



ΔΗΜΟΚΡΙΤΕΙΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΡΑΚΗΣ

DEMOCRITUS
UNIVERSITY
OF THRACE

ALSEAMAR
ALCEN



IUGC2024

Seasonal evolutions of plankton distributions and particles in the Thracian Sea

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Within the framework of ILIAD - DTO



- DUTH – Oil spill DTO
 - Citizen Science
 - Models for localised wind and currents and forecasting
 - Alert the authorities and provide means for decision making
 - Assist in the monitoring and cleanup

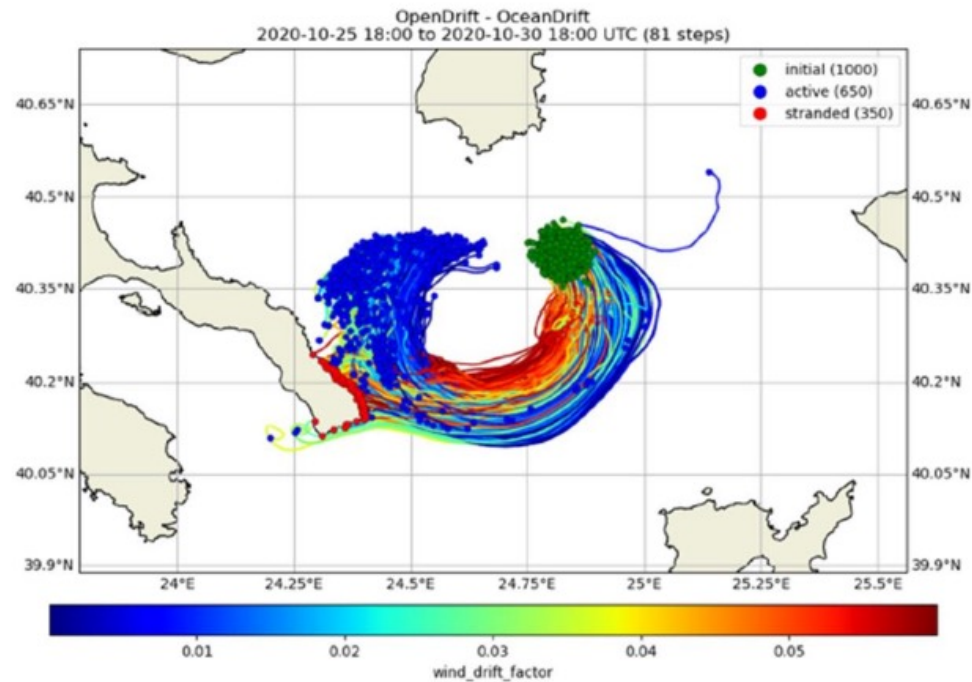
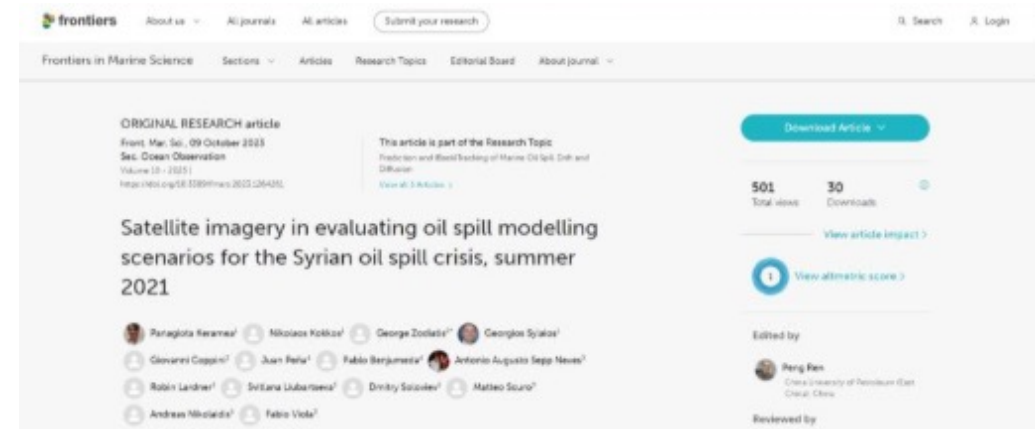
Sensors at Sea – RT Data Transfer to DUTH Server



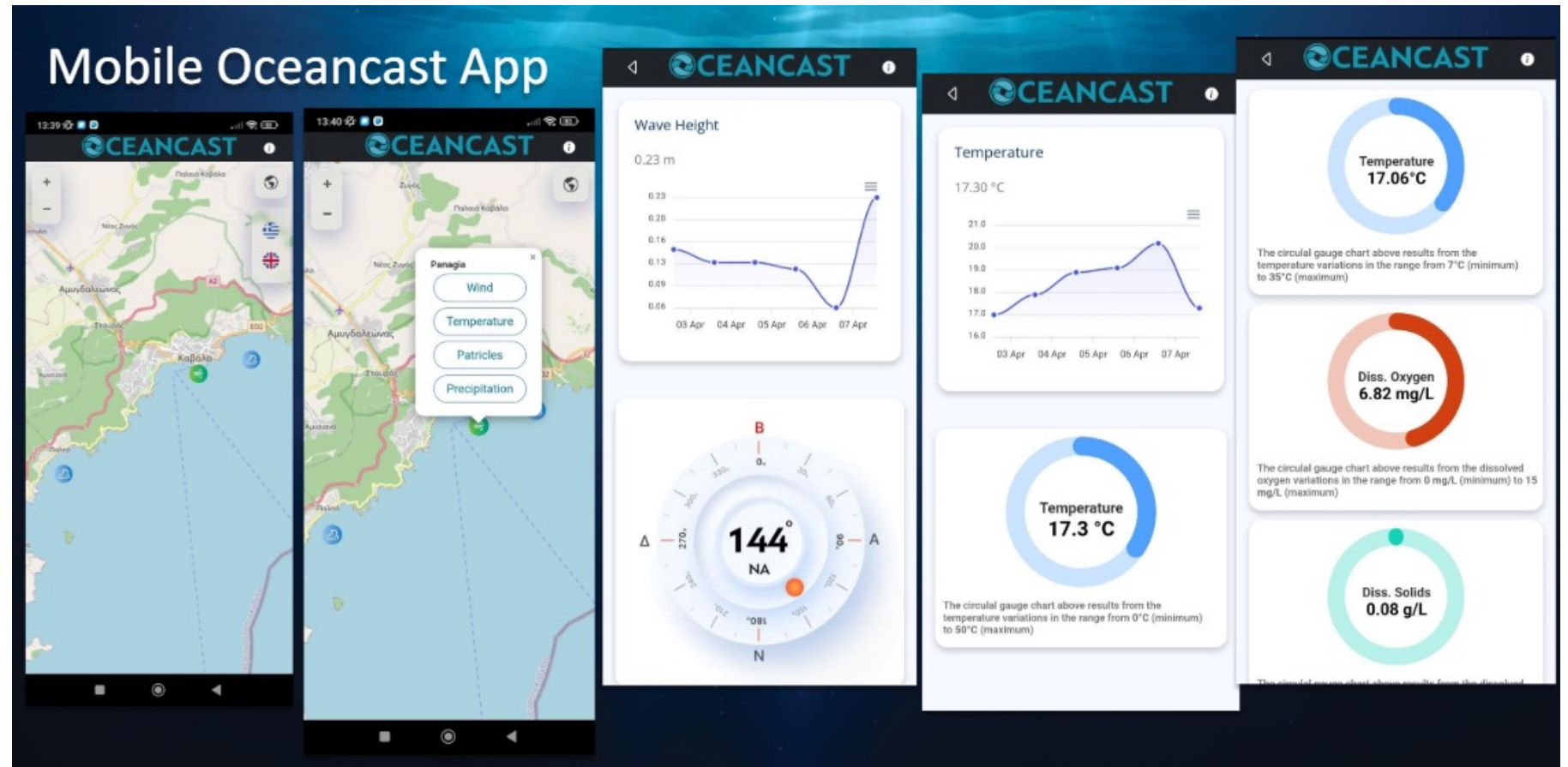
- **4 ADCPs** for 3D currents, waves and SPM monitoring
- **1 surface water quality station** (SST, S, DO, Chl, pH, SPM)
- **2 Wave riders** (wave height, period and direction)
- **Glider surveys** (T, C, S, σ_t , CDOM, SPM, DO)

DTO for oil spill monitoring

- Drift models
- Creation of Hazard indexes
- NRT predictions informed by data



Assistance for decision making



- Need for data in the region !

Deployments in an undersampled Thracian Sea



5 days 10 days 30 days 1 year 10 years ALL

ALL

▼ Everywhere

Data type

<input type="checkbox"/> Profiling float	16
<input type="checkbox"/> Thermosalinograph	7
<input type="checkbox"/> Tide gauge	5

Parameters

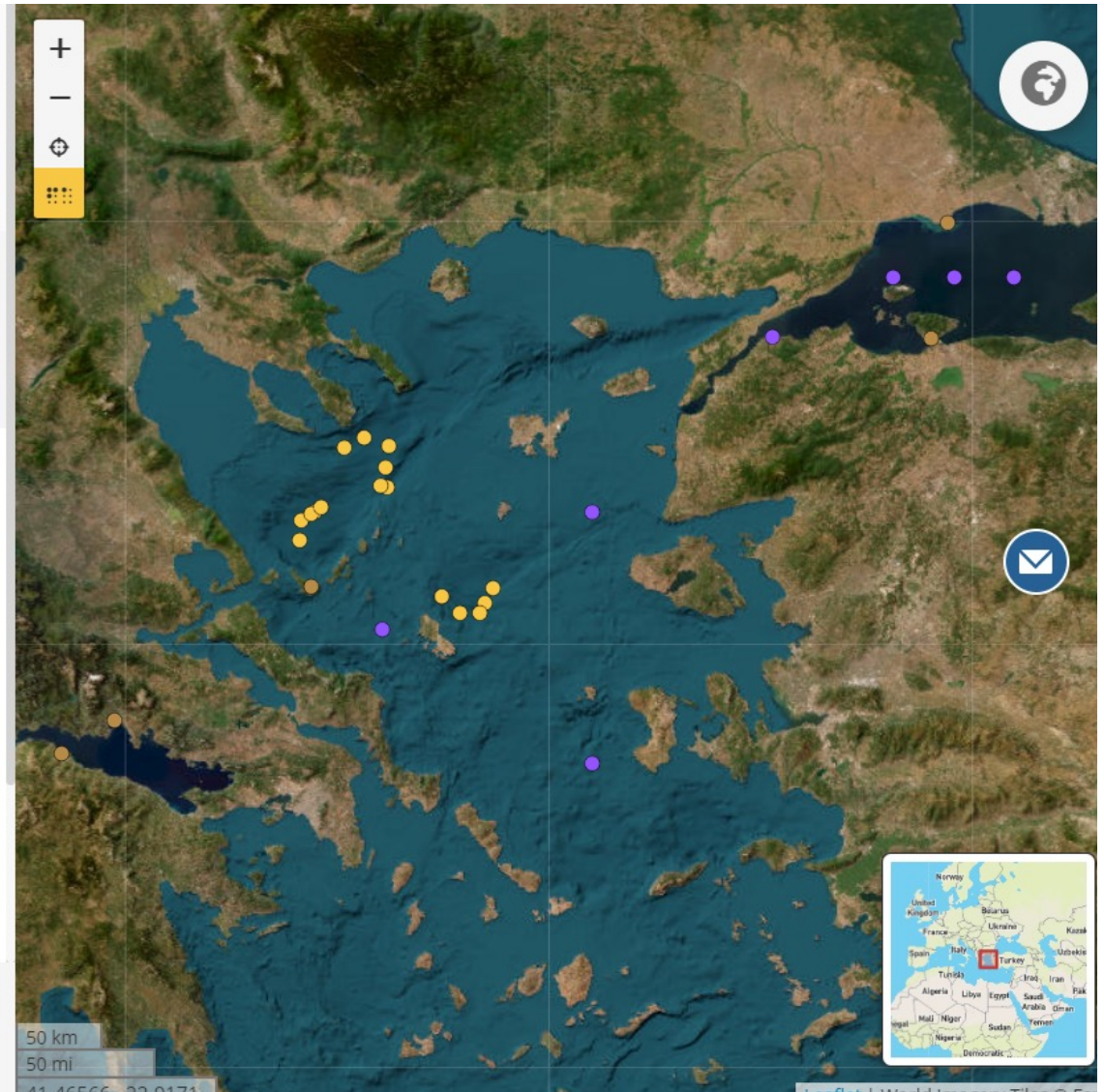
<input type="checkbox"/> Sea temperature	23
<input type="checkbox"/> Salinity	16
<input type="checkbox"/> Sea Level	5
<input type="checkbox"/> Air humidity	1

Quality

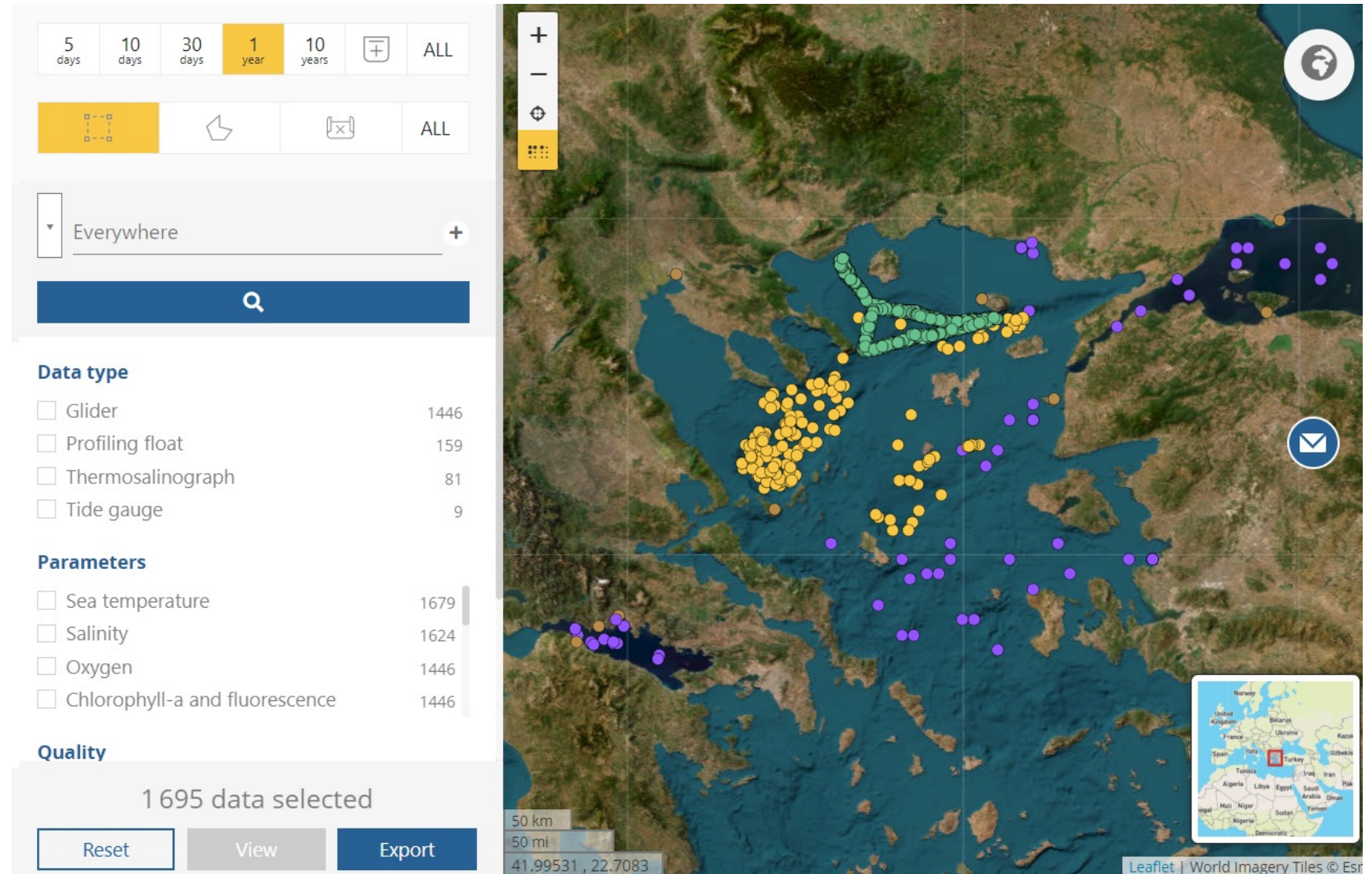
<input checked="" type="checkbox"/> Good	20
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28 data selected

Reset View Export

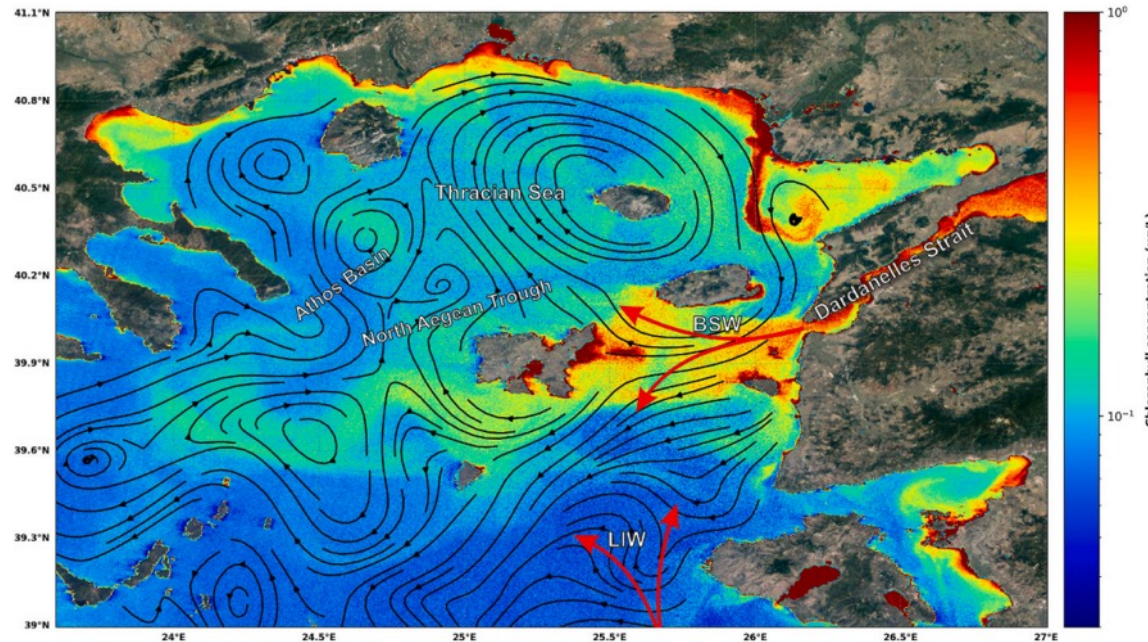
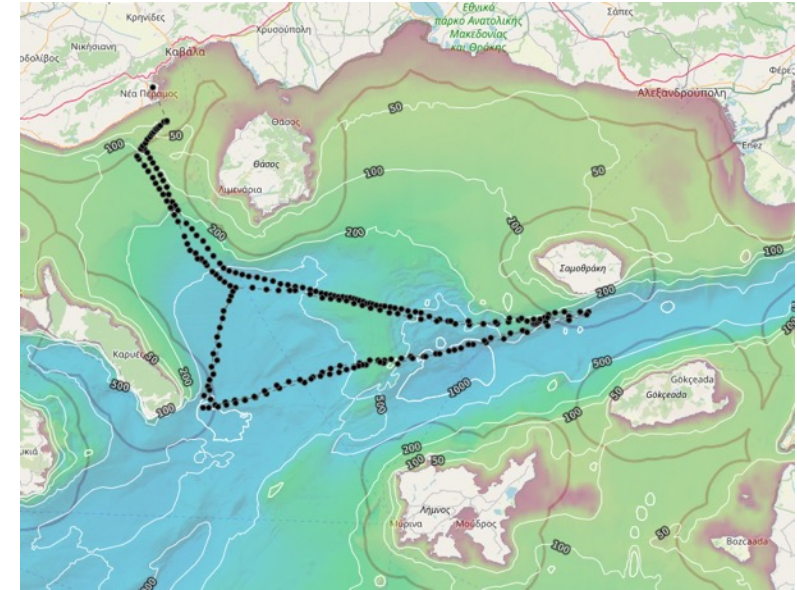


Deployments in an undersampled Thracian Sea



Athos Basin and Thracian Sea deployments

- Undersampled and active area (Dardanelles)
- Lots of ship lines
- Numerous river inflows



2019 deployment results

- Deeper DCM -> also thicker and more symmetric
- DCM properties and scalings, dominated by picoplankton in theory

Hydrography and deep chlorophyll maximum patterns of the Athos Basin and the Thracian Sea continental shelf (North Aegean Sea) combining glider and satellite observations

Nikolaos Kokkos^a, Anastasia Papadopoulou^a, Konstantinos Zachopoulos^a, Maria Zoidou^a, Laurent Beguery^b, Félix Margirier^b, Georgios Sylaios^{a,c}

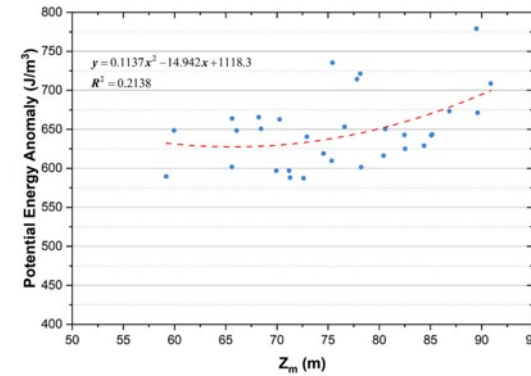
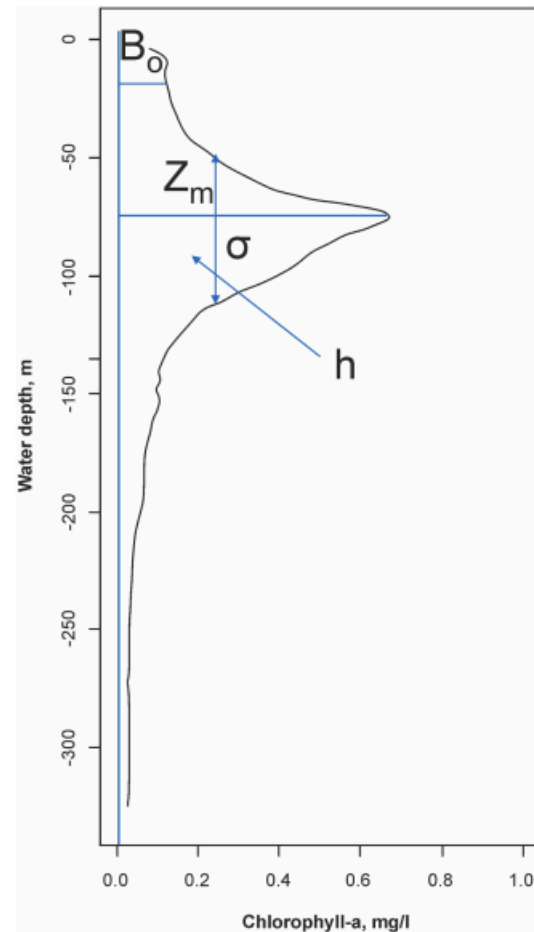


Fig. 14. Non-linear relationship between water column stratification, expressed by the potential energy anomaly (PEA) and the mean DCM depth, as observed in the Athos Basin and the Thracian Sea.

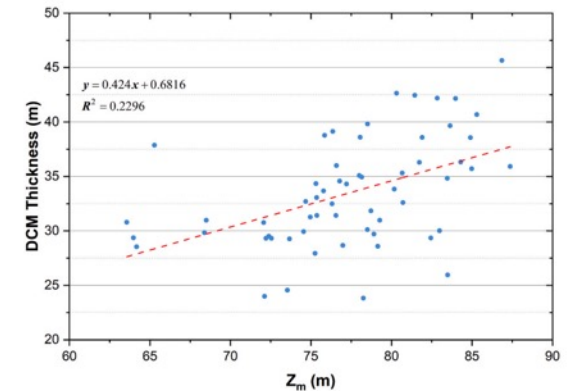


Fig. 15. Linear relationship between the mean DCM depth and the DCM thickness, as observed in the Athos Basin and the Thracian Sea.

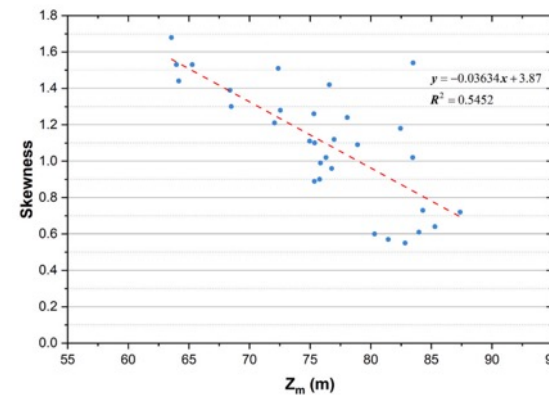


Fig. 17. Linear relationship between the mean DCM depth and the skewness of the Gaussian-fitted distribution on the Chl-a pigment concentration, as observed in the Athos Basin and the Thracian Sea.

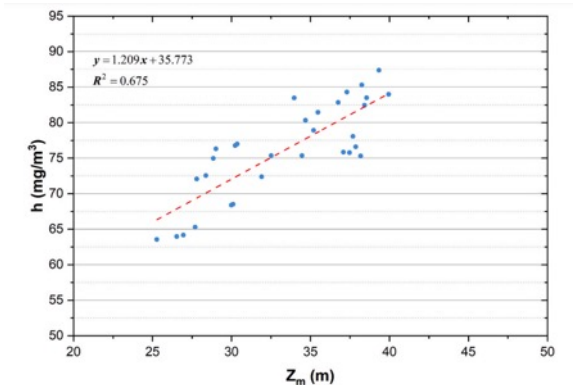
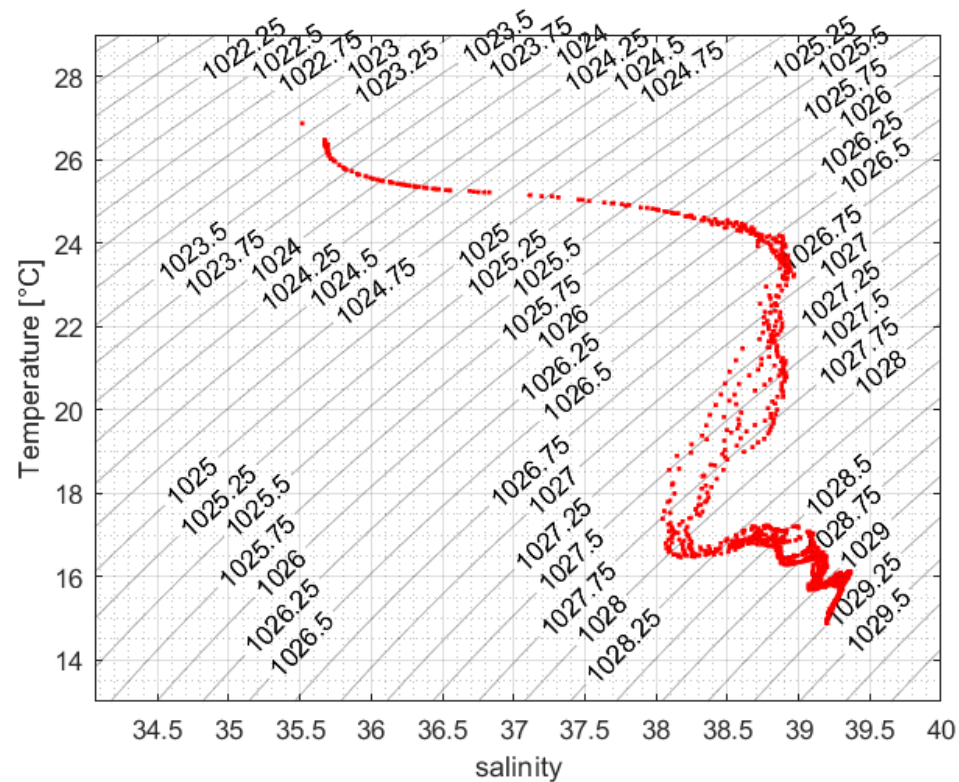


Fig. 16. Linear relationship between the mean DCM depth and the integrated Chl-a pigment concentration, as observed in the Athos Basin and the Thracian Sea.

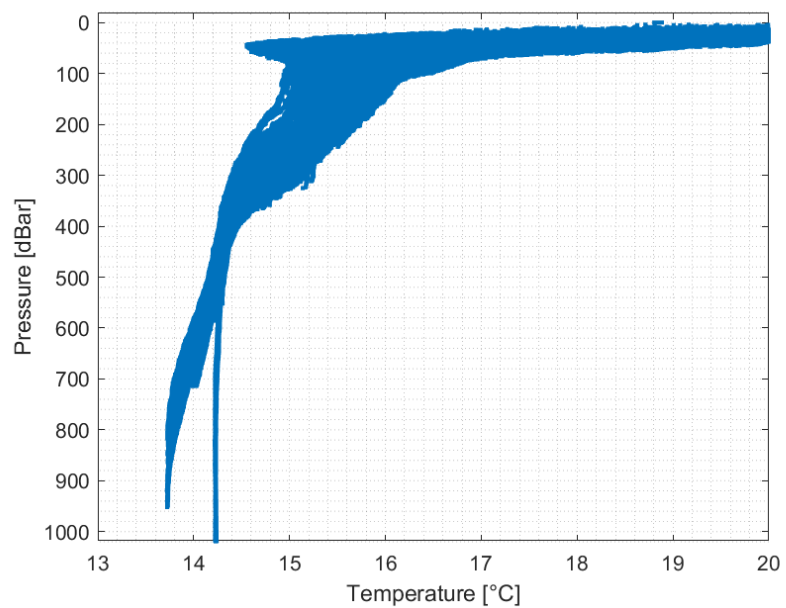
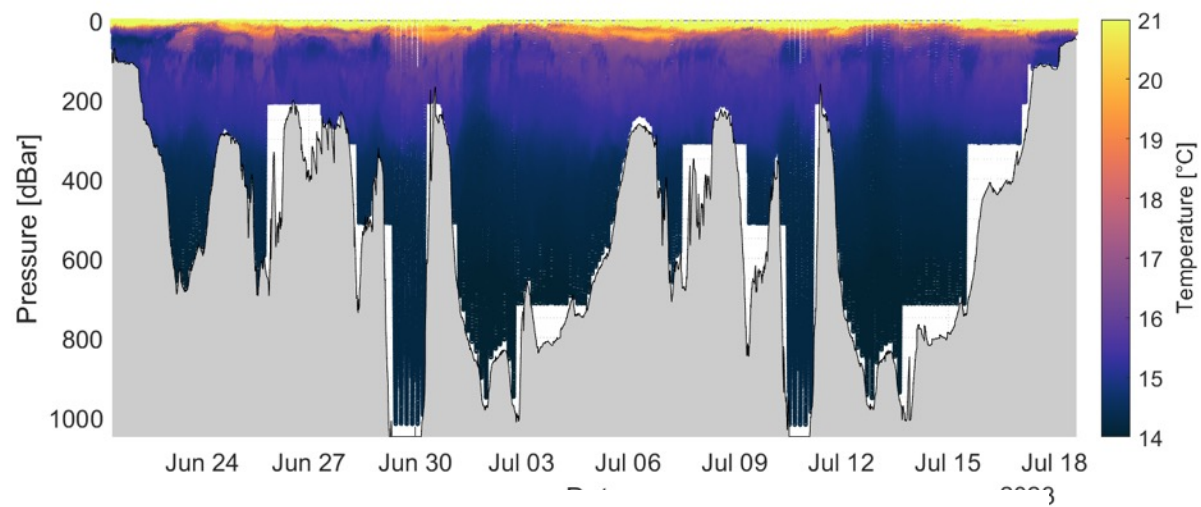
A yellow inflatable boat, likely a Zodiac, is shown from a side-on perspective. The word "EXPLORER" is printed in large, bold, black capital letters on the side of the hull. The boat is floating on a dark blue sea with small, choppy waves. The sky above is a clear, pale blue. In the foreground, a portion of a black, textured surface, possibly a seat or part of the boat's interior, is visible. The overall scene suggests a maritime excursion or a small-scale fishing operation.



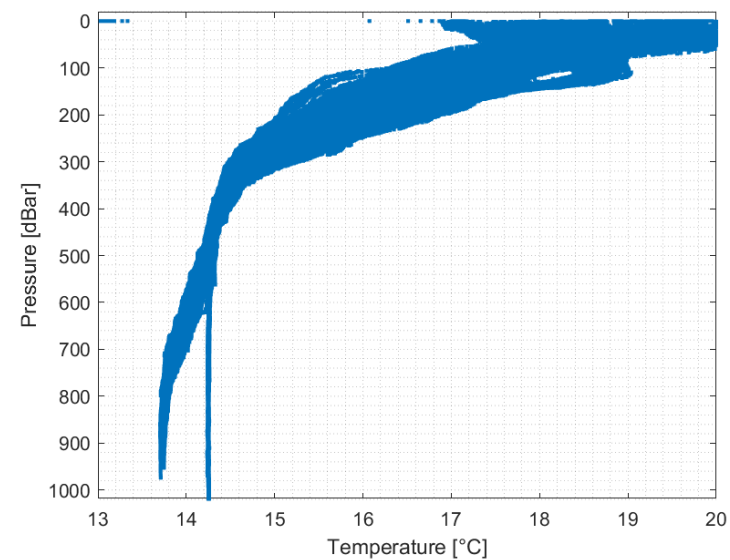
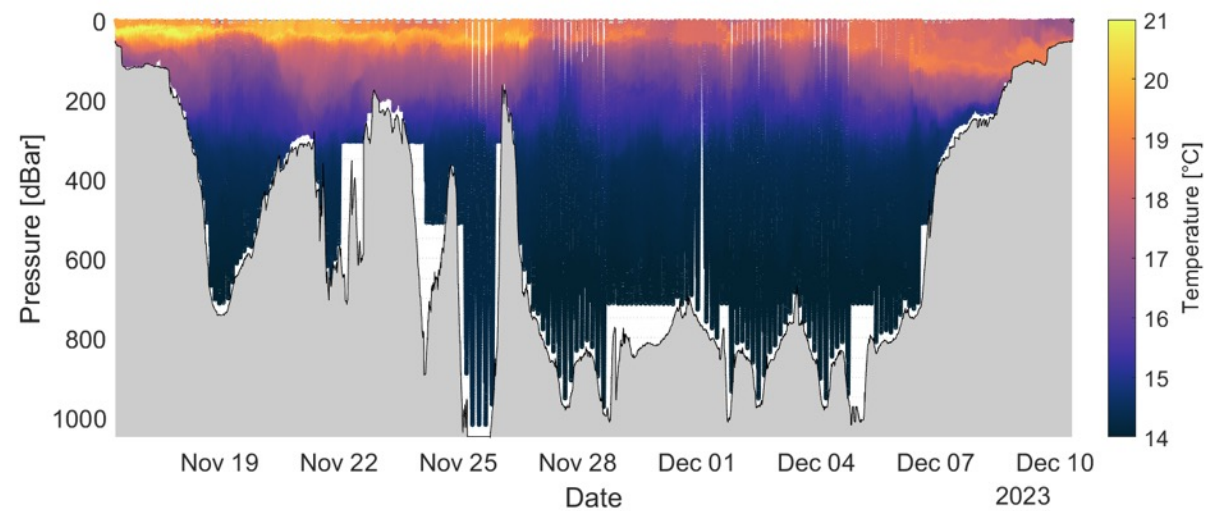
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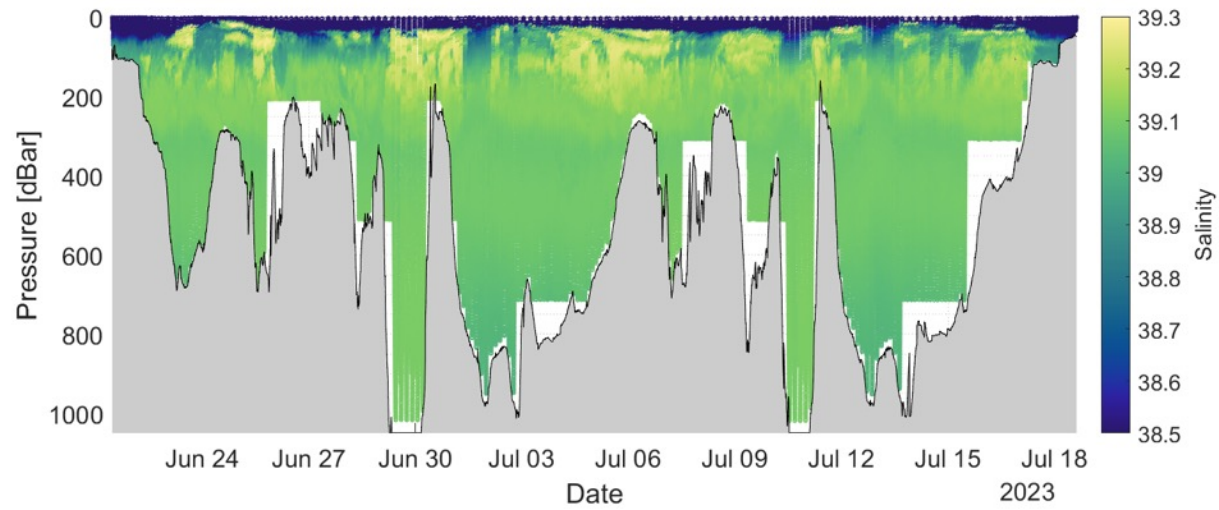
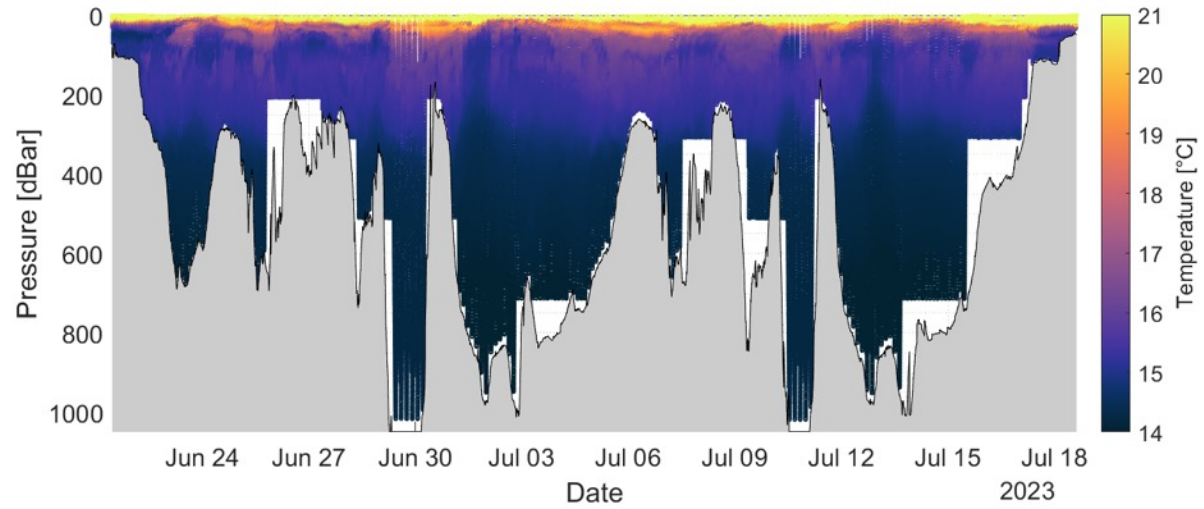
Summer



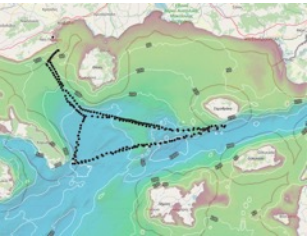
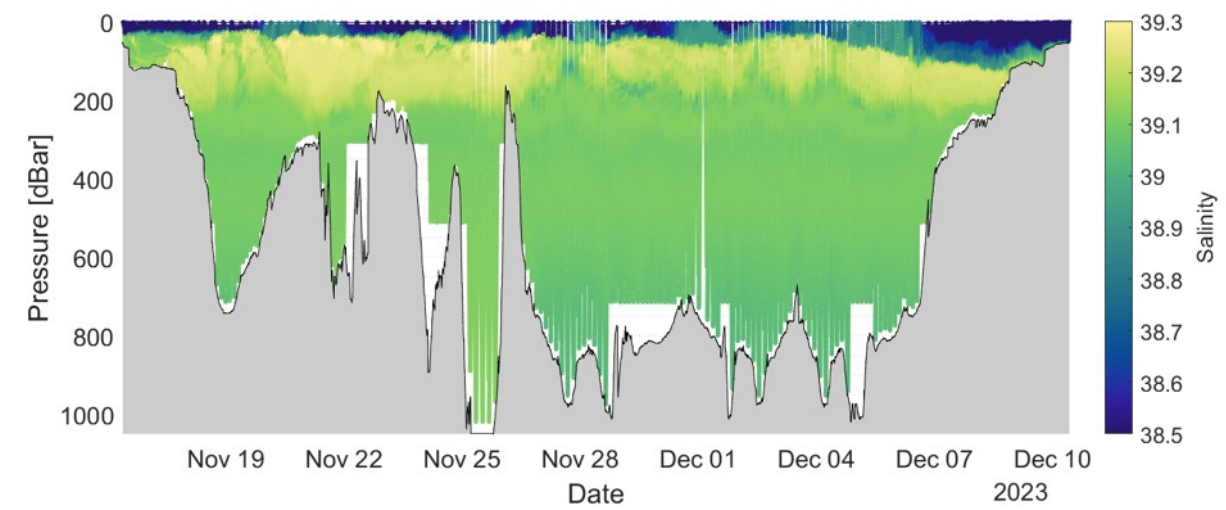
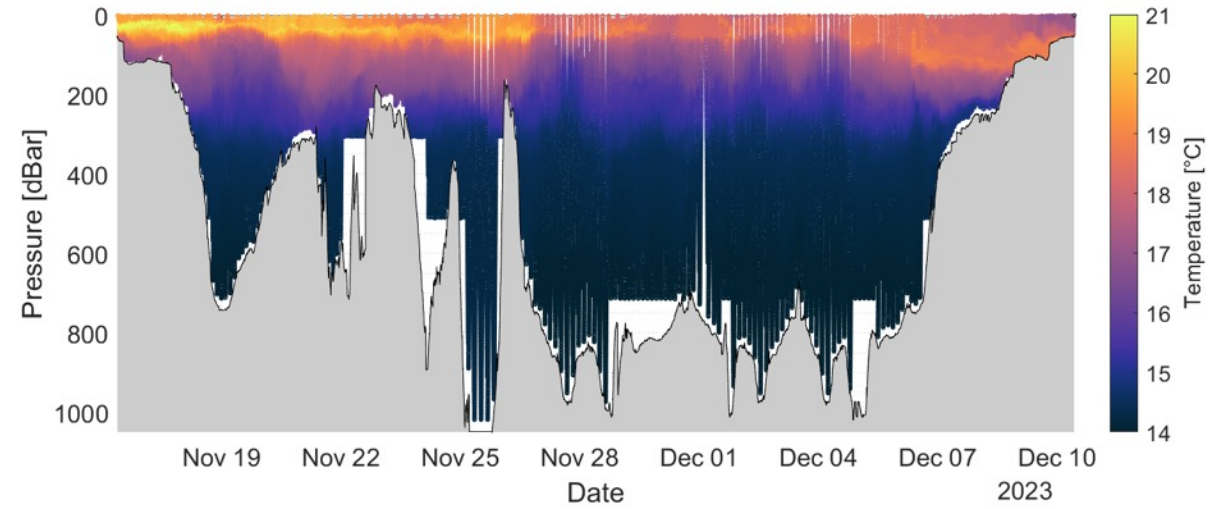
Winter



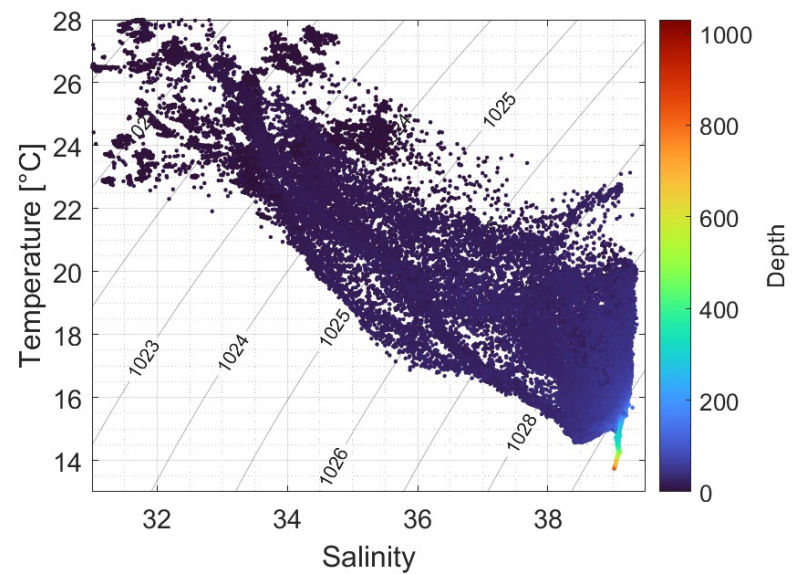
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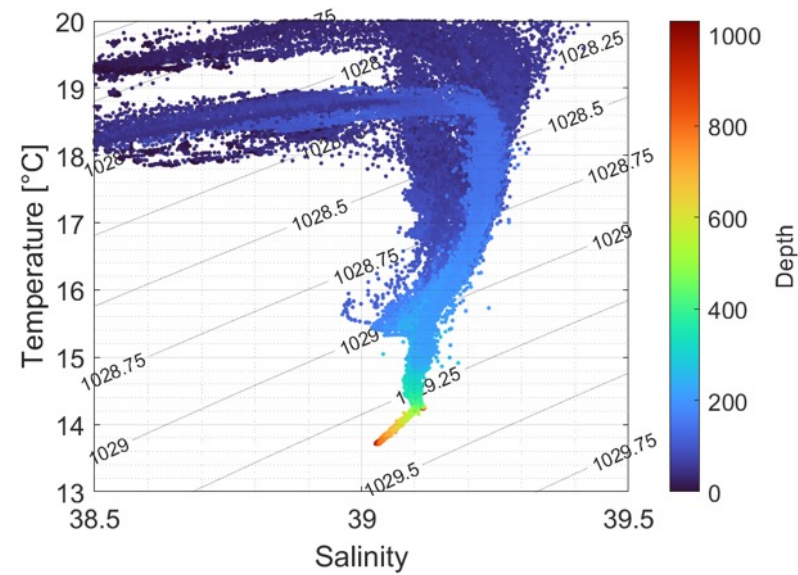
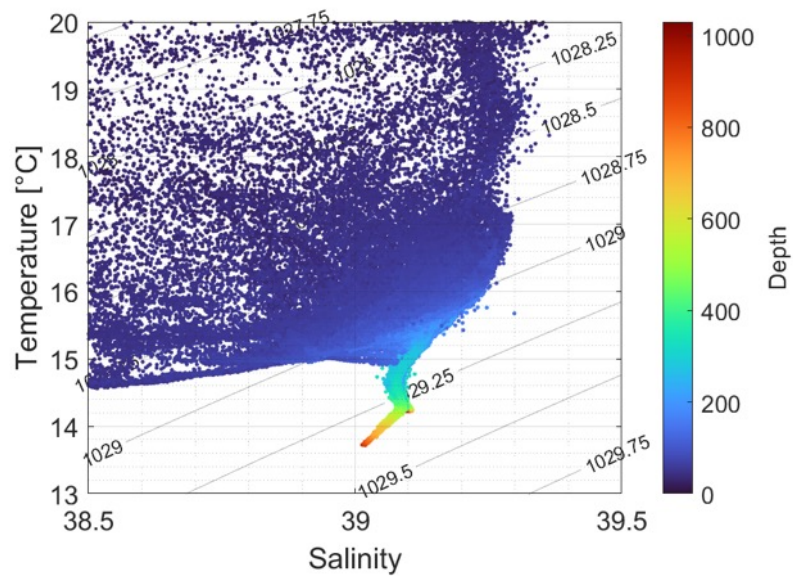
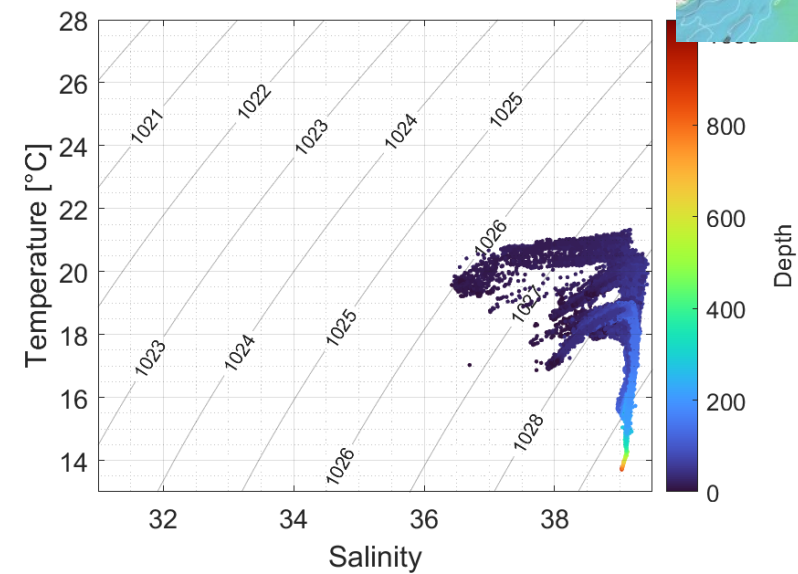
Winter



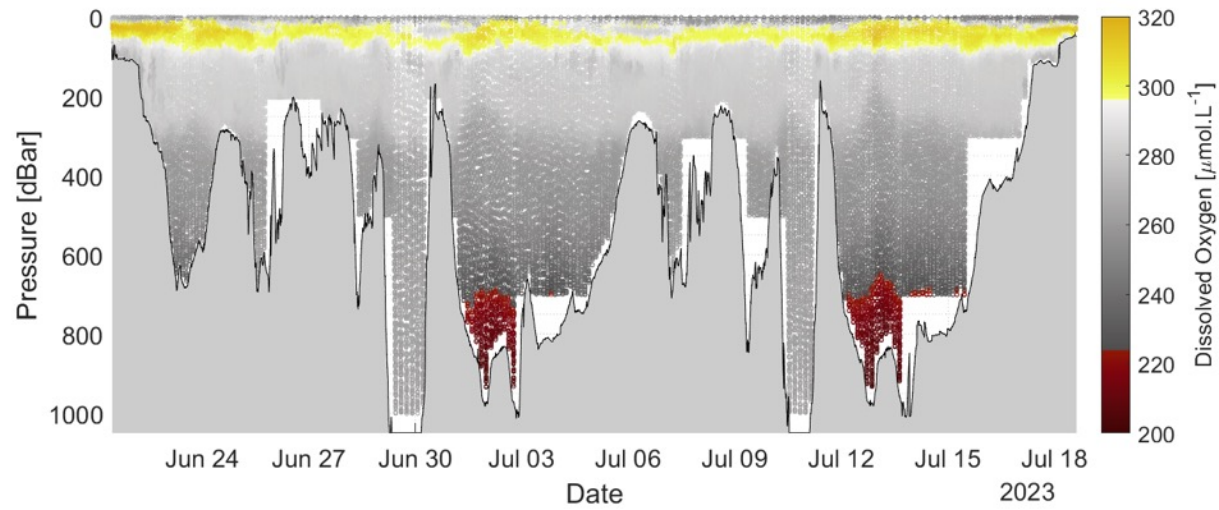
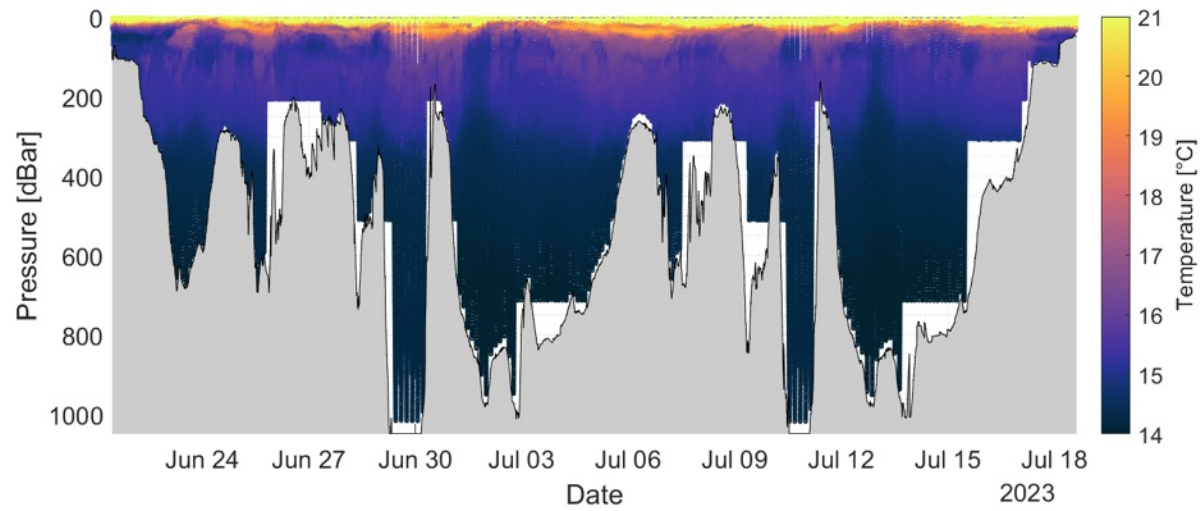
Summer



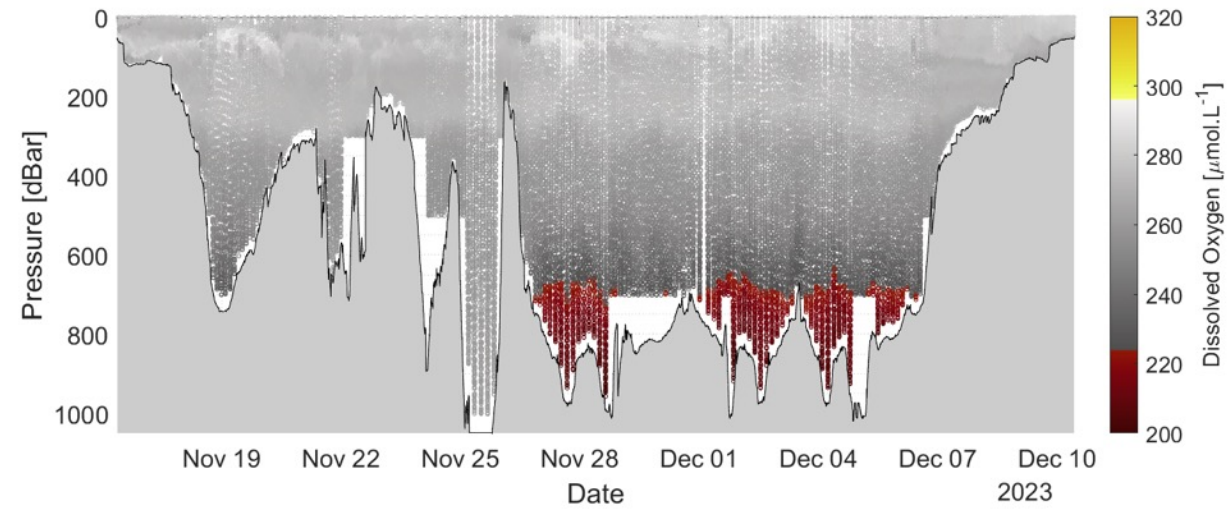
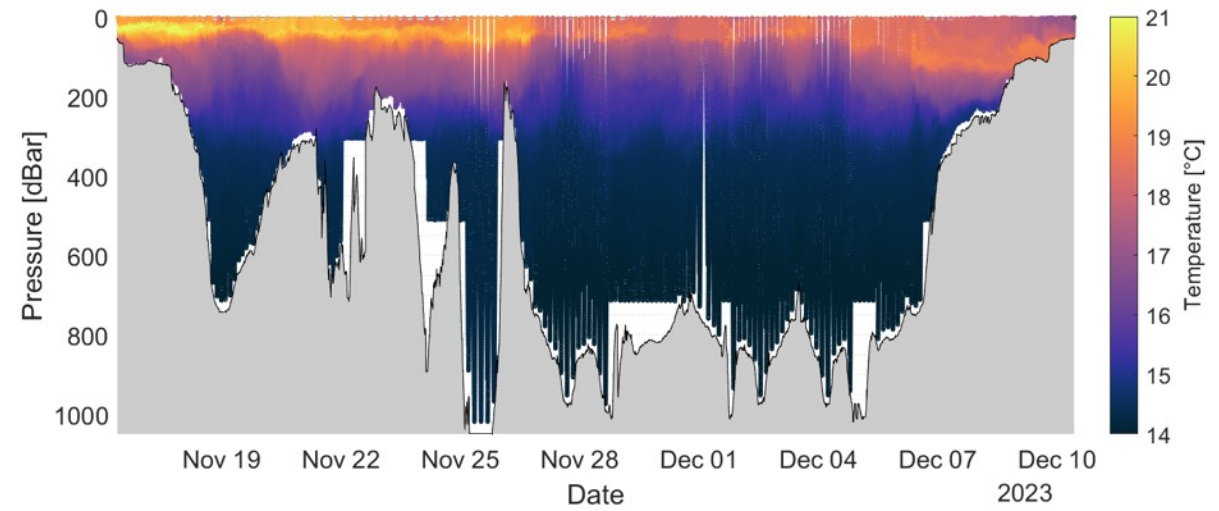
Winter



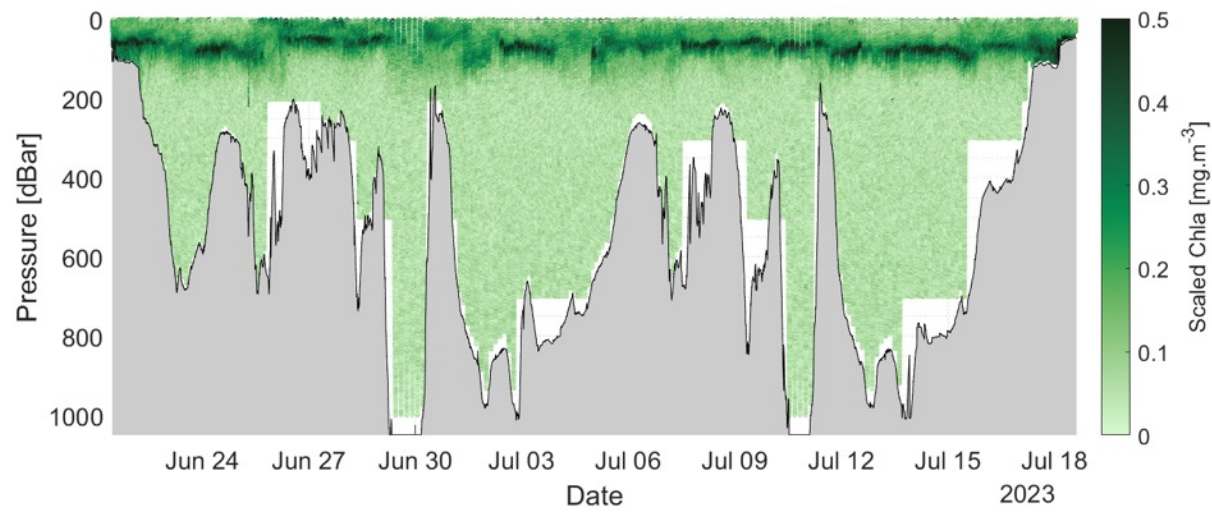
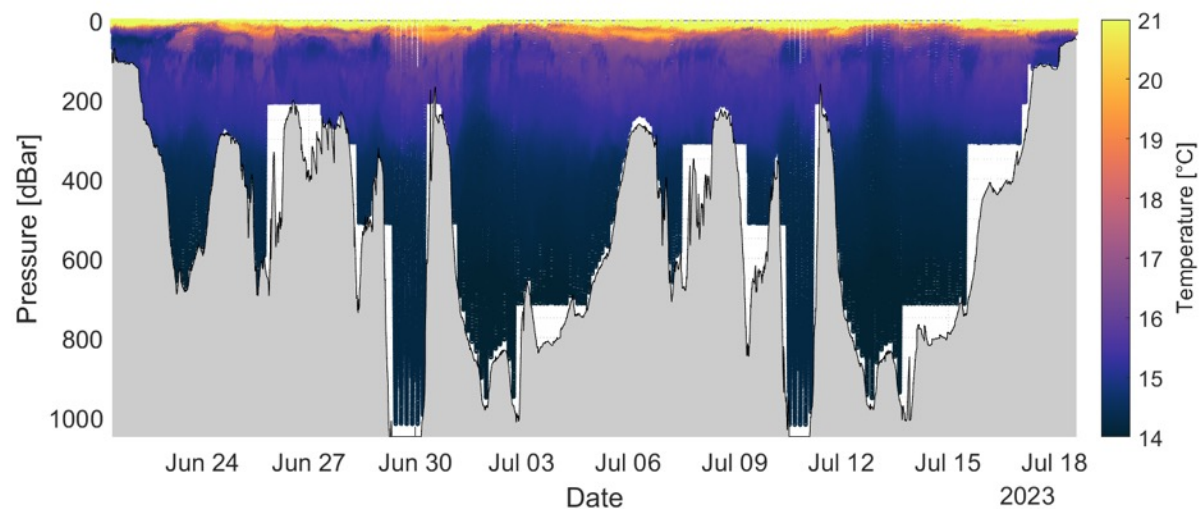
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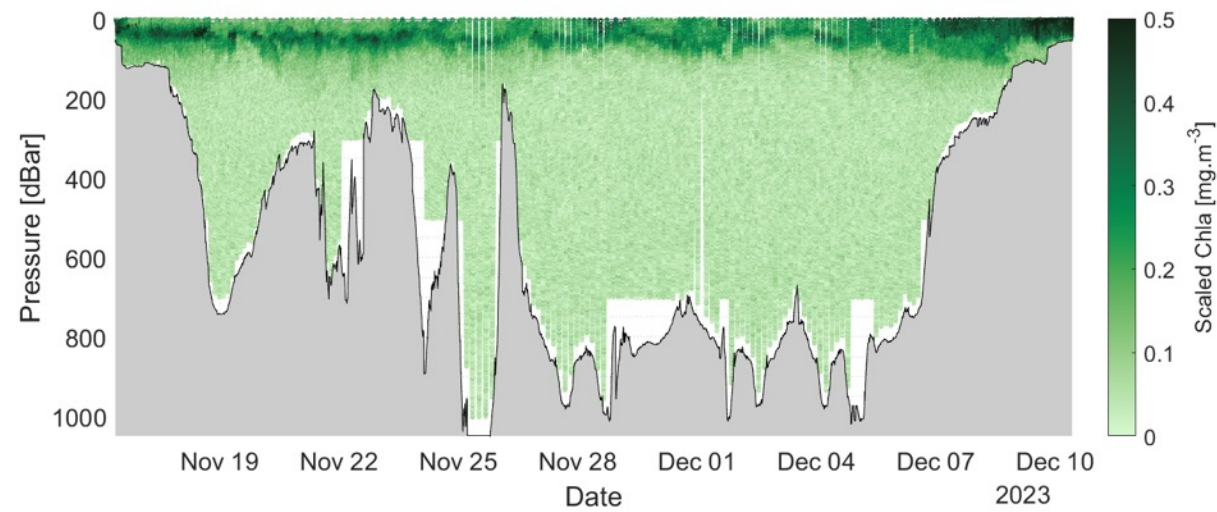
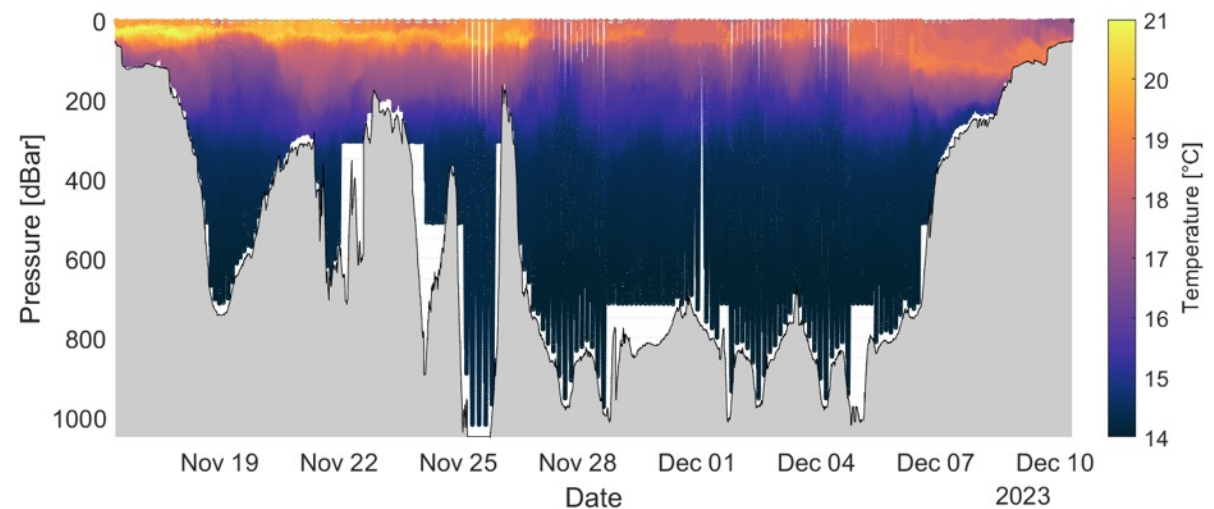
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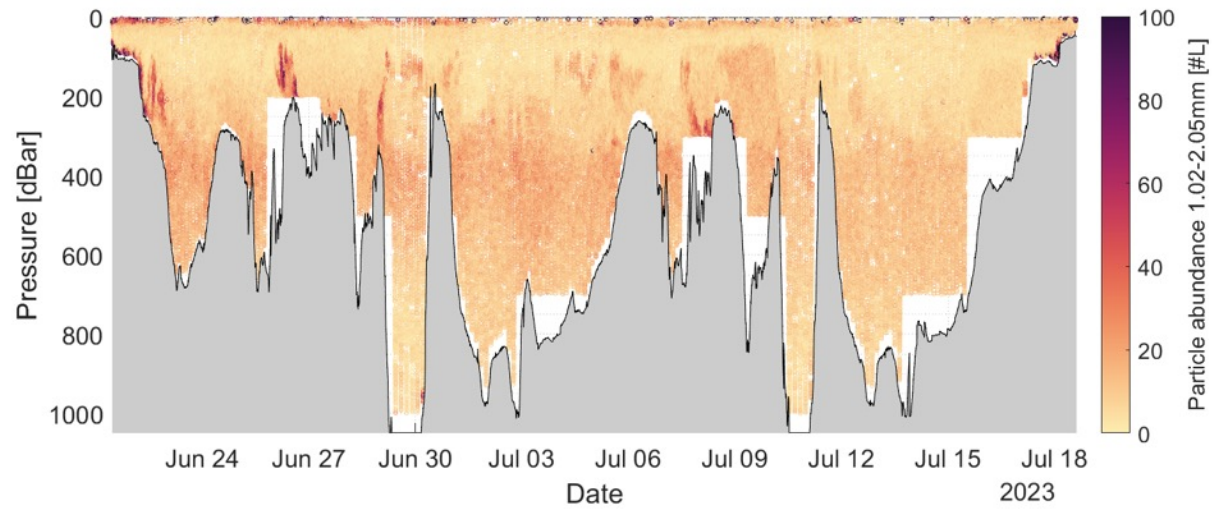
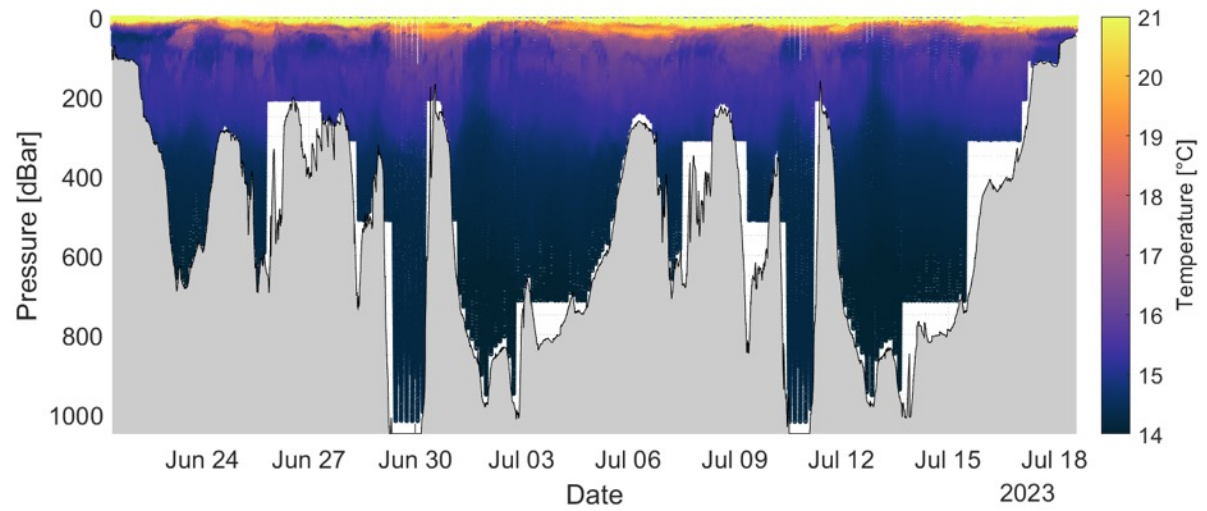
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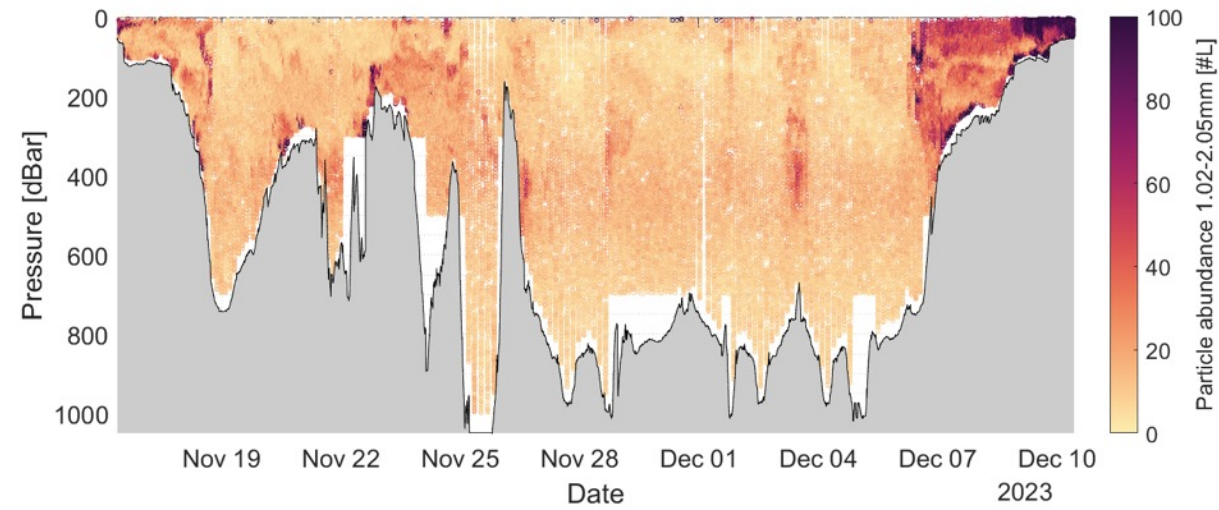
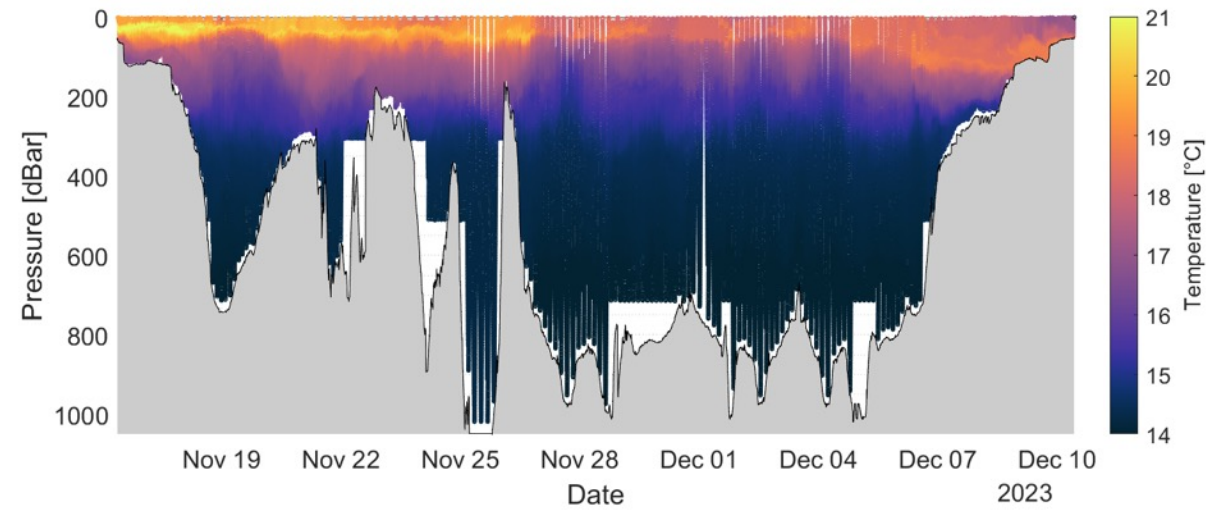
Winter



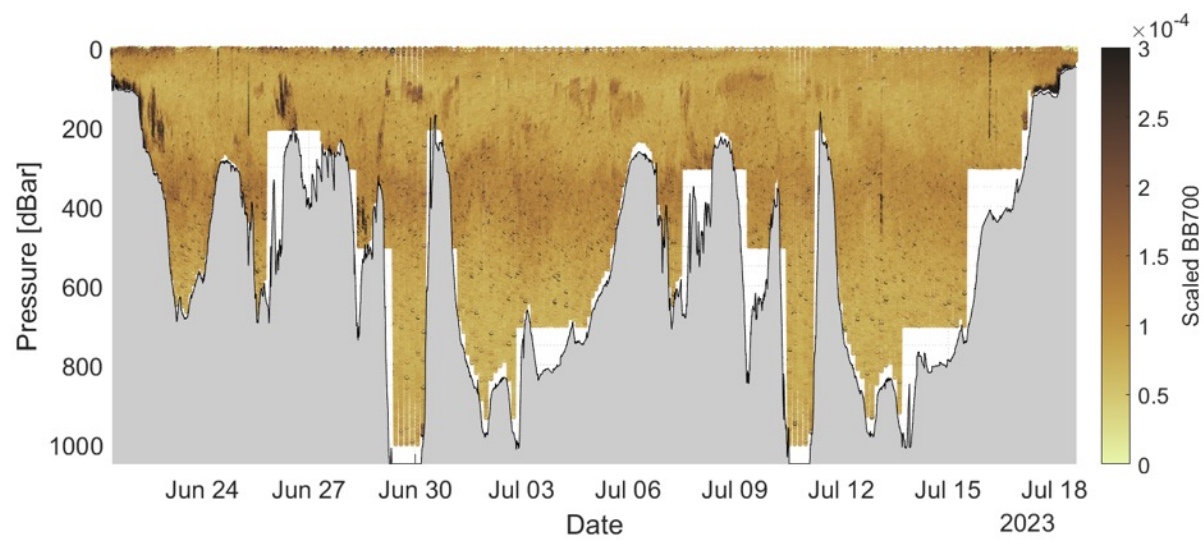
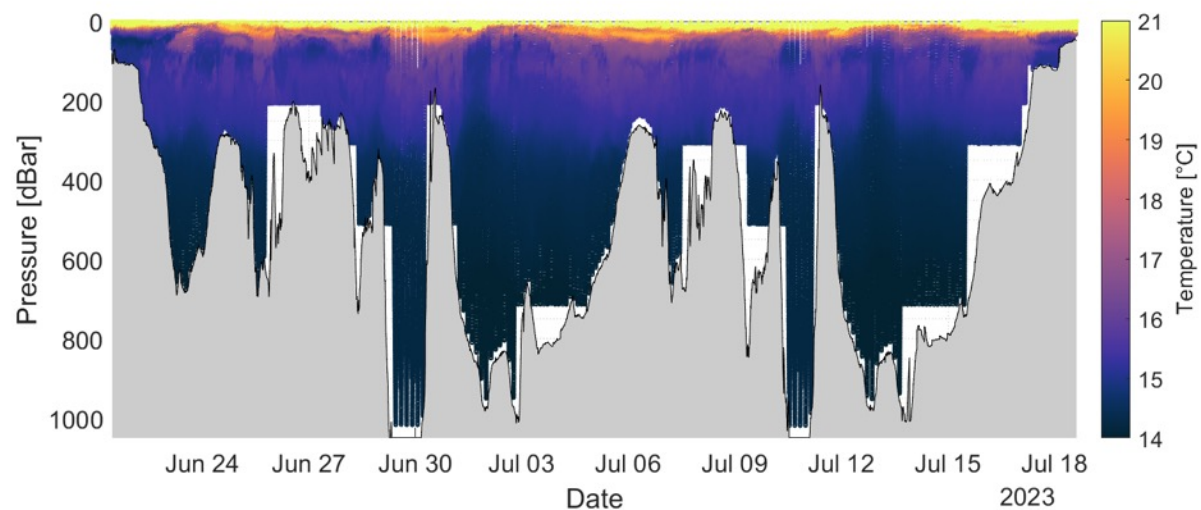
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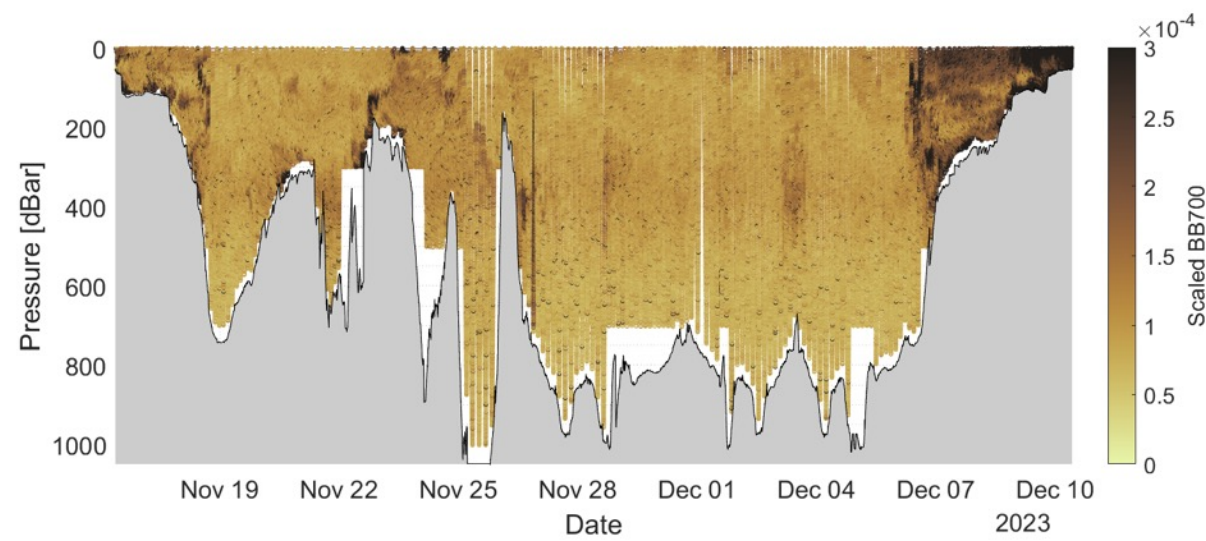
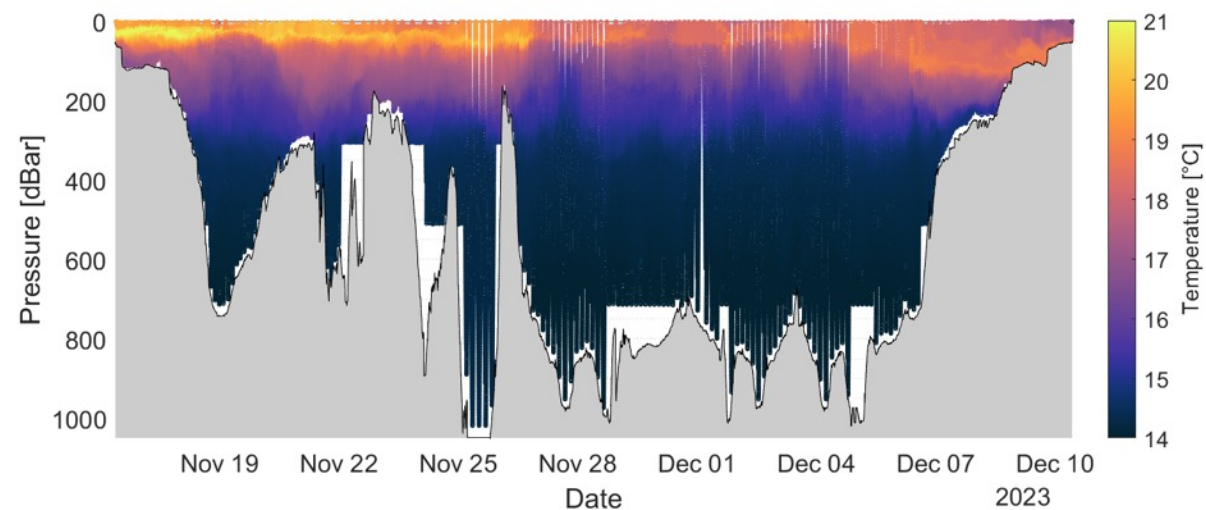
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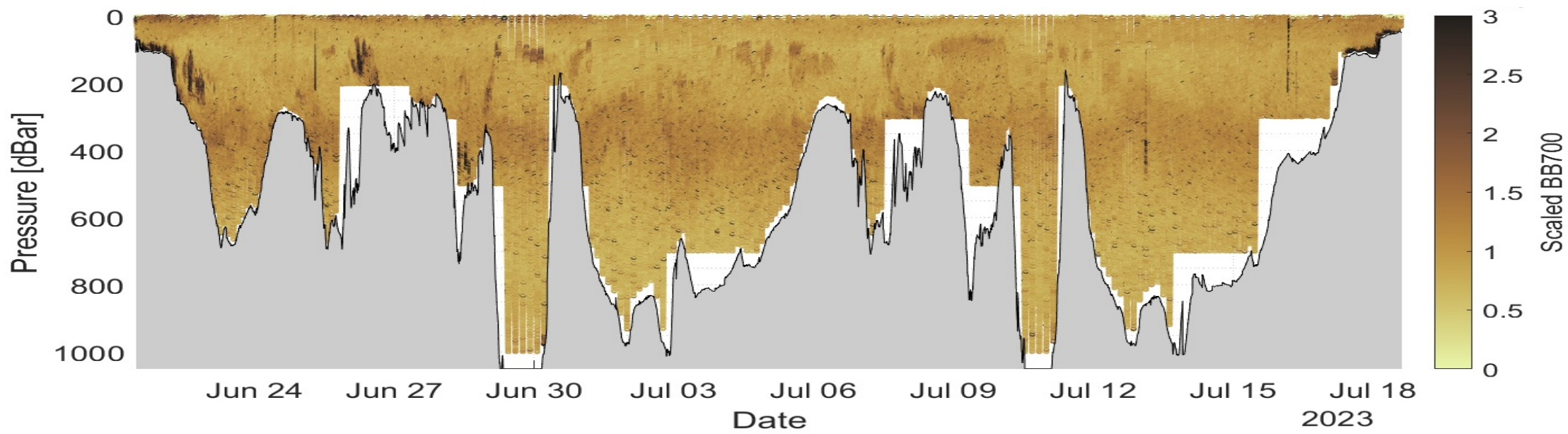
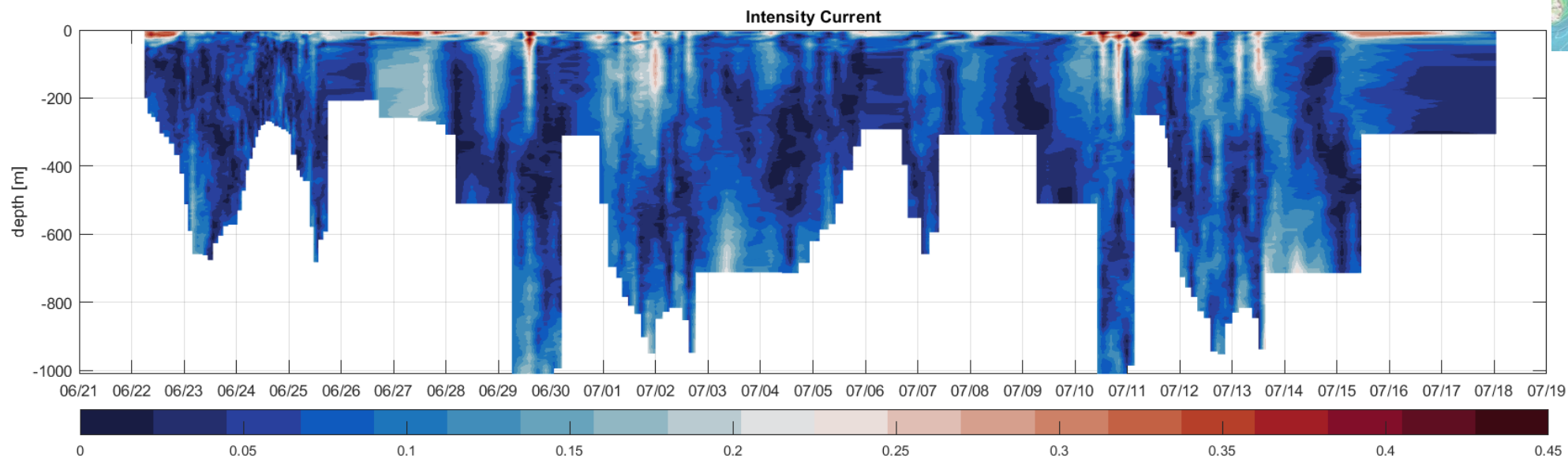
Summer



Winter



Summer ADCP measurements



We also have UVP6 imagery !



Latest count of objects in EcoTaxa: 380 millions!

The new Zooprocess 8.13 is available. Access the website of the Quantitative Imagery Platform of Villefranche for documentation, manuals, literature and registering to training sessions.

Explore images

As a visitor, you have free access to the specimens that have been already identified by taxonomist experts.
You can explore the database by navigating along the UniEuk taxonomic tree which aims at unifying taxonomic names and tree according to reliable and curated molecular phylogenies. It encompasses the whole Eukaryotic and

Contribute to a project

As a scientist, you can contribute to the richness of this image database and/or to the collaborative taxonomic annotation effort. Images are organised in projects which should be consistent in terms of sampling and imaging techniques. We provide tools to support the annotation of large image datasets by supervised machine learning prediction.

Particle module

The PARTICLE module of ECOTAXA is designed to host data from the Underwater Vision Profiler (UVP) and the LIIST instruments.
It permits to:

- Load particle data and associate them with CTD data and zooplankton images loaded and annotated in Ecotaxa

Update view & apply filter

Select all



Display ▾

Status All ▾



1000 ▾



200 ▾



Taxonomy filter ⓘ

Other filters



Hyperiidea

0

14

Ostracoda

0

84

Ctenophora < Metazoa

0

417

▼ Hydrozoa

0

810

Narcomedusae

0

1

Siphonophorae

0

99

small-bell < Hydrozoa

0

5916

Limacinidae

0

1

▼ Rhizaria

0

4888

▼ Acantharia

0

17

fuzzy

0

24

spiky < Acantharia

0

30

star < Acantharia

0

61

▼ Aulacanthidae

0

240

colonial < Aulacanthidae

0

58

(2)



2 mm

spiky

< Acantharia

(2)



2 mm

spiky < Acantharia

(2)



2 mm

spiky

< Acantharia

(2)



2 mm

spiky

< Acantharia

(2)



2 mm

spiky < Acantharia

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2 mm

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2 mm

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2 mm

spiky < Acantharia

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2 mm

spiky < Acantharia

(2)

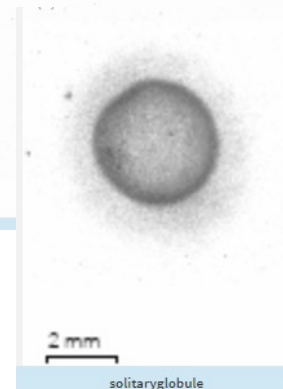
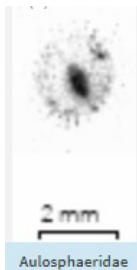
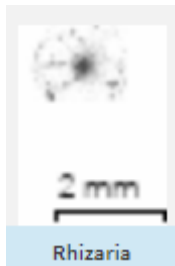
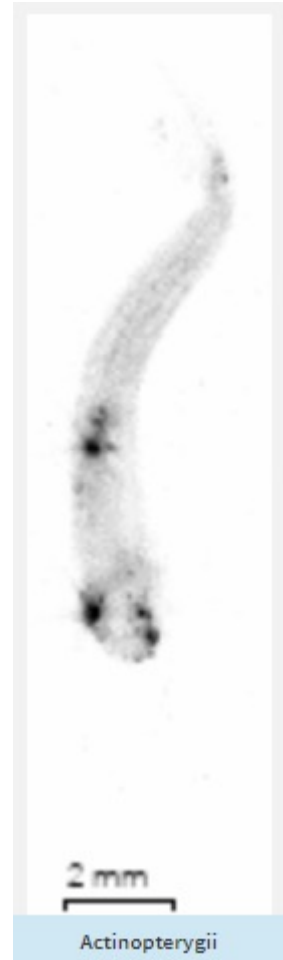
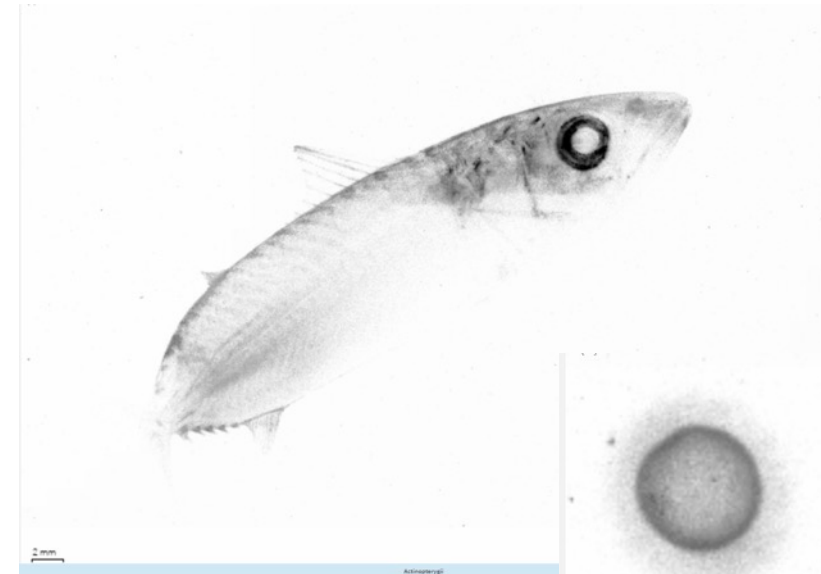
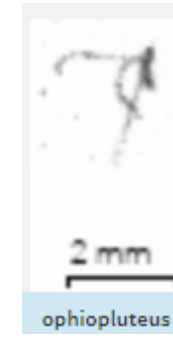


2 mm

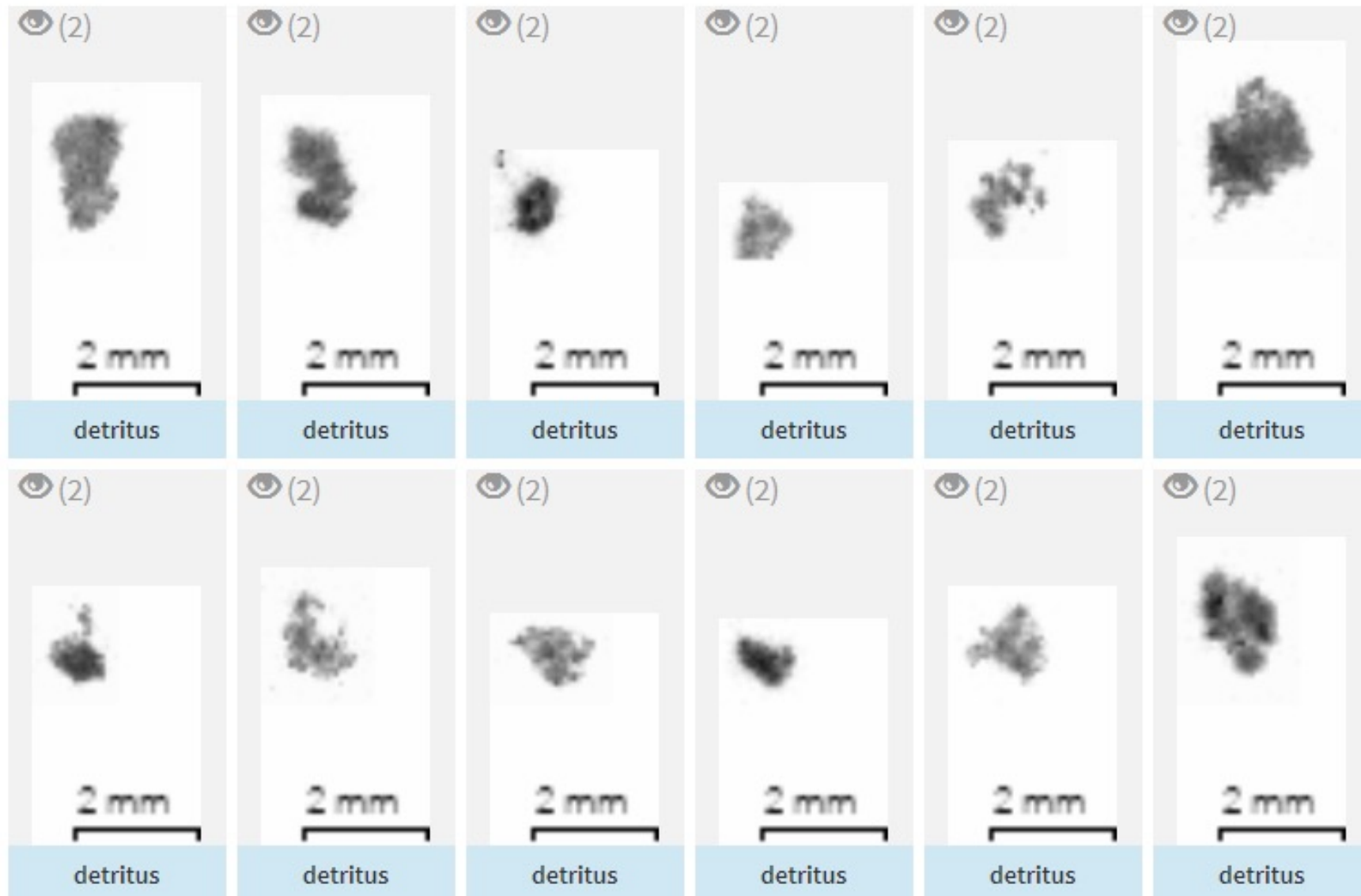
spiky < Acantharia

UVP6 data

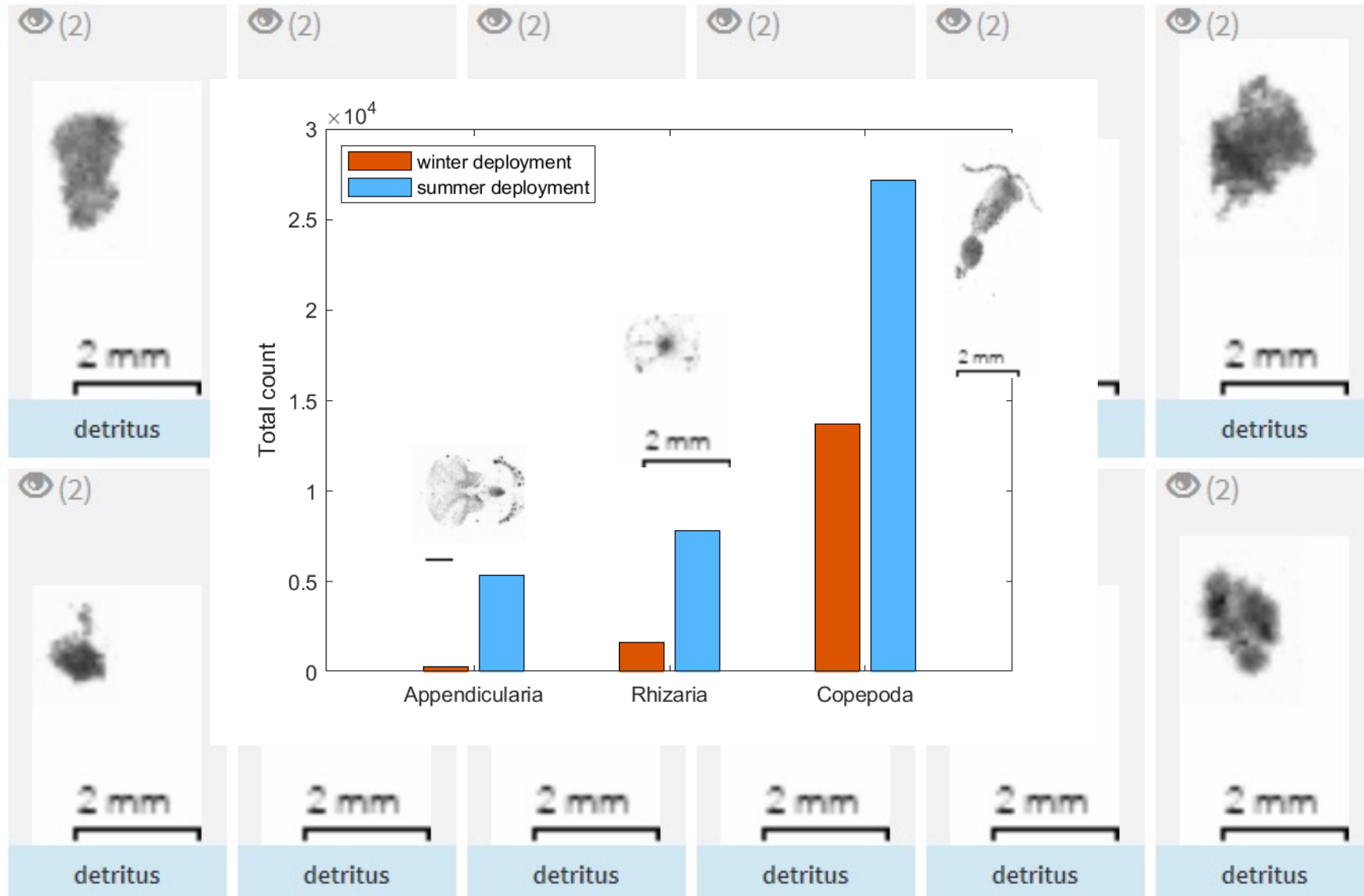
- Train and predicted classifications
- 380 million images, 100 000 per deployment in our project



UVP6 data, >80% detritus



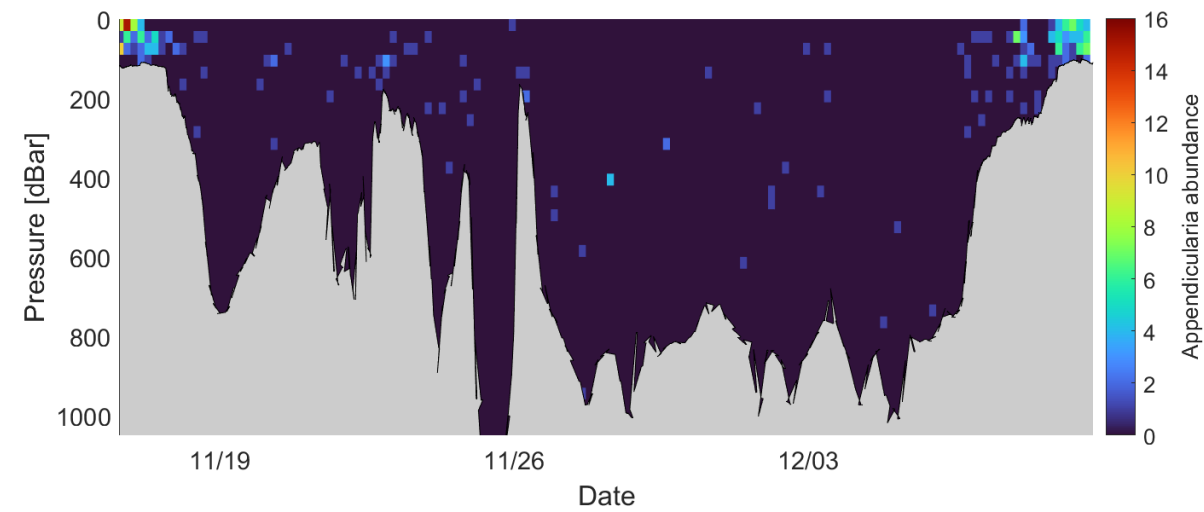
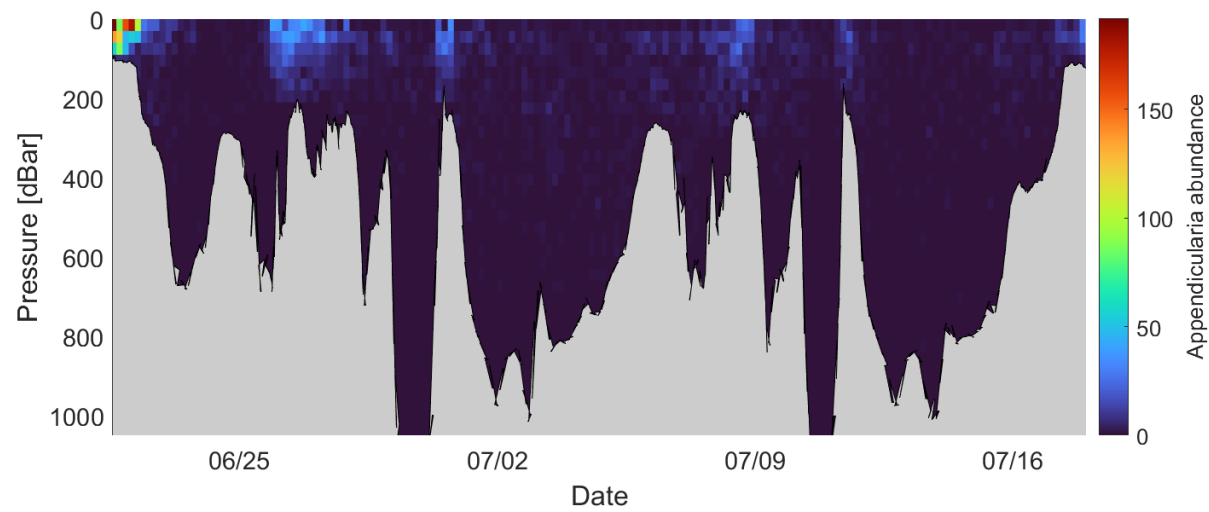
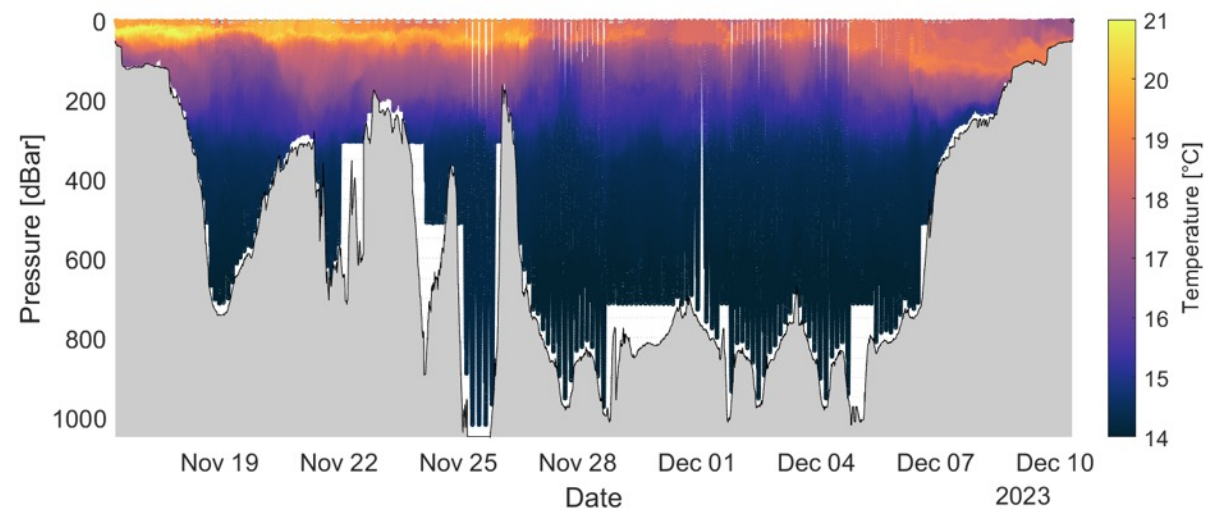
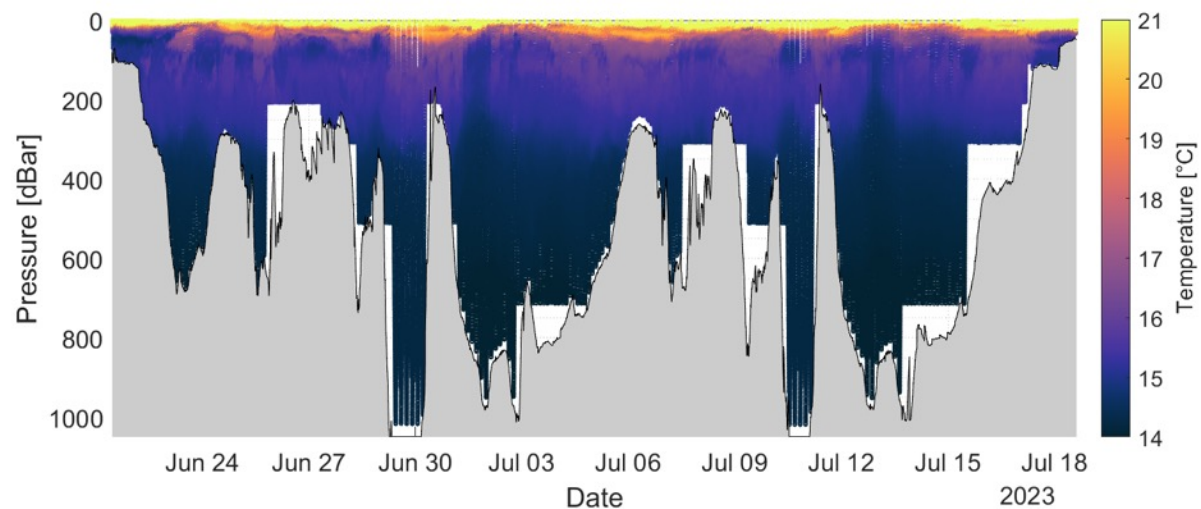
UVP6 data, >80% detritus



Summer



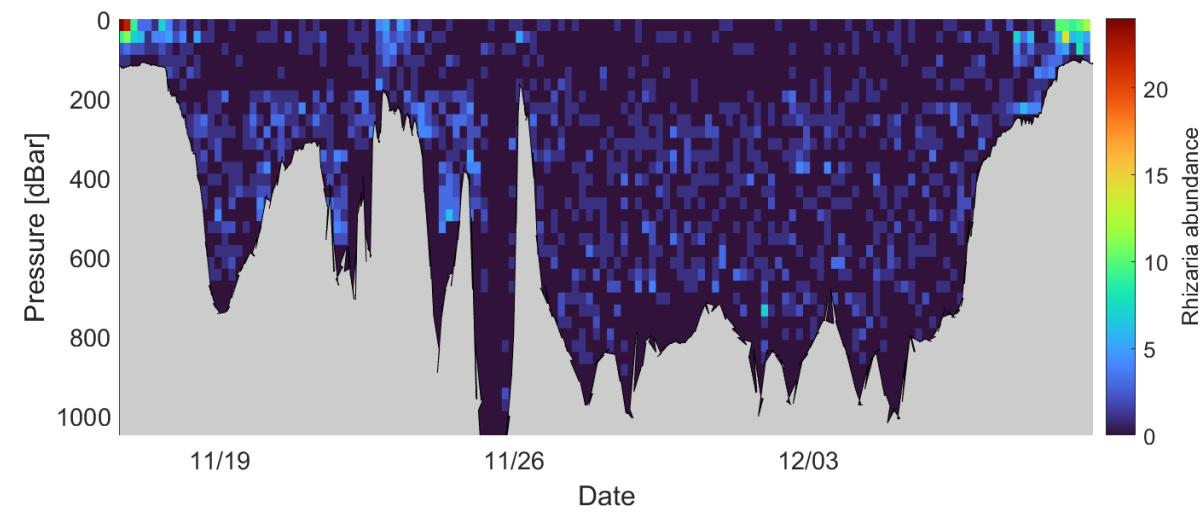
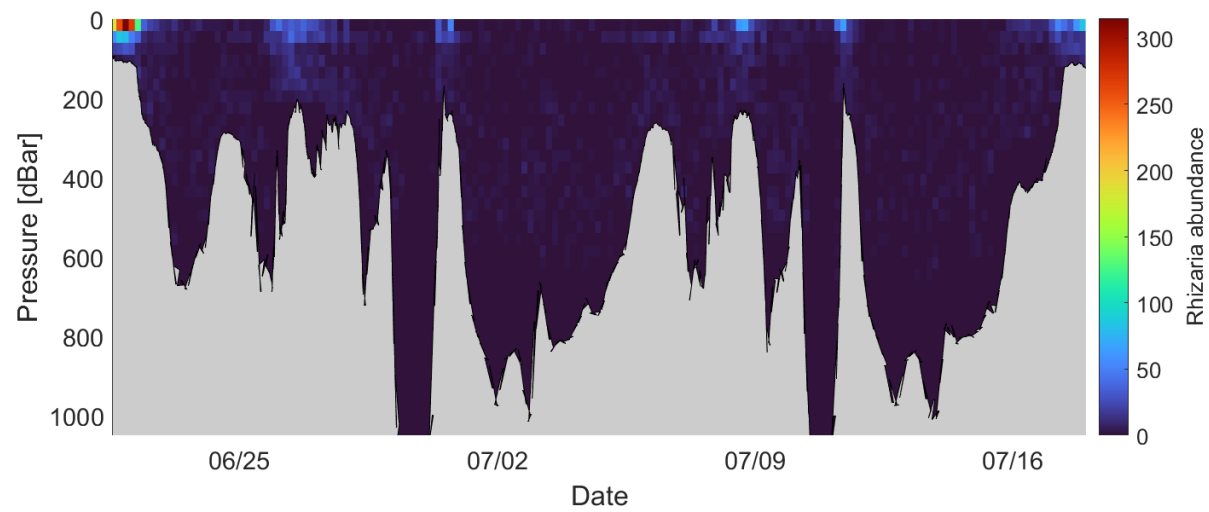
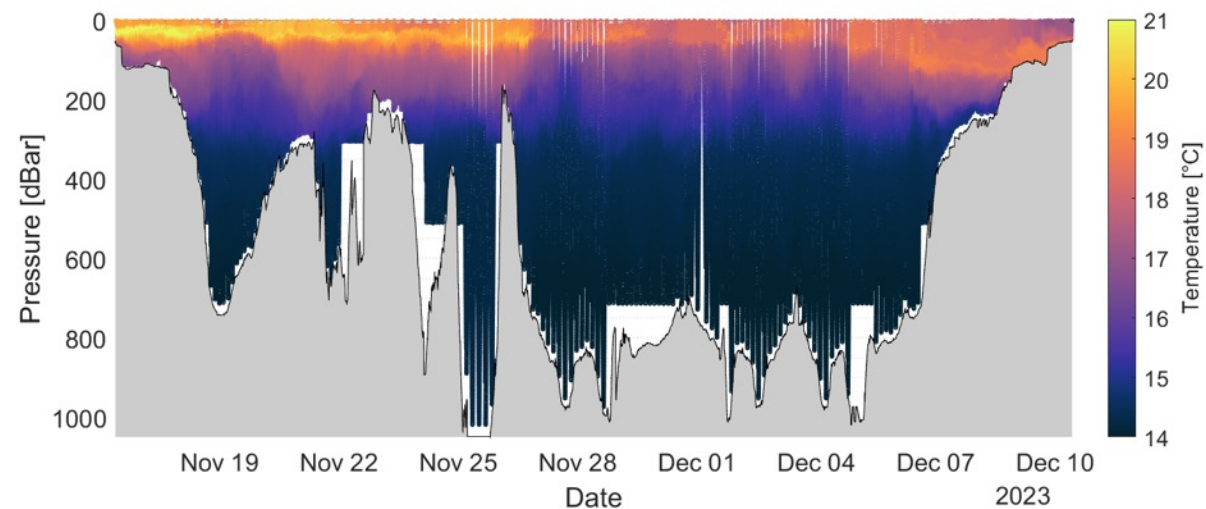
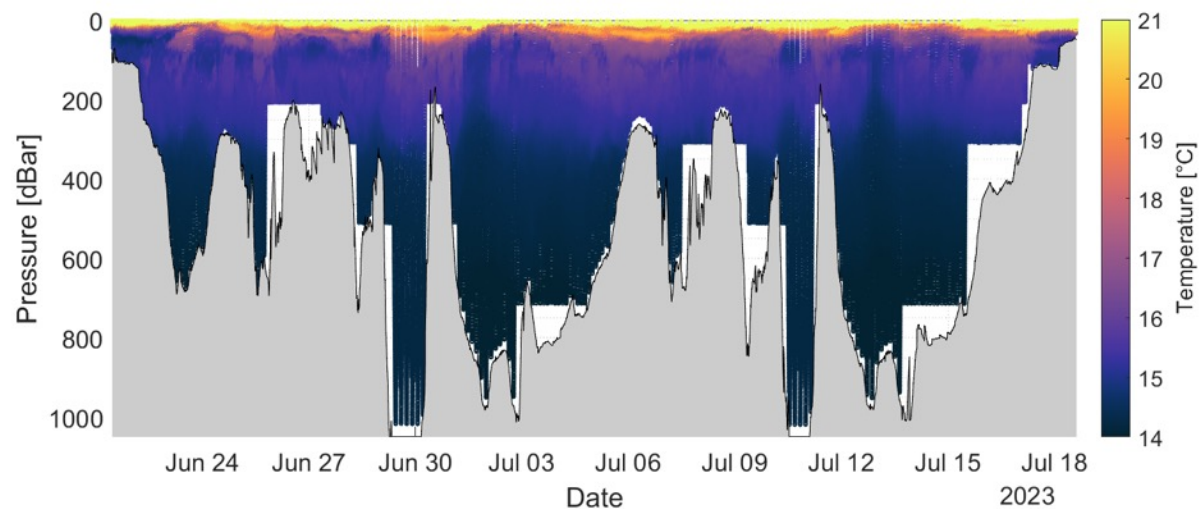
Winter



Summer



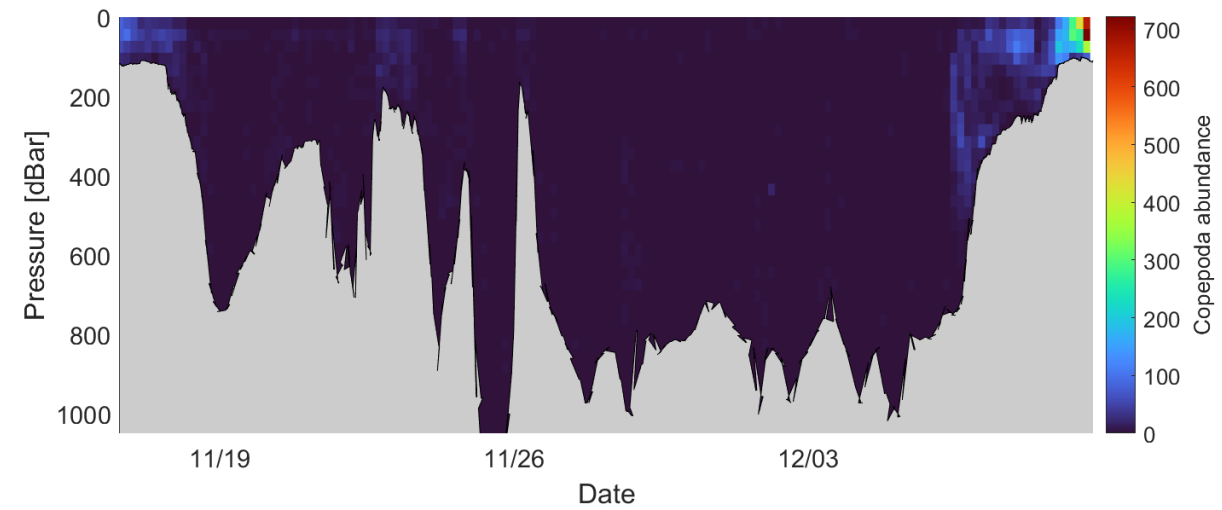
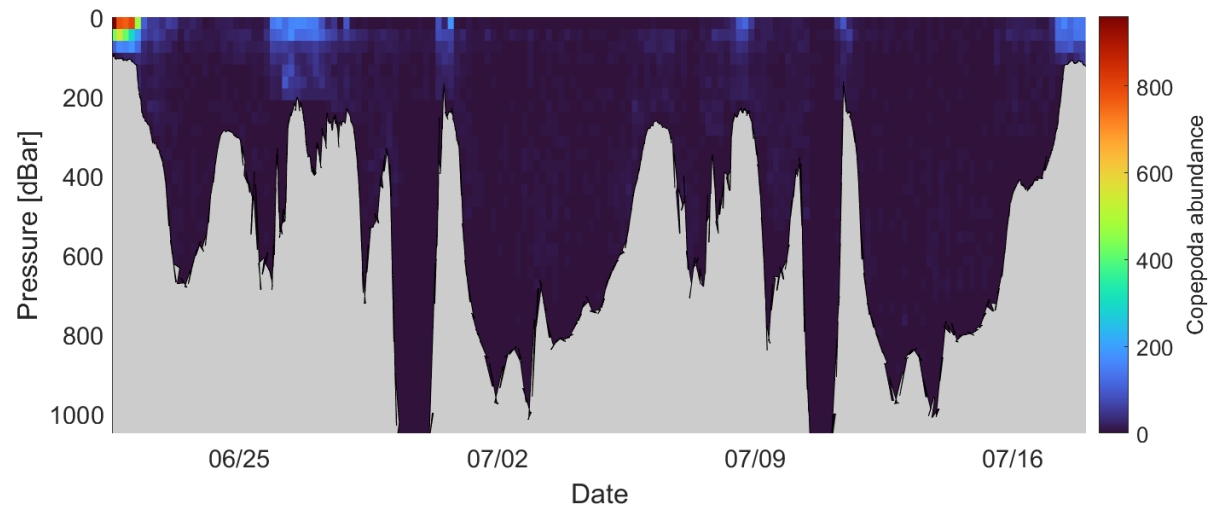
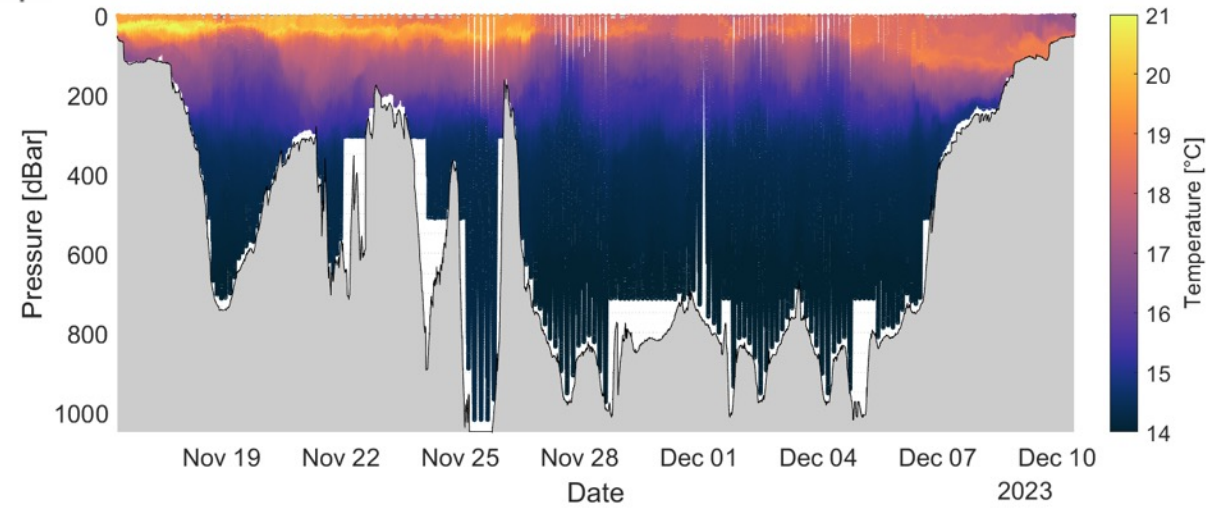
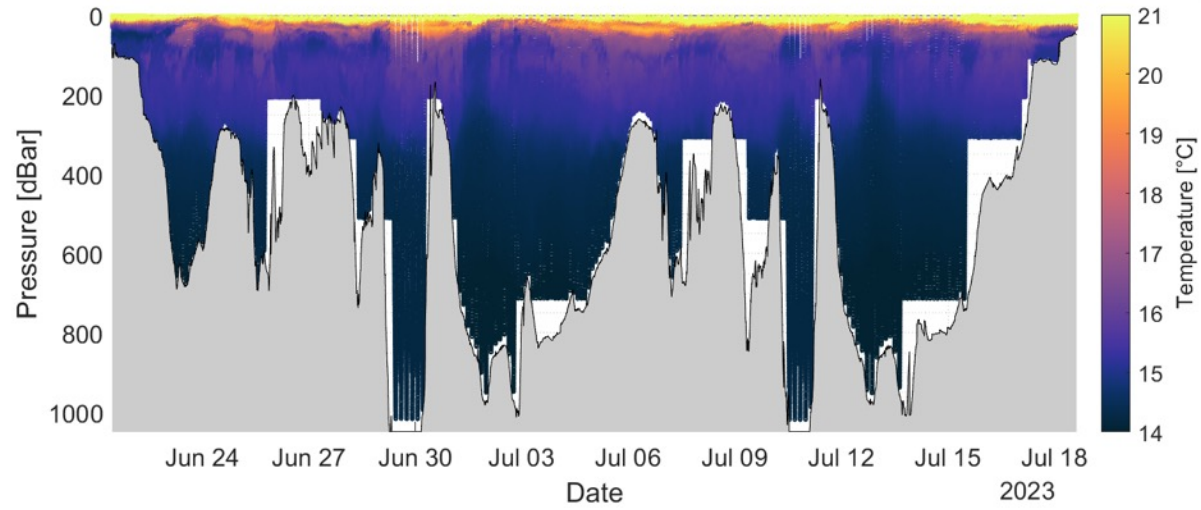
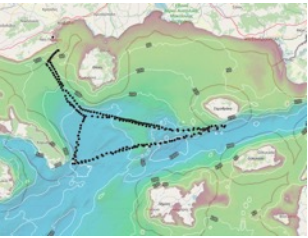
Winter



Summer



Winter



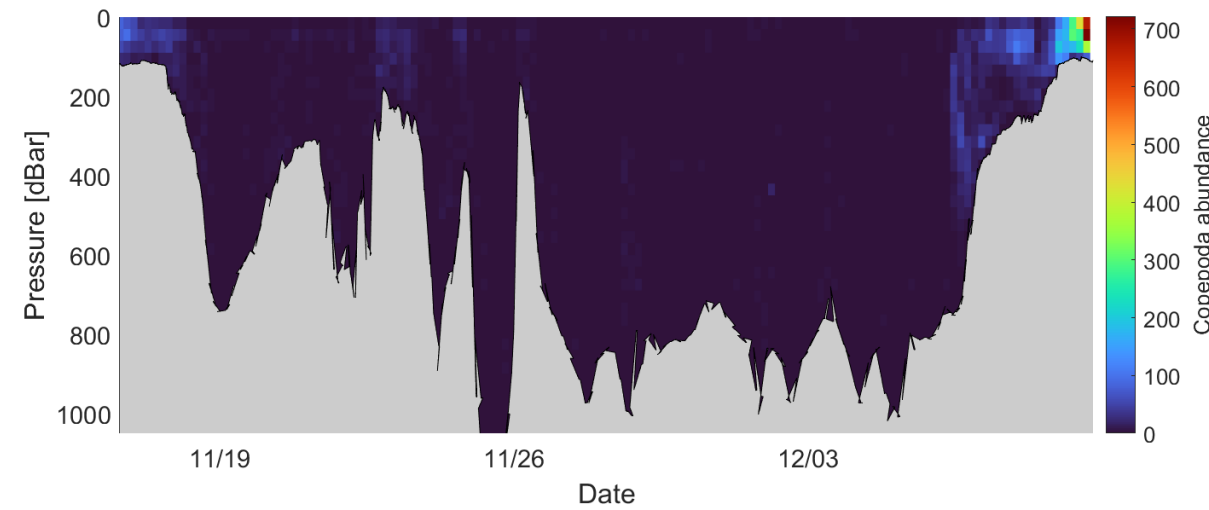
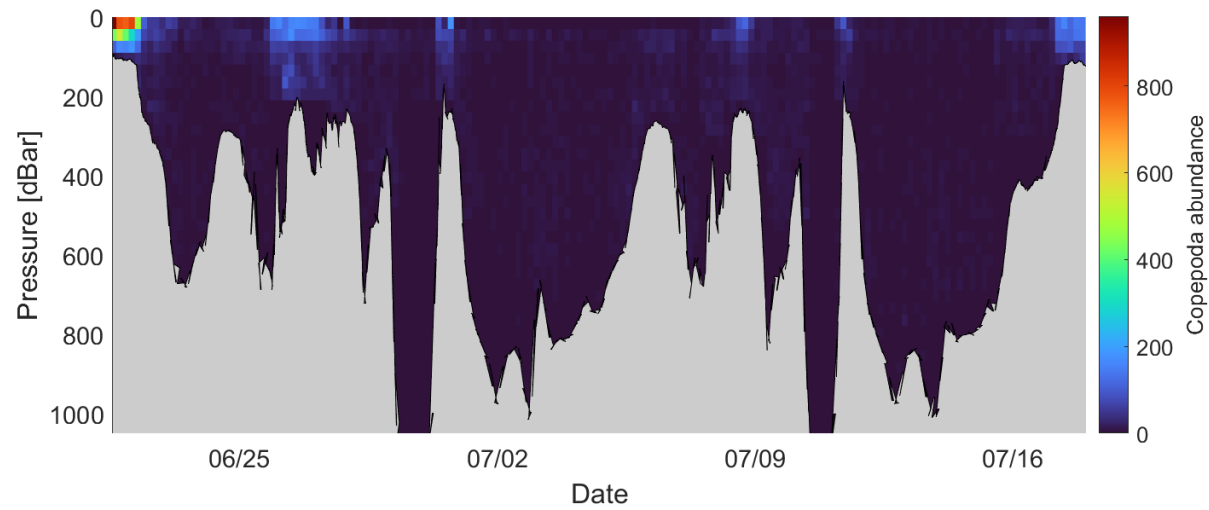
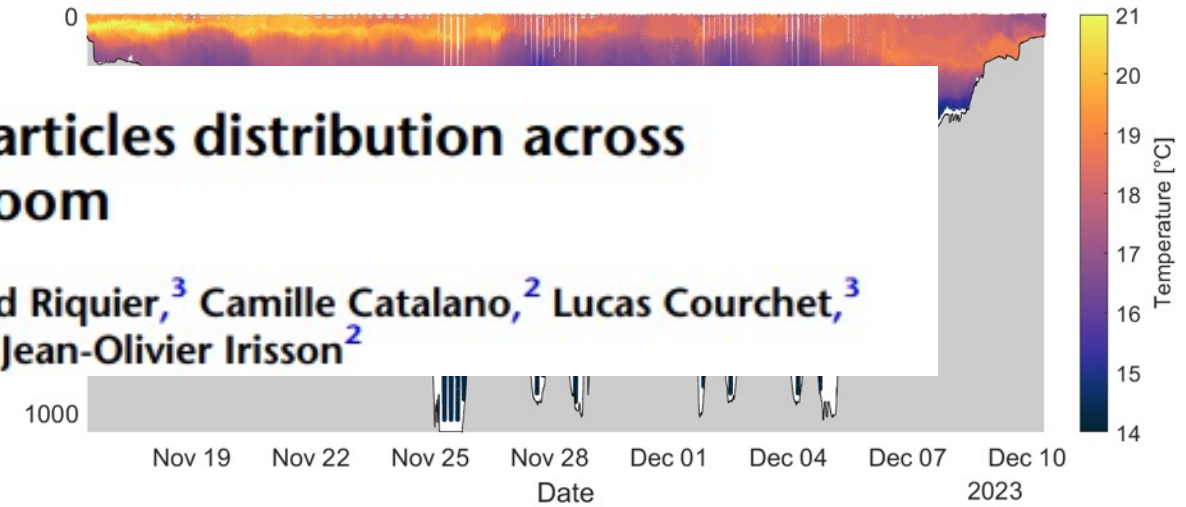
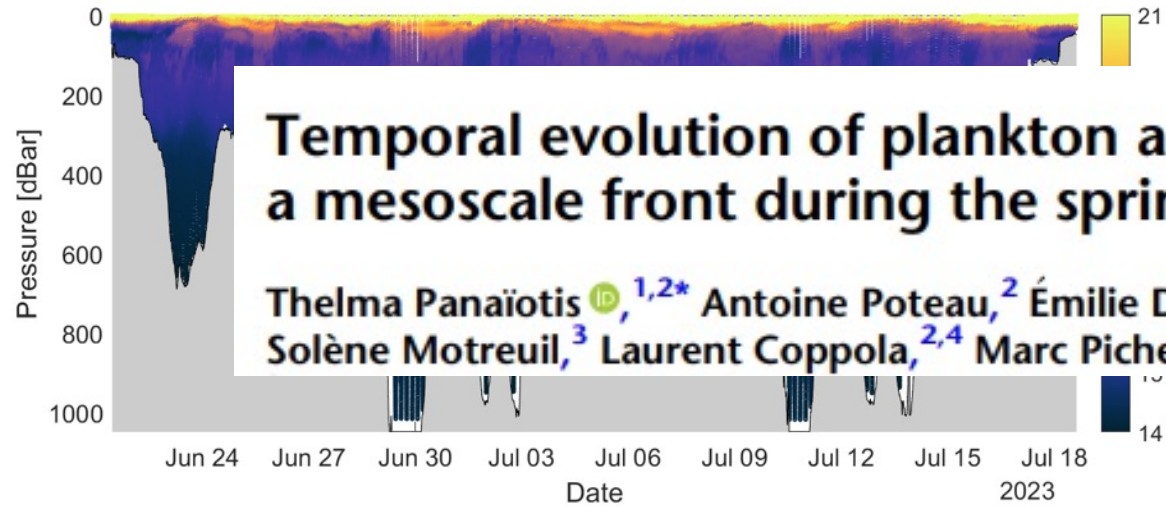
Summer

Winter

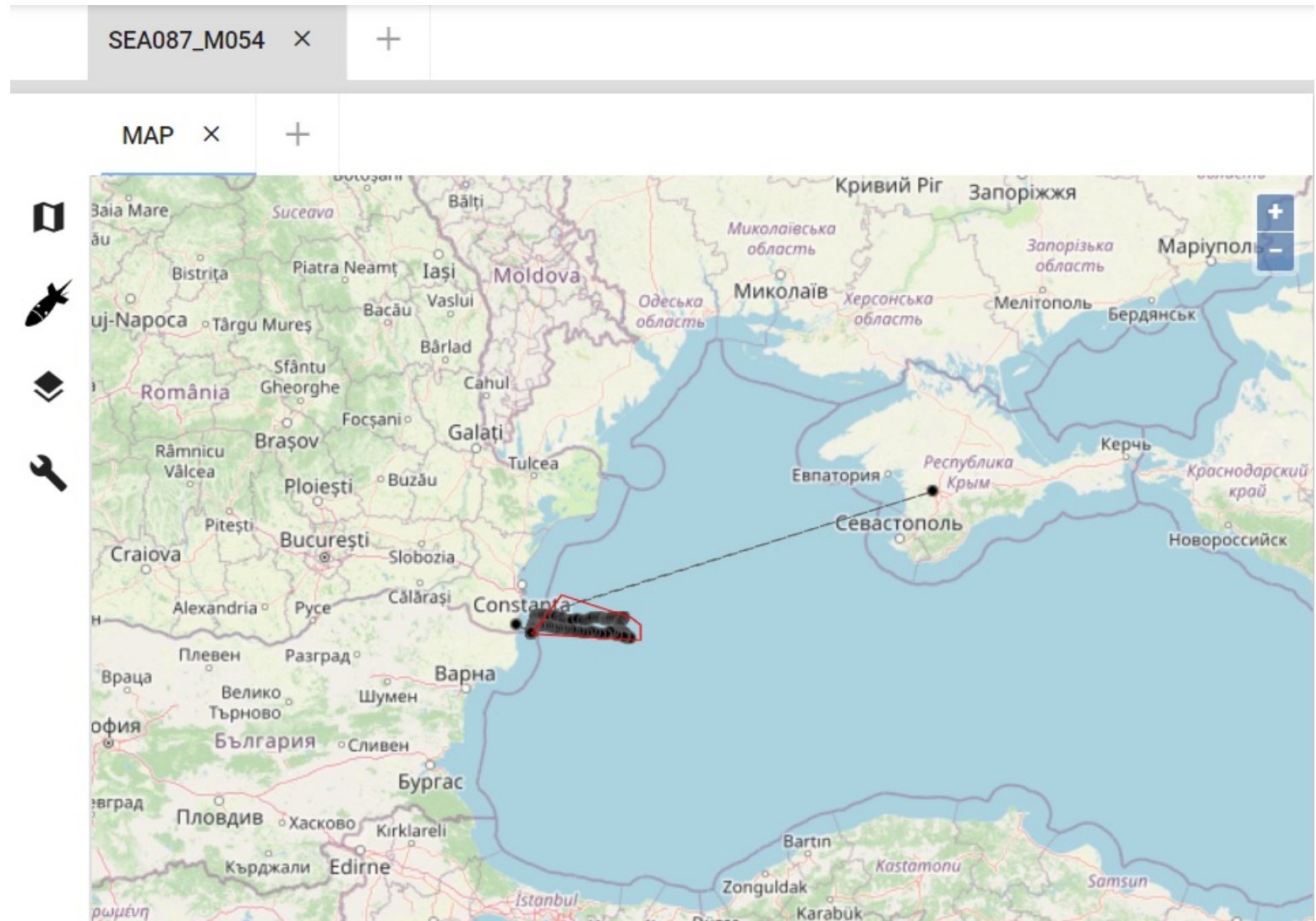
2 mm

Temporal evolution of plankton and particles distribution across a mesoscale front during the spring bloom

Thelma Panaïotis^{1,2*}, Antoine Poteau², Émilie Diamond Riquier³, Camille Catalano², Lucas Courchet³,
Solène Motreuil³, Laurent Coppola^{2,4}, Marc Picheral^{1,2}, Jean-Olivier Irisson²



ILIAD pilot in the Black Sea – fun with GPS...





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ALCEN



Tack tack !

