

# PREBIOSWOT cruise

## SPASSO Images Analysis

30/04/2018 10:03 UTC

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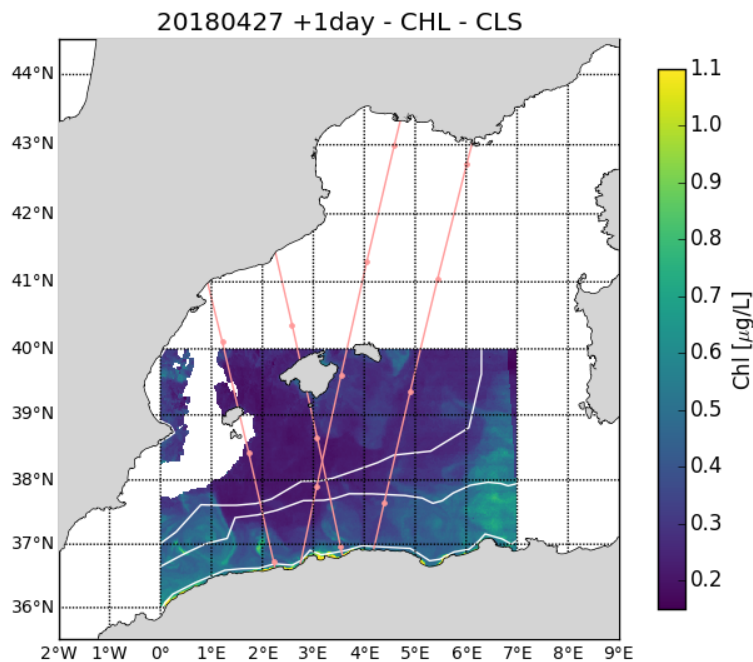
### Executive Summary

We have refined the general strategy determined on yesterday's bulletin and, thanks to the chlorophyll data and other figures, would recommend to go to the FSLE structure inside the eastern SWOT track between (3°E -4.5°E ,38.5°N -39°N ), corresponding to feature b) of yesterday extended to further east than yesterday.

The cruise has normally started today, on April 30, 2018, with the last equipment fittings. The sampling should be performed in the area between 2°E -4°E and 38.2°N -39.2°N (the exact location is still to be determined after a large survey with the Seasoar on the BB). The plan is that the BeautempsBeaupre (BB) will perform a Lagrangian sampling whereas, starting May 5, the Garcia del Cid will achieve a Eulerian CTD sampling on a regular grid.

Otherwise, the second interesting sampling area still remains the east-west zonal shear located south between Ibiza and Majorqua (38-39°N and 1.9-3°E ) corresponding to a) in yesterday's bulletin.

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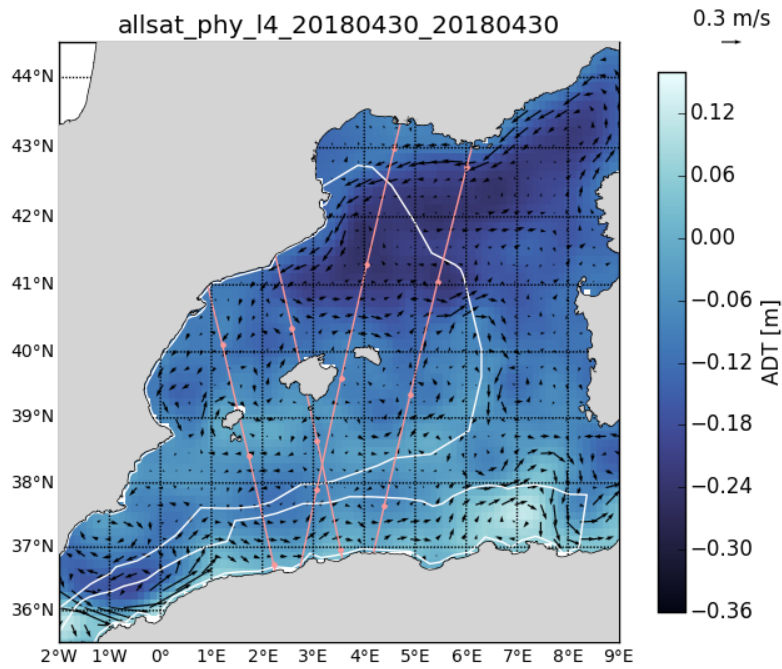


# 1 Ongoing operations and upcoming stations

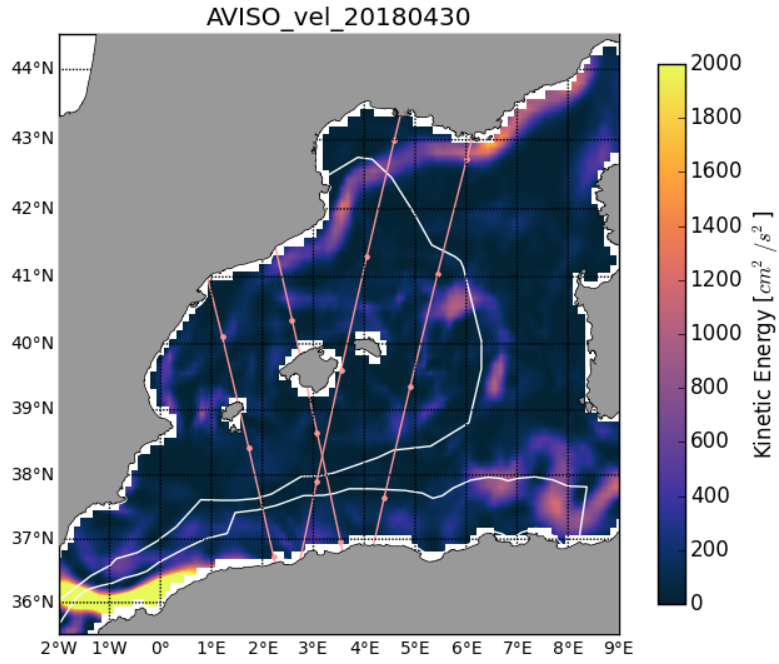
The beginning of the cruise is today, April 30, 2018. A first survey should be performed in the area between 2°E -4°E and 38.2°N -39.2°N with the Seasor in order to determine the exact location of the cruise sampling. On May 5th, the Garcia del Cid (GC) should arrive in the fixed sampling area and should start a CTD sampling (with casts down to 800 m) on a 10 km regular grid (Eulerian sampling strategy). At the same time the BB would perform a Lagrangian sampling in a smaller area. Drifters deployment could be realized during this Lagrangian sampling.

## 2 Daily figures analysis

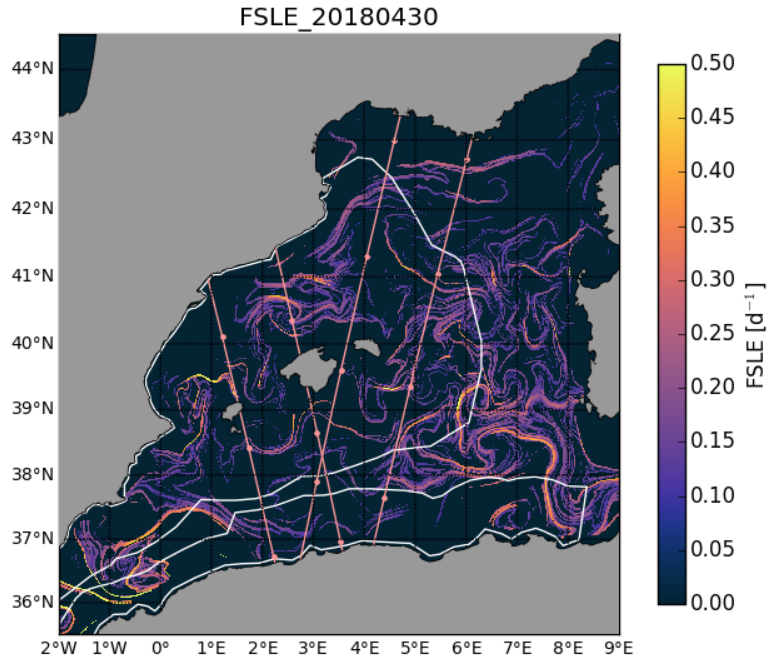
### 2.1 Altimetry, derived currents and Lagrangian analysis



The SWOT area is relatively calm, with stronger currents corresponding to the two FSLE features.

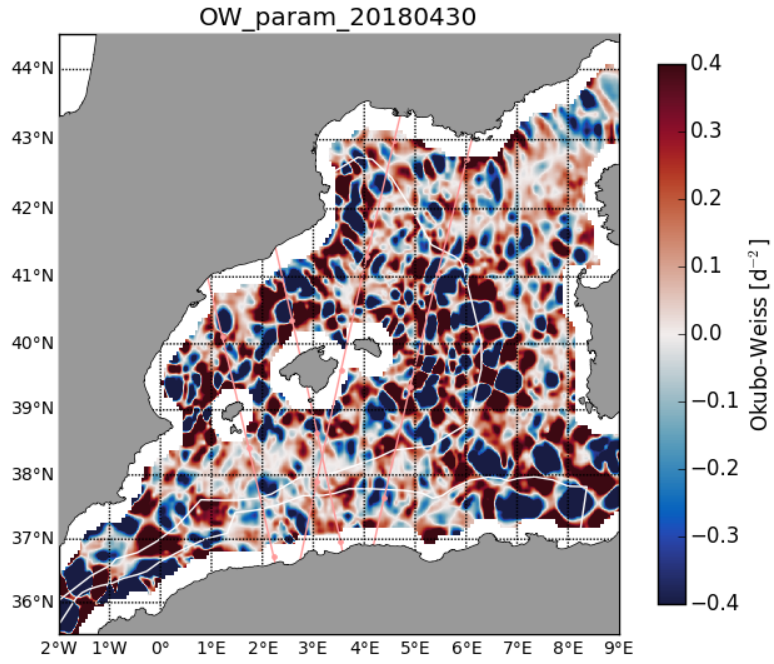


The area between 2-4°E and 38.2-39.2°N has very low kinetic energy.

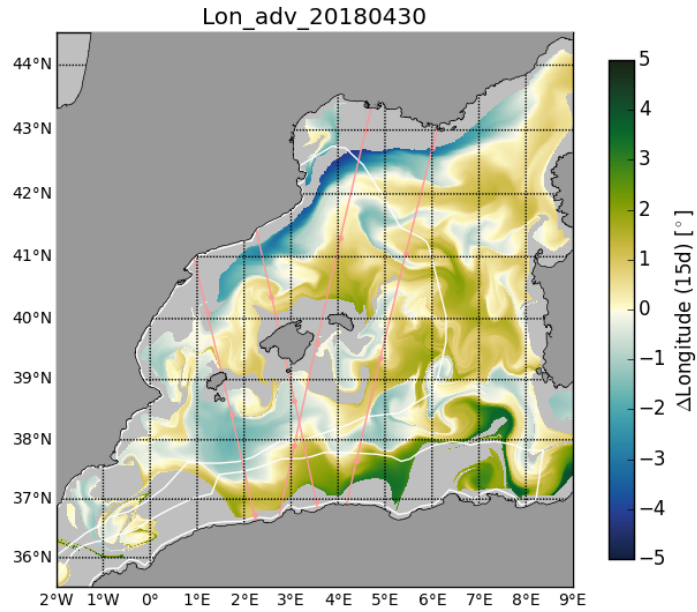
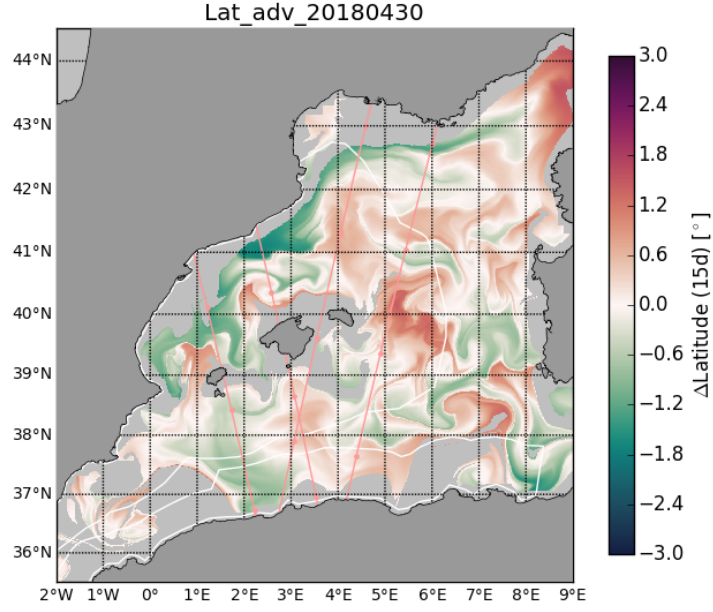


Both interesting FSLE are still there:

- a) Southwest of Majorqua in an oblique direction SW-NE (38 and 39°N and between 2 and 3°E )
- b) Inside the eastern SWOT track (3°E -4.5°E ,39°N -38.5°N )



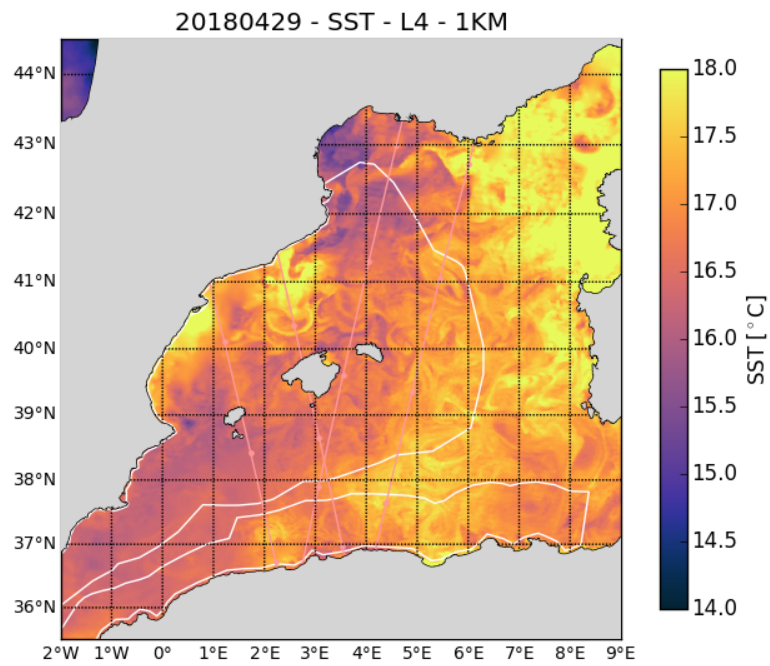
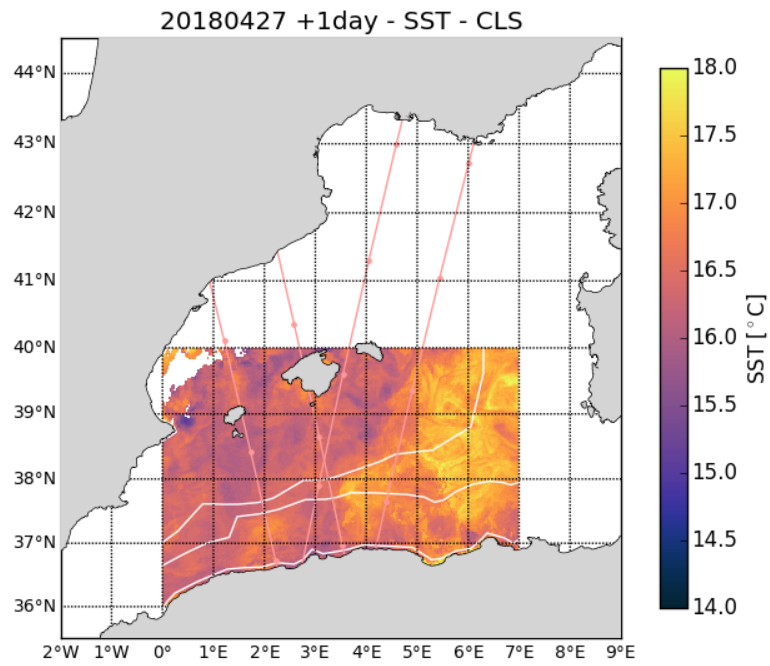
The mesoscale structure mentioned in the last two bulletins (just north of the FSLE feature located between Ibiza and Majorqua) seems to be disappearing. We do not see the eddy mentioned by Francesco and detected in the Sentinel 1 SAR product, centered about 4.02667 °E - 37.98664°N .



The Lat\_adv and Lon\_adv images agree with the FSLE structures. These images show that the waters north of the FSLE structure a) seem to have coastal origins, originating either from Majorqua or Ibiza, potentially leading to interesting enrichment with maybe biogeochemical and biological implications. On the Lon\_adv figure, these coastal waters are either grey or yellowish green. On the Lat\_adv figure, these coastal waters are either grey or greenish. The waters south of the FSLE structure are coming from the East and they are blueish in the Lon\_adv. Nonetheless the chlorophyll data are quite low in the area (see below).

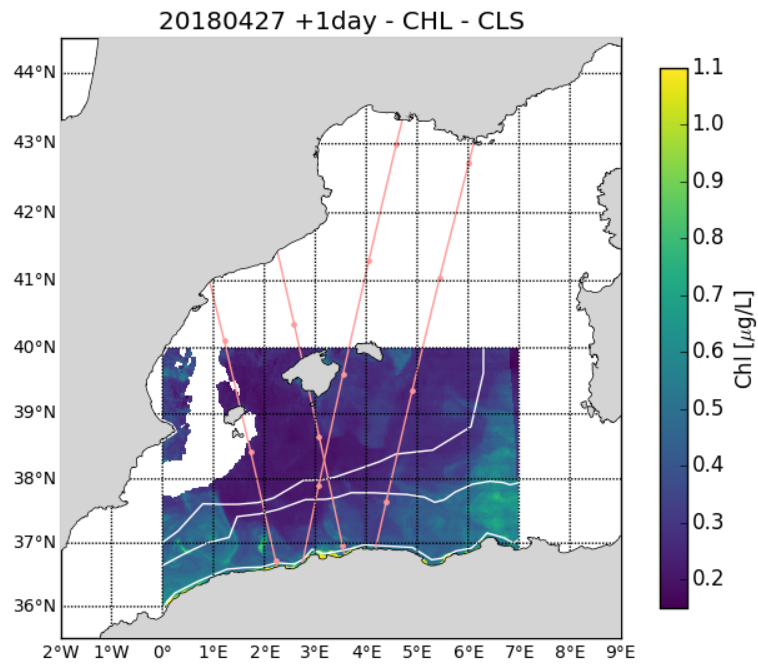
The second area b) showing an interesting FSLE feature exhibits higher chlorophyll content (see below).

## 2.2 SST analysis



The SWOT sampling area has warmed up slightly.

### 2.3 Chlorophyll analysis



The Chl figure is very nice. It exhibits higher chlorophyll content on the eastern track; hence the above recommendation of choosing this FSLE feature (the b), rather than the western FSLE (the a).

## Acknowledgements

The altimetry data are the AVISO Mediterranean regional product:

<http://www.aviso.altimetry.fr/index.php?id=1275>.

The derived currents are processed by SPASSO to derive Eulerian and Lagrangian diagnostics of ocean circulation: OkuboWeiss parameter, particle retention time and advection, Lagrangian Coherent Structures. CLS provided the SST and surface CHL concentration composite products. Sea surface temperature (level 3 and 4, 1 km resolution) and chlorophyll concentration (level 3, 1km resolution, MODISAqua and NPPVIIRS sensors combined (after May 27, 2017) into a new product called MULTI) have been provided by CMEMS Copernicus Marine Environment Monitoring Service (<http://marine.copernicus.eu>). Another SST product (level 4, composite, 1 km resolution) is provided by the Jet Propulsion Laboratory (JPL), Pasadena, CA.

PREBIOSWOT project webpages

(à définir)

SPASSO PREBIOSWOT webpages

<http://www.mio.univ-amu.fr/SPASSO/PREBIOSWOT/>