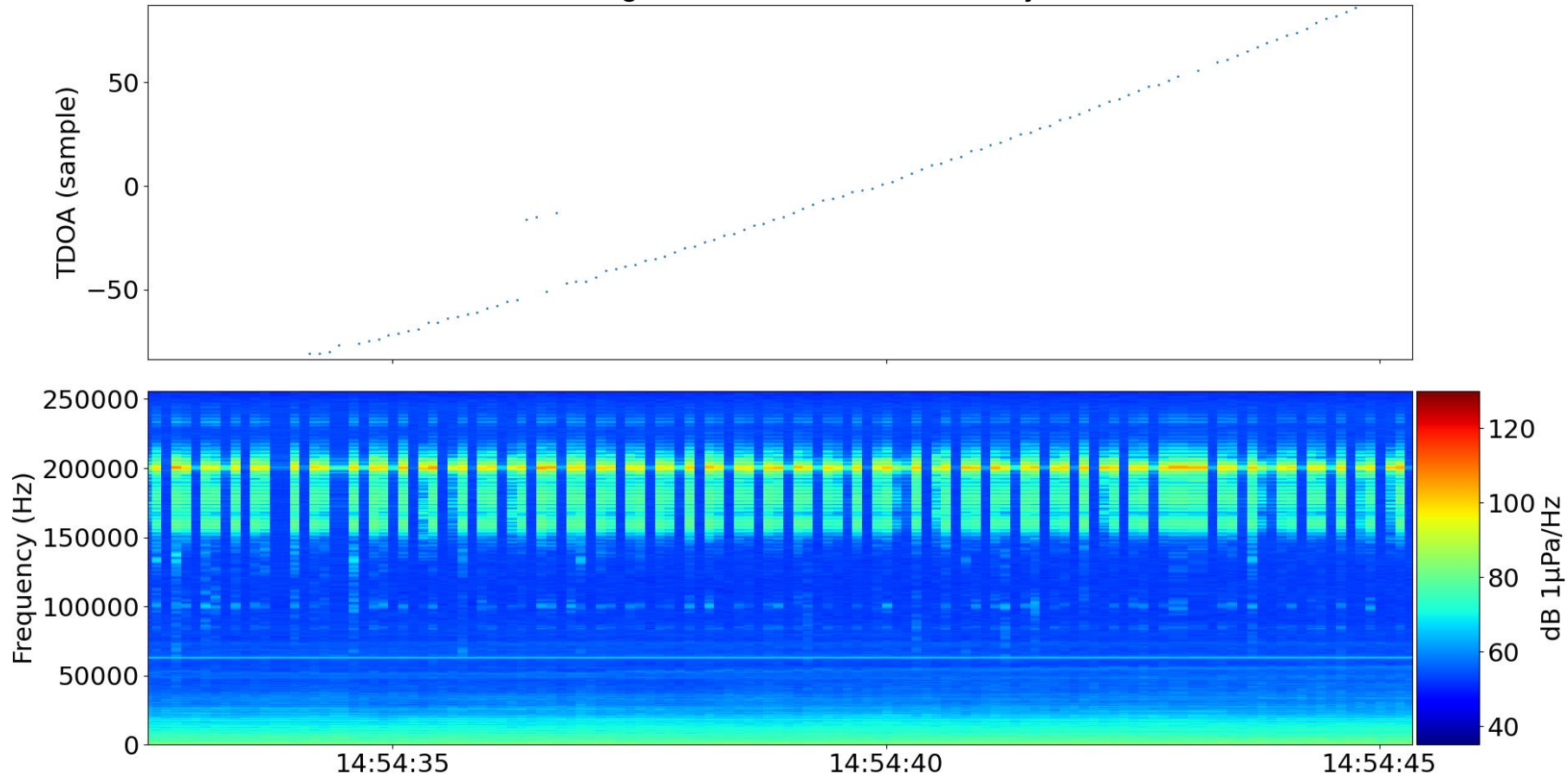


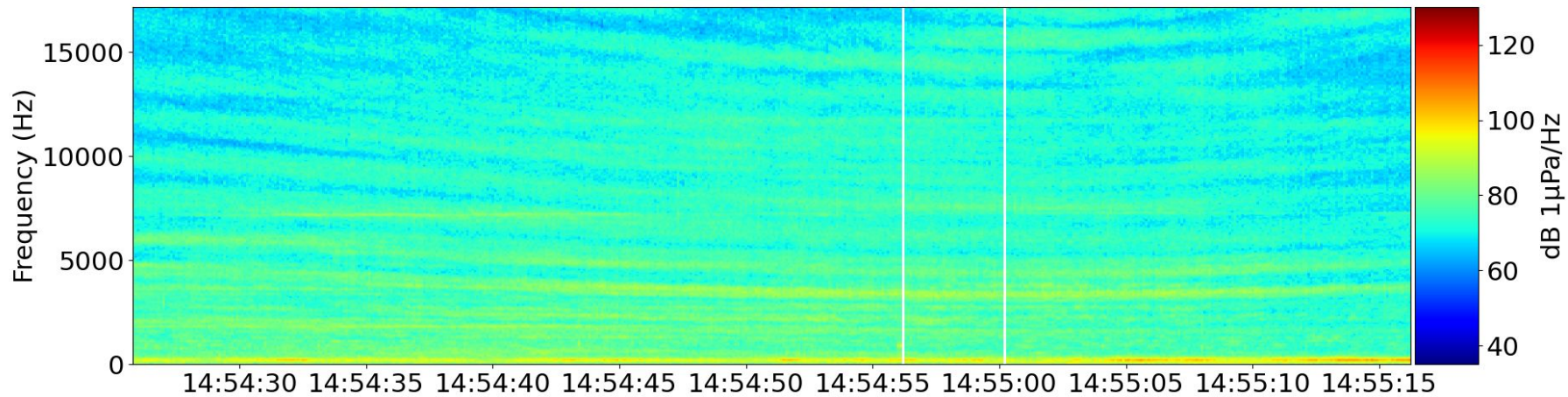
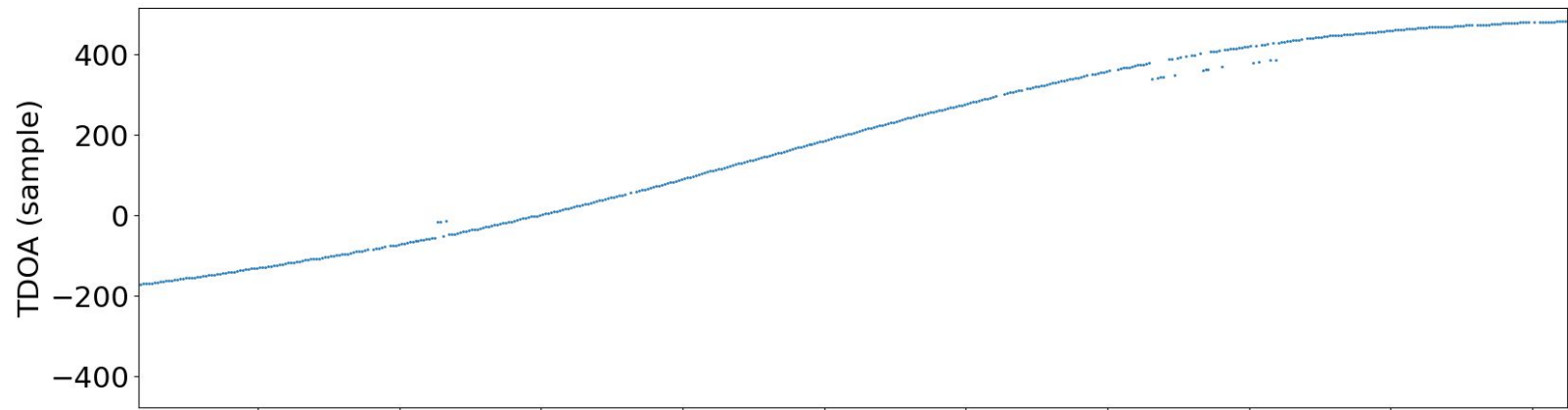


Demonstration of High level dB emission from a jet ski

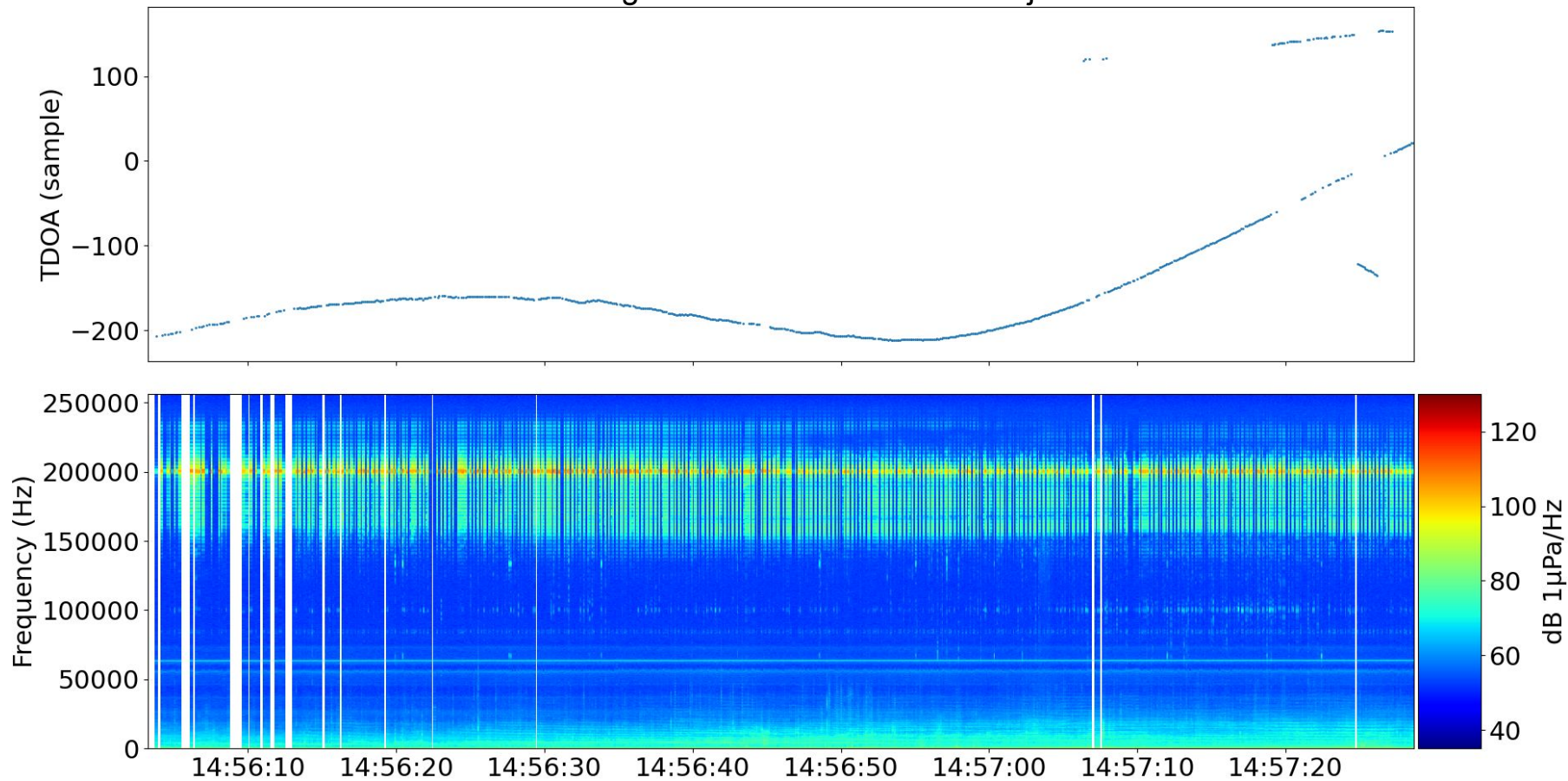


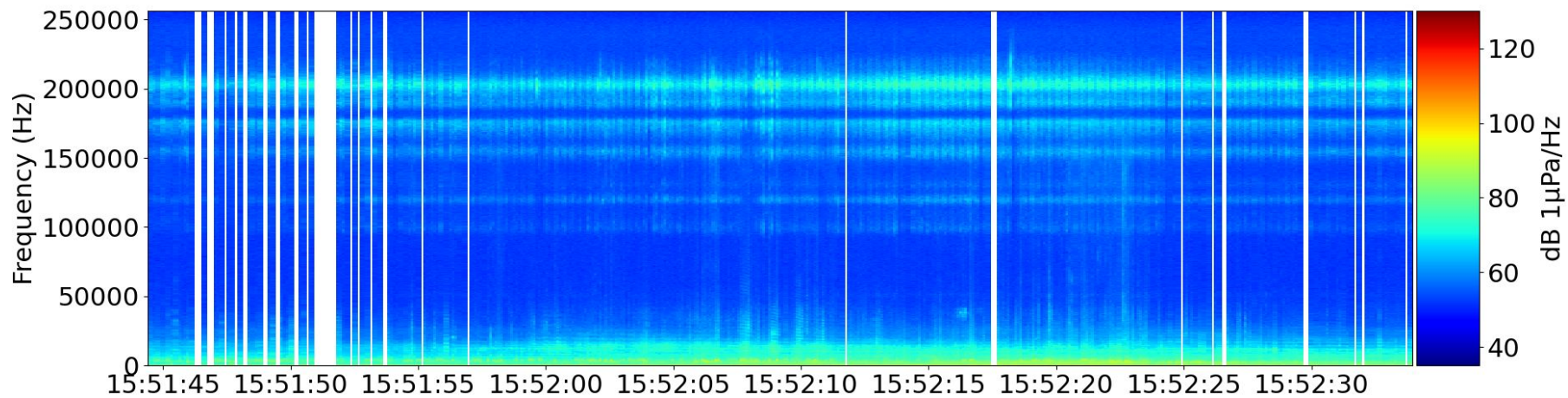
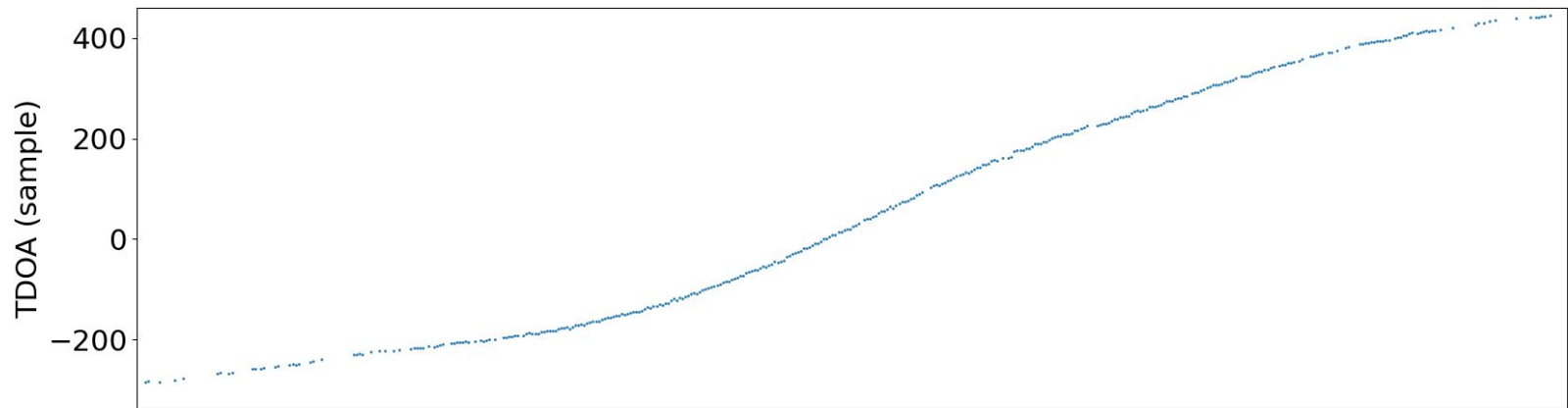
Demonstration of High level dB emission from a jet ski

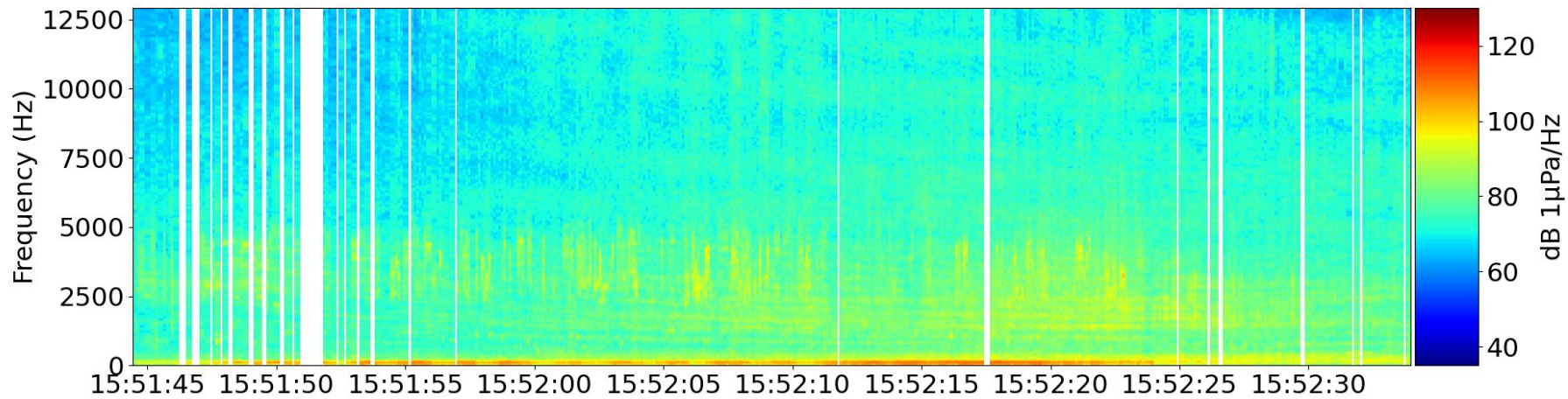
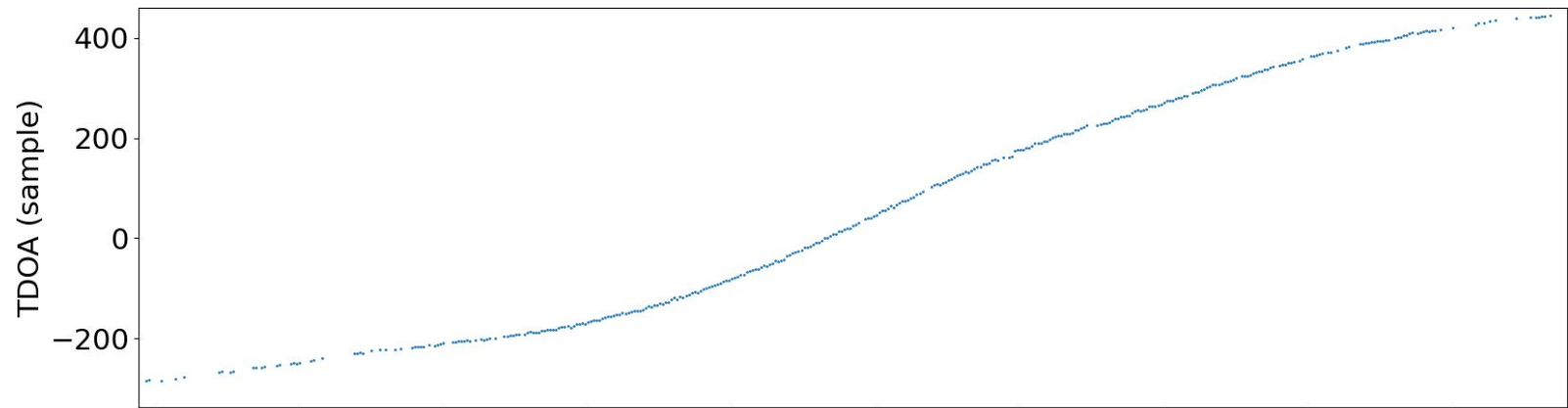




Demonstration of High level dB emission from a jet ski







# Conclusion

- The three hydrophones allowed to get precise tracking and to discriminate the sources
- These first estimations demonstrate significant effects in high frequencies, MF 20 kHz near HF 180 kHz, SEL/SPL are significant
- This emission could be the engine / motor explosion or sonar installed on the jet ski. This shall be asked to the competitors
- An antenna placed under the track of another competition would generate precise dB levels
- Also recording in an open sea would allow measurements without shallow water interference
- Identify the source of the 200kHz peaks



Thank you for your attention

# Annexes



# Paul Thomas

P1 Jetcross AM Racer

Ski

Class

Ski JX3

Brand Hull

Yamaha

Team

F2R

Model

SUPERJET

# Jessica Chavanne

Ski

Ladies Ski JX3

Class

Brand Hull

Kawasaki

Brand Engine

Kawasaki

Team

DREAMJET 99

Model

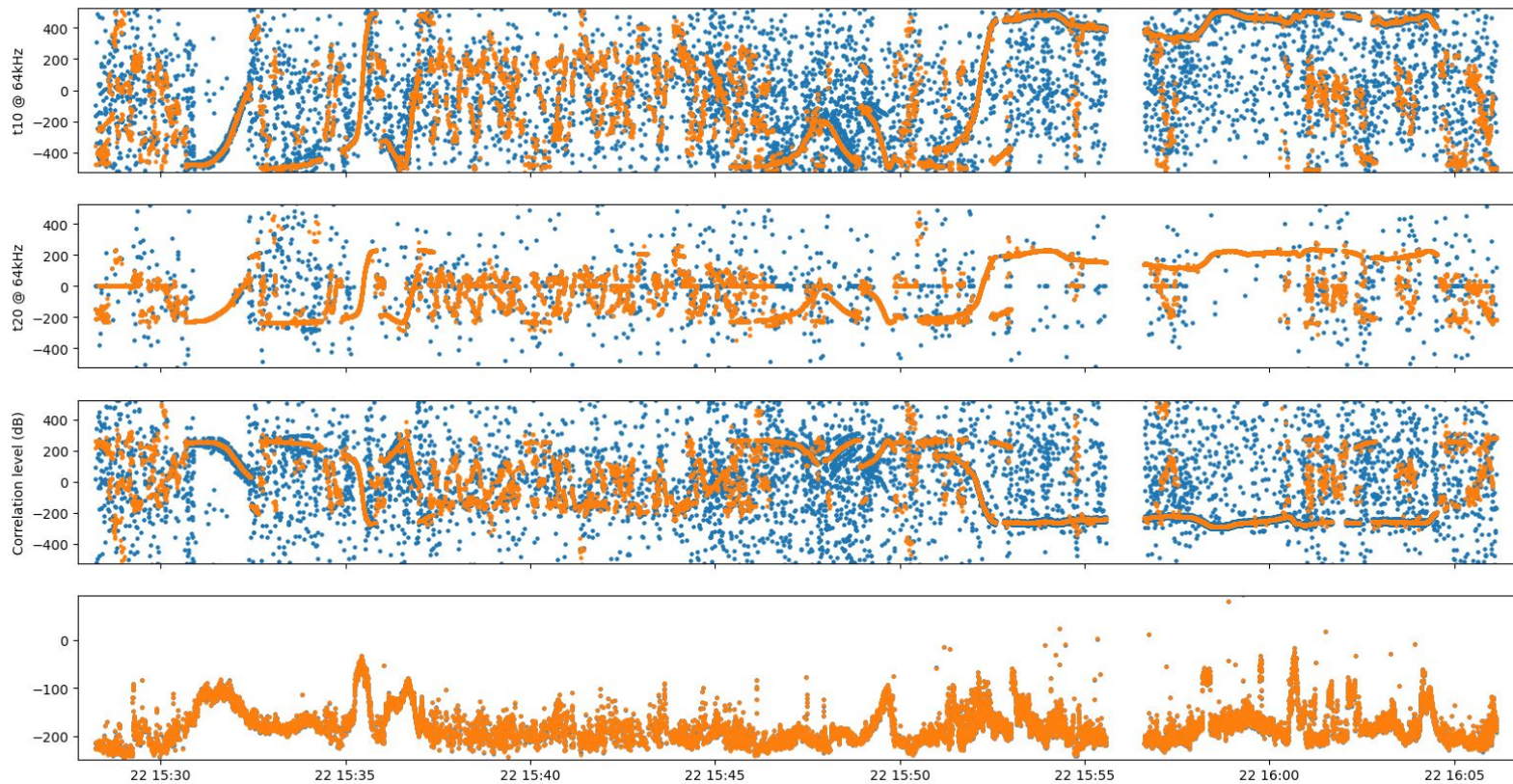
SXR800

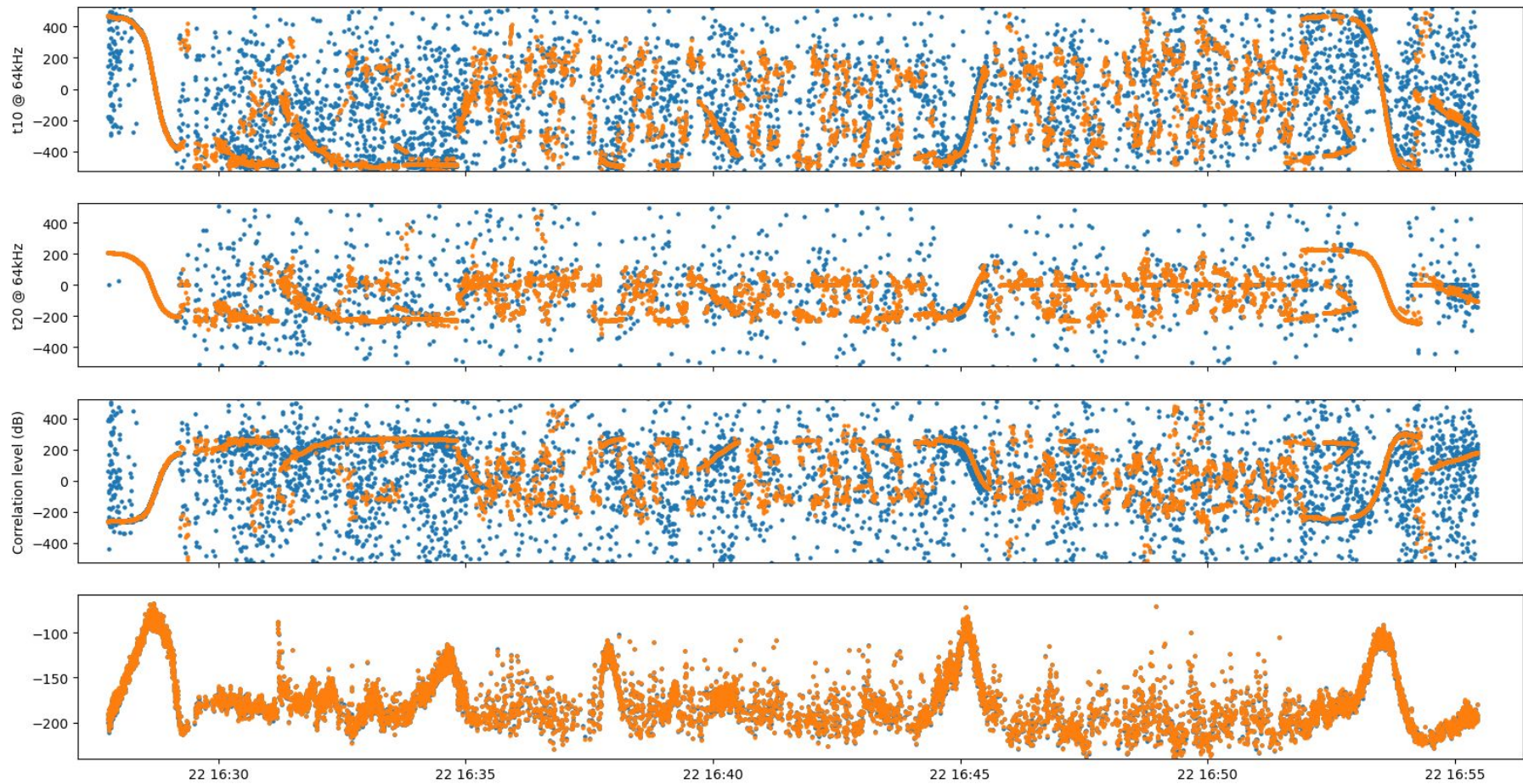
## COGOLIN – BAIE -22/05/2022

time temperature (°C) profondeur(m)

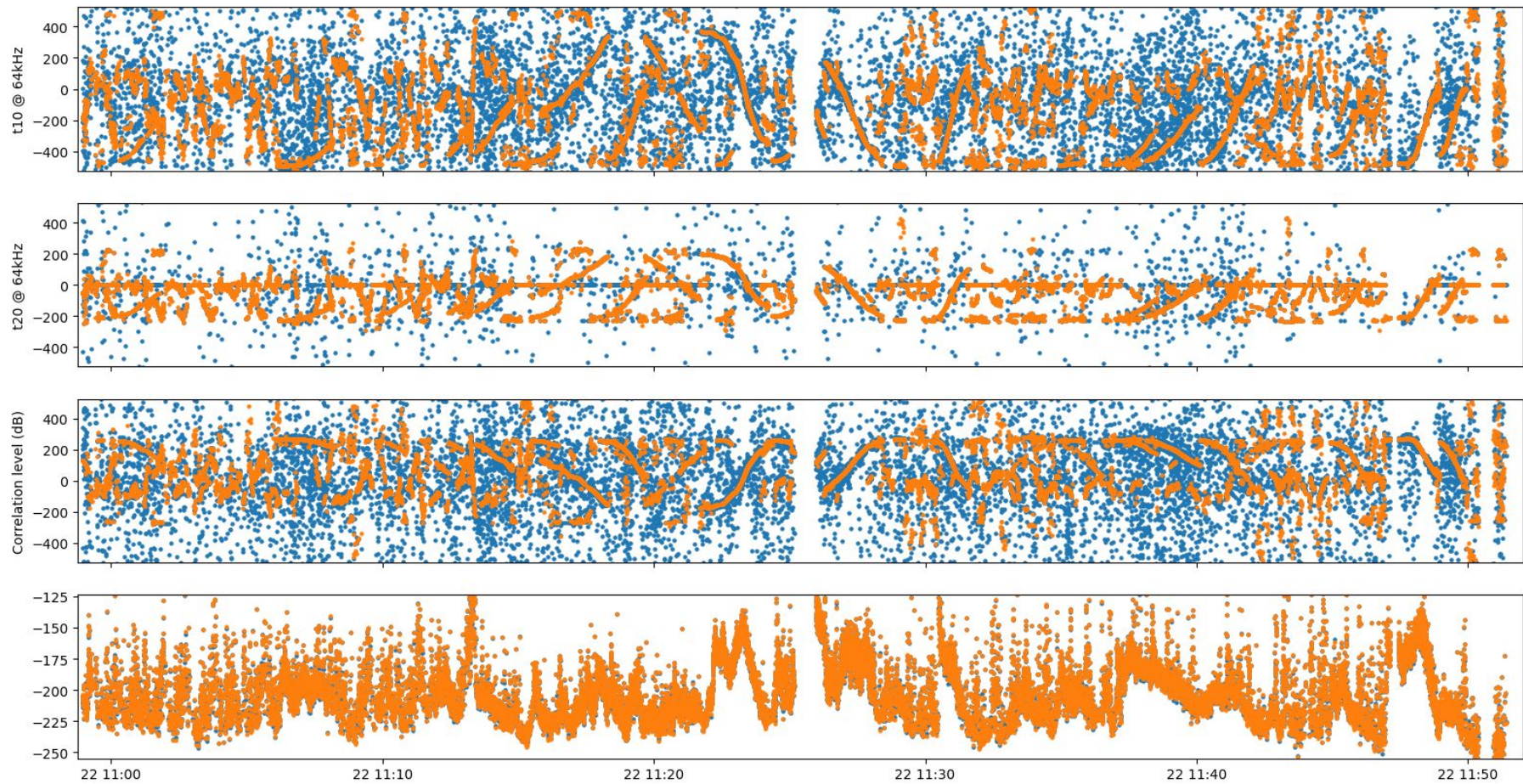
14h17	20.064	-10
15h13	19.98	-10
15h14	20.11	-9
15h15	20.48	-8
15h16	20.57	-7
15h17	20.98	-6
15h18	21.08	-5
15h19	21.12	-4
15h20	21.19	-3
15h21	21.36	-2
15h22	21.44	-1
15h23	21.52	0

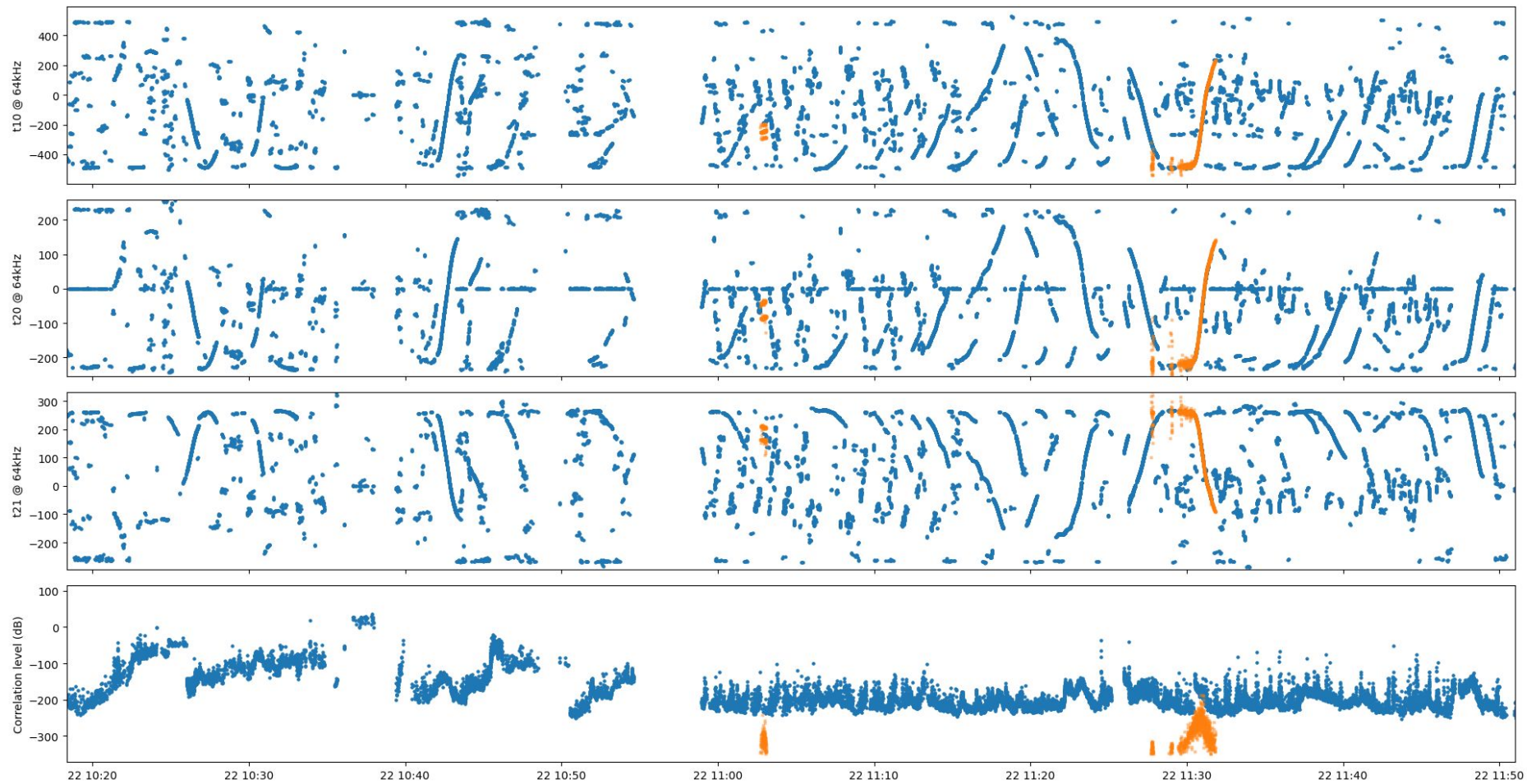
# Amélioration des tdoa par inversion de phase de la voie 1

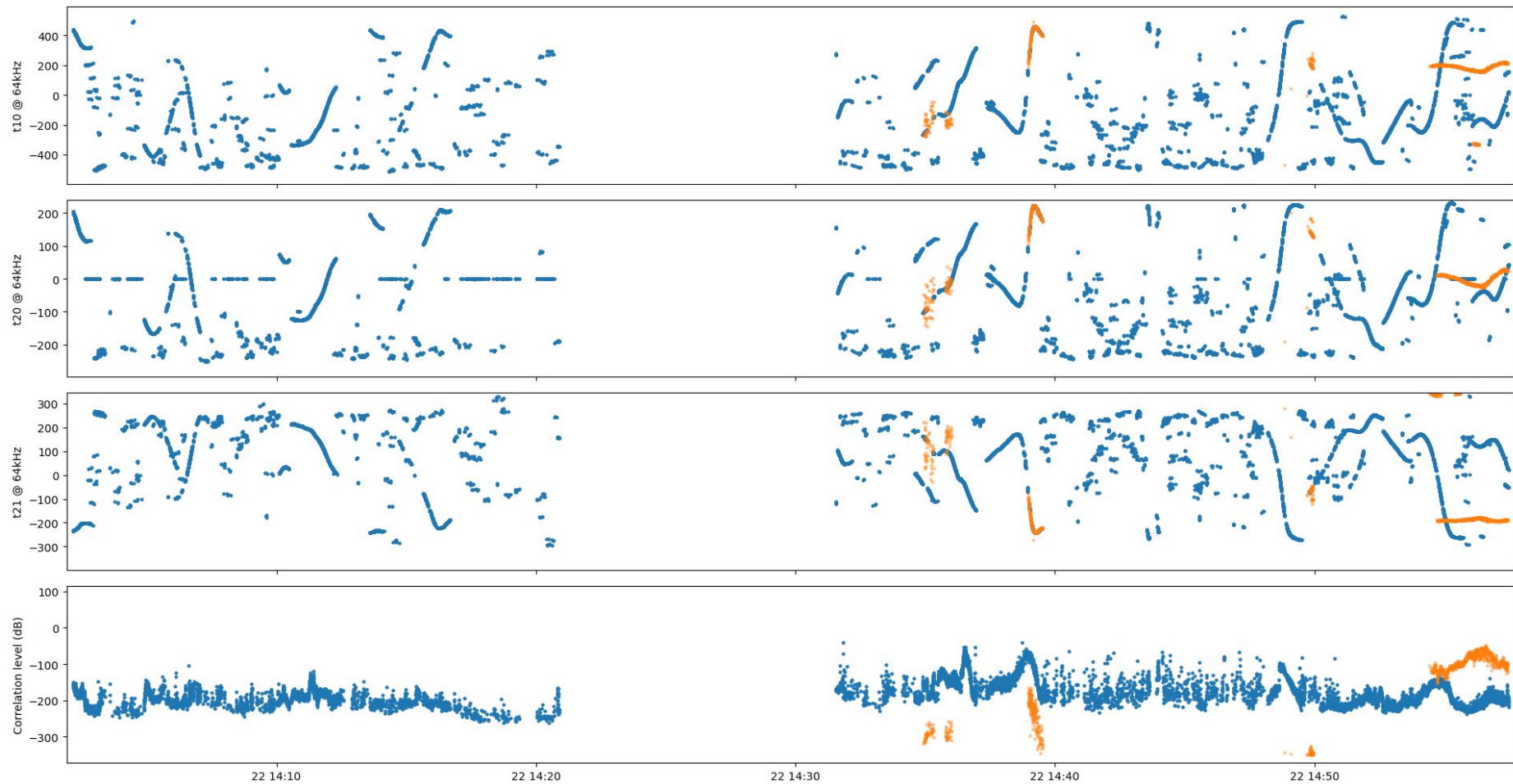


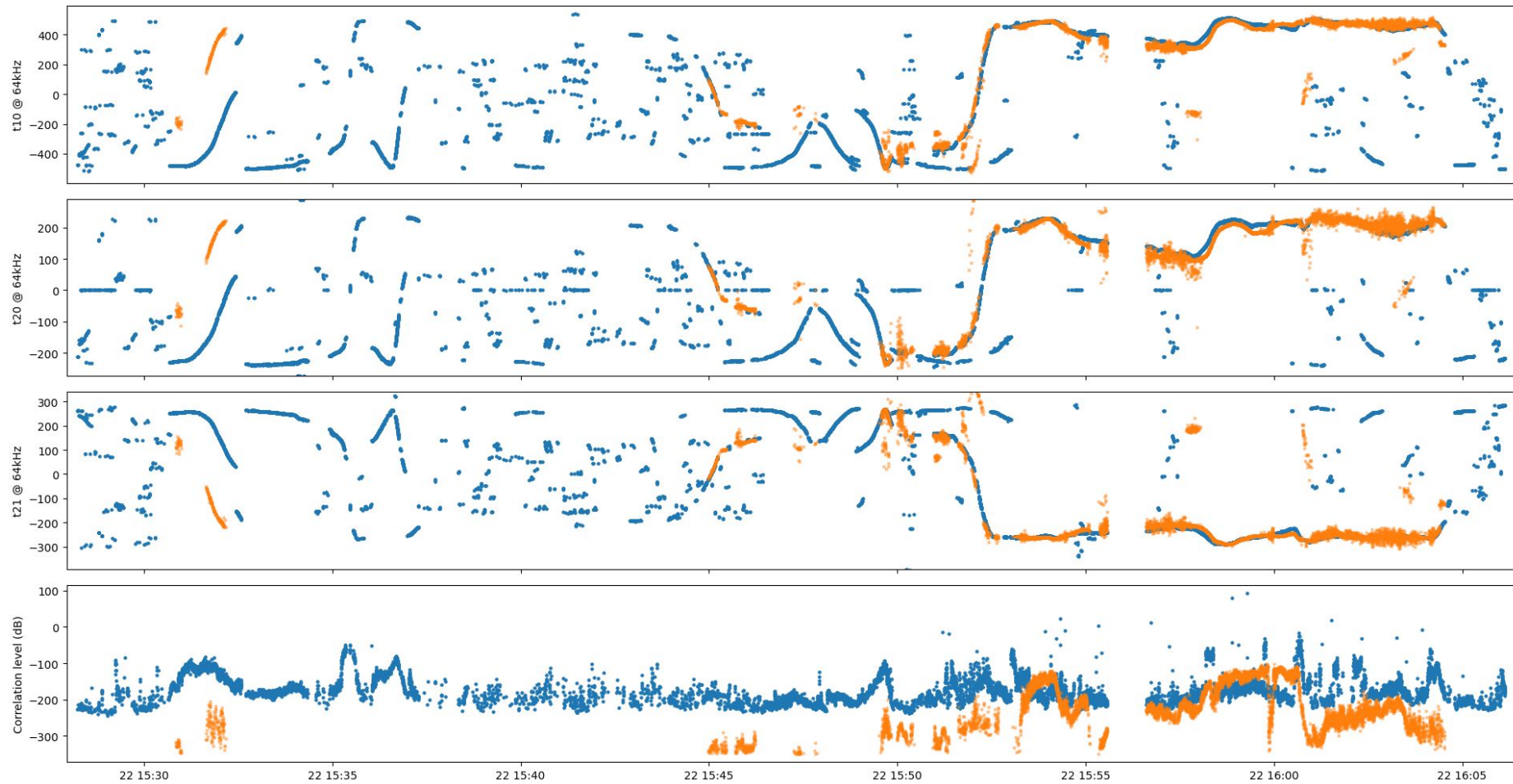


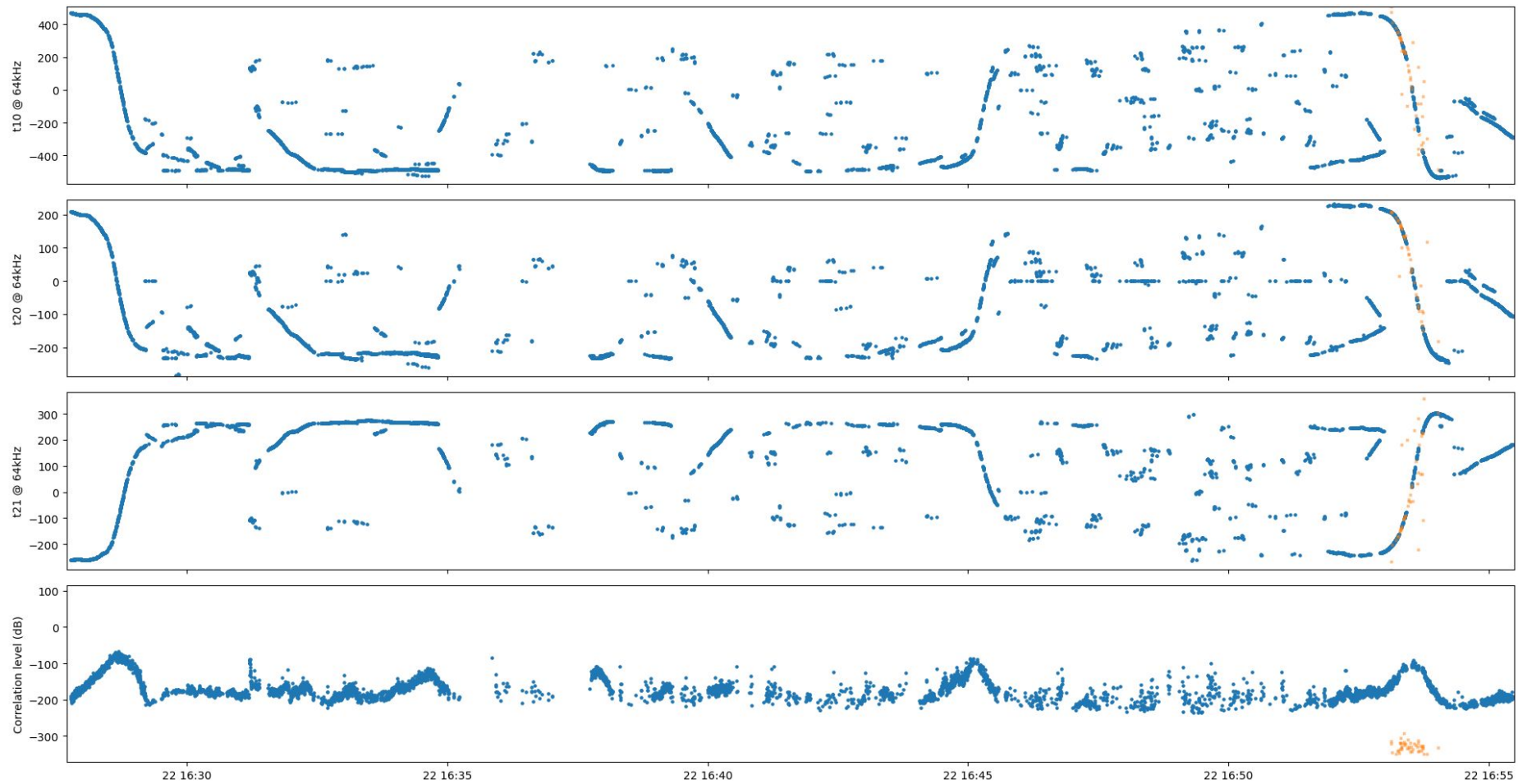


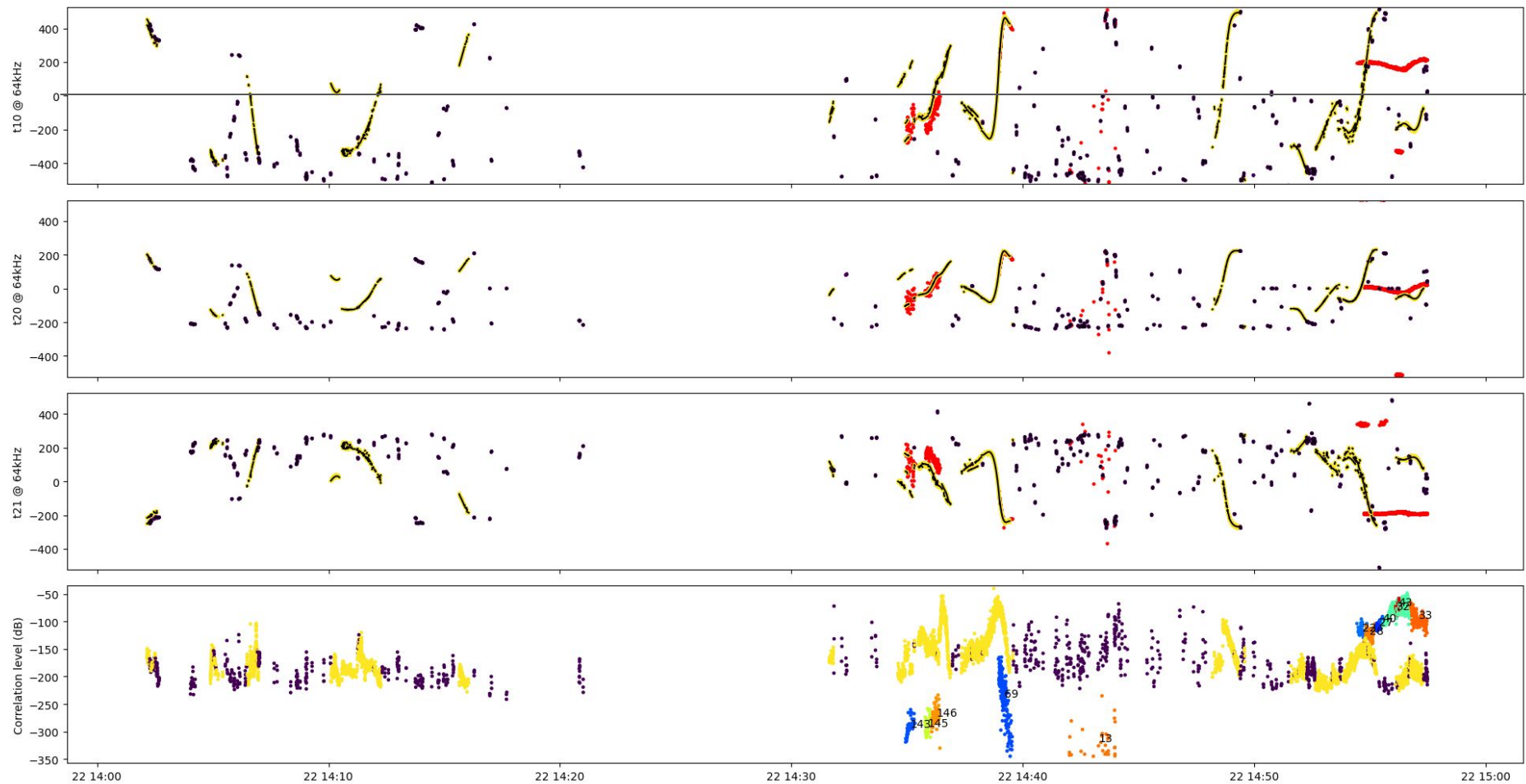


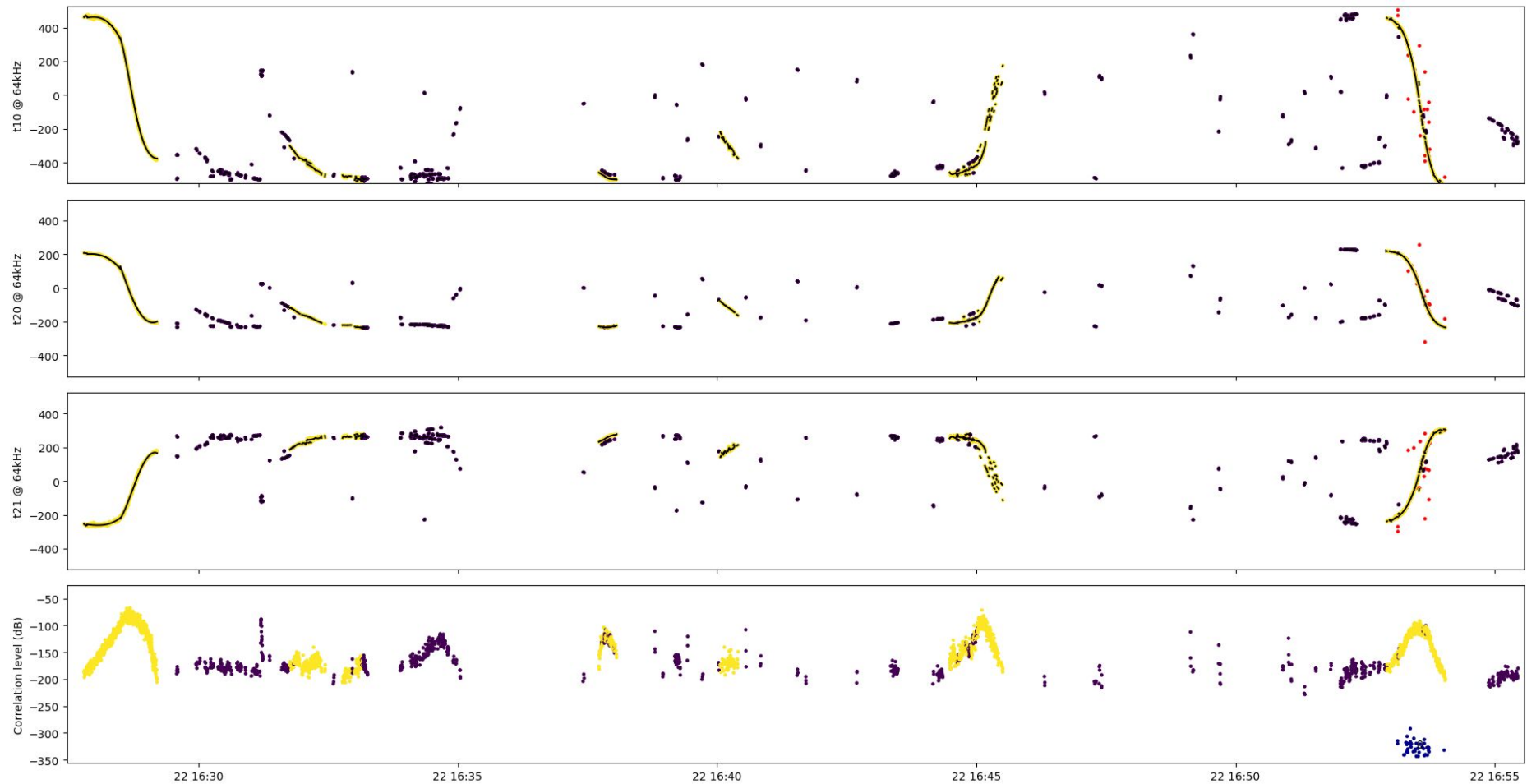


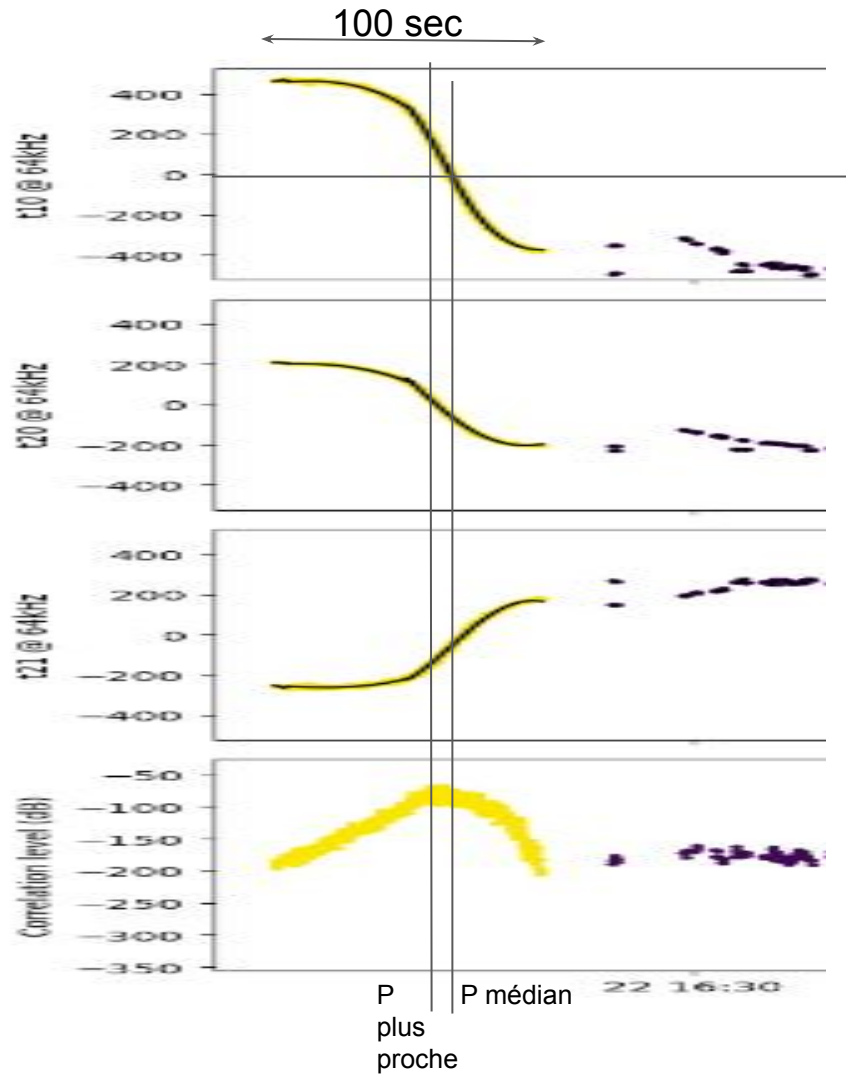












TDofA = 0 => plan médian

environ 10 secondes de différence entre  
Point le Plus Proche et Point Médian