PREBIOSWOT cruise

SPASSO Images Analysis

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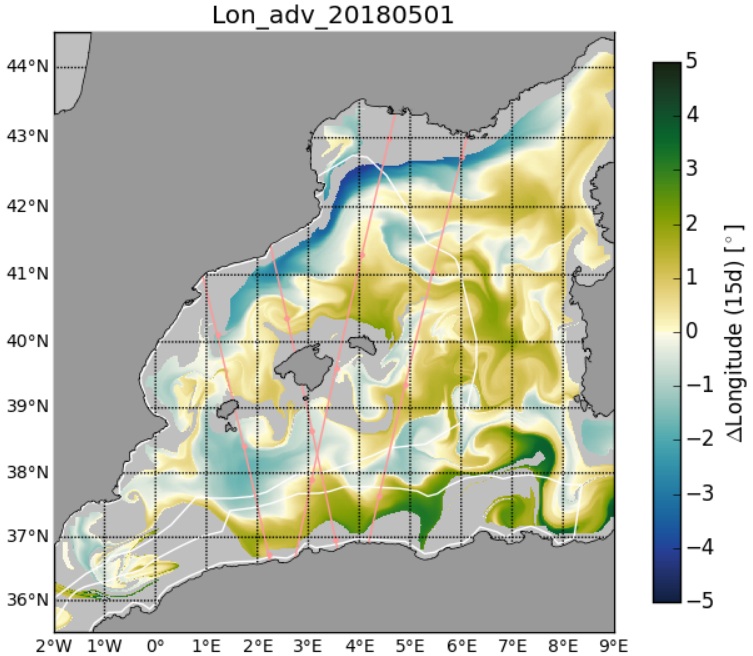
Executive Summary

Since the Chl images are more cloudy than yesterday and there are relatively stronger currents on the western track, we are going back to advise either one of the two zones as two days ago:
a) Southwest of Majorqua (38 and 39°N and between 2 and 3°E),
b) Inside the eastern SWOT track (3°E -4.5°E ,38°N -39.5°N).

The BB 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). The BB will perform a Lagrangian sampling whereas, starting May 5, the Garcia del Cid will achieve a Eulerian CTD sampling on a regular grid.

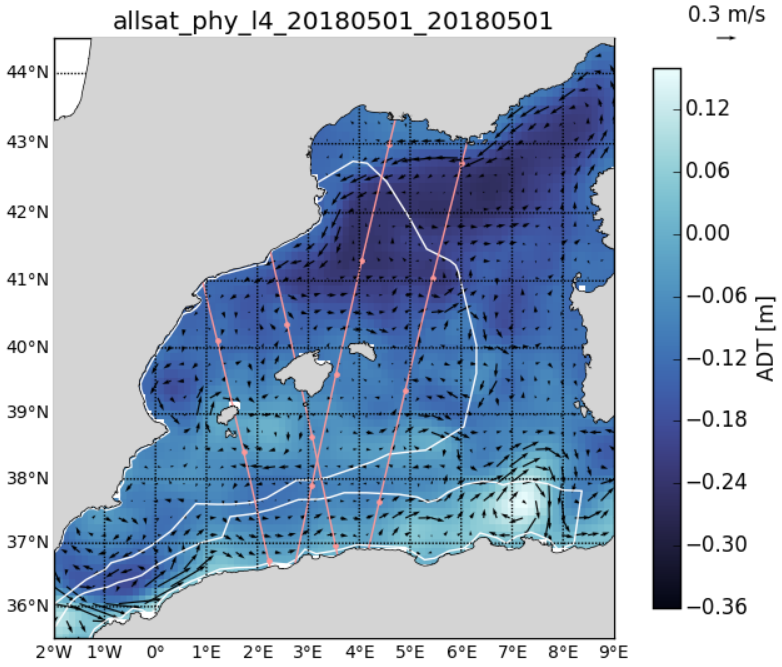


1 Ongoing operations and upcoming stations

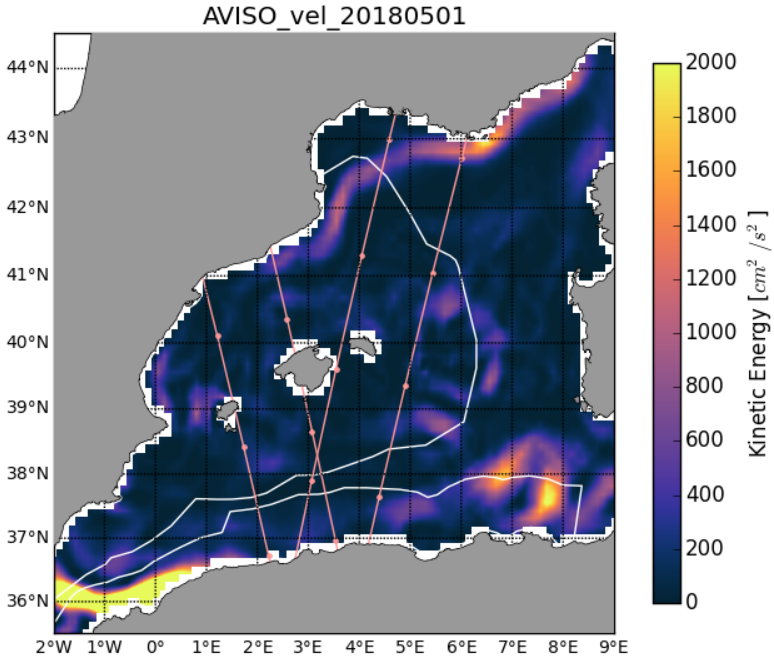
The cruise has started. A first survey should be performed in the area between 2°E -4°E and 38.2°N -39.2°N with the Seasor in order to determine the exact location of the cruise sampling. On May 5th, the Garcia del Cid (GC) should arrive in the fixed sampling area and should start a CTD sampling (with casts down to $\tilde{8}$00 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

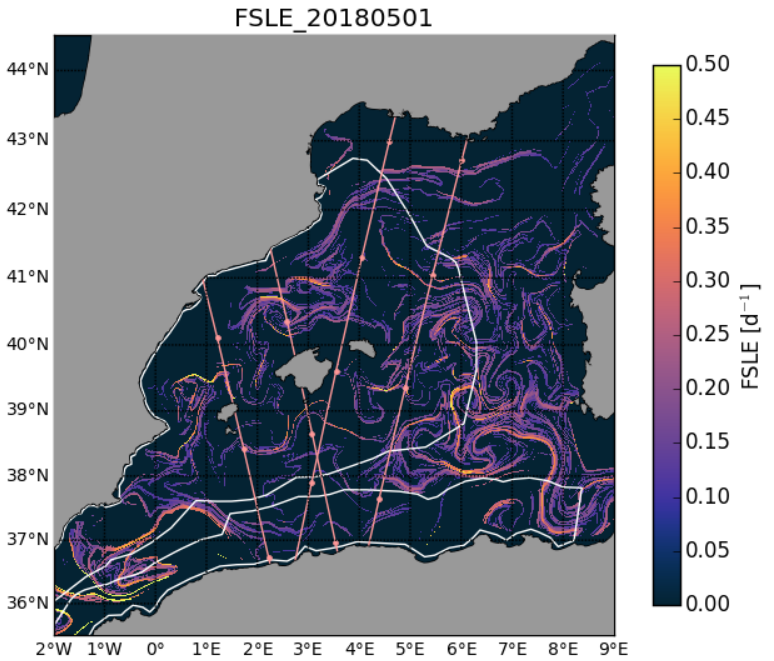
2.1 Altimetry, derived currents and Lagrangian analysis



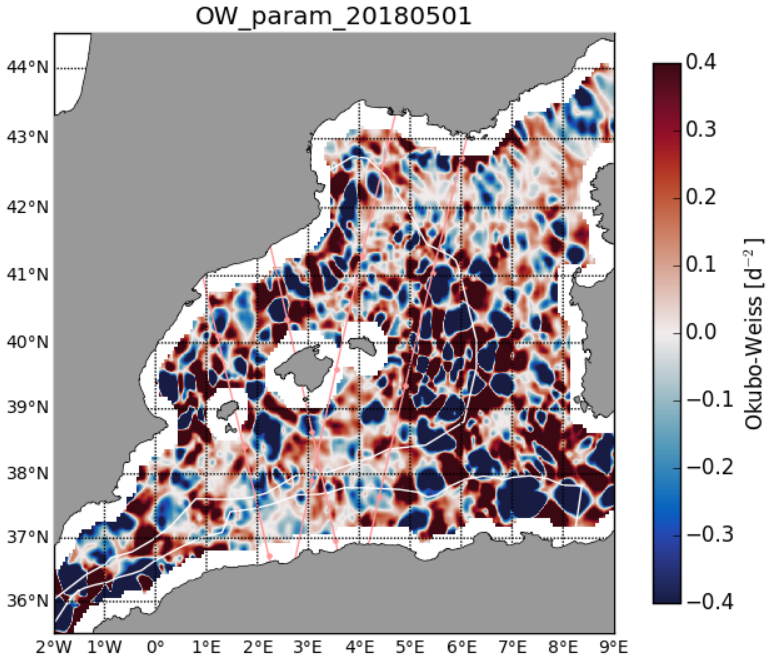
The SWOT area is relatively calm, with stronger currents on the western track north of 38°N .



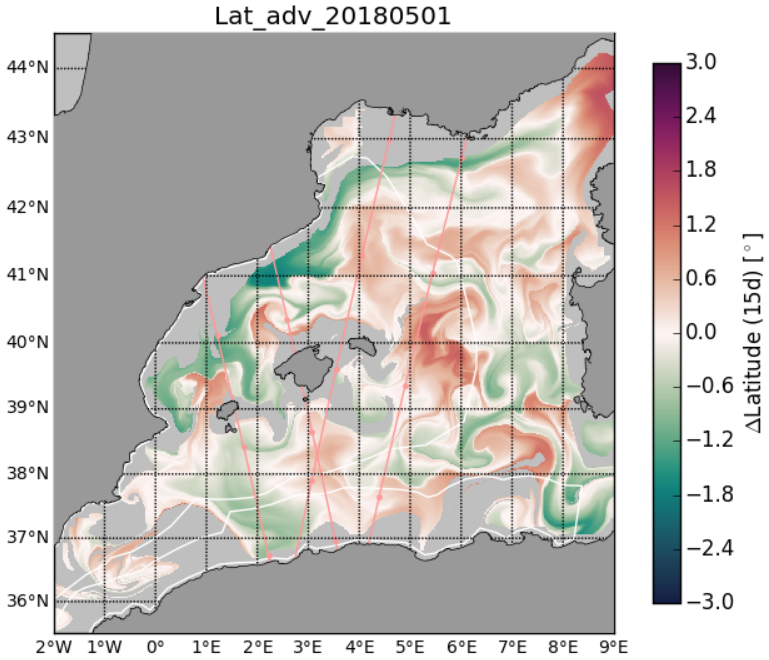
The area between 2-4°E and 38.2-39.2°N has very low kinetic energy, with slightly stronger energy on the western track than on the eastern track.

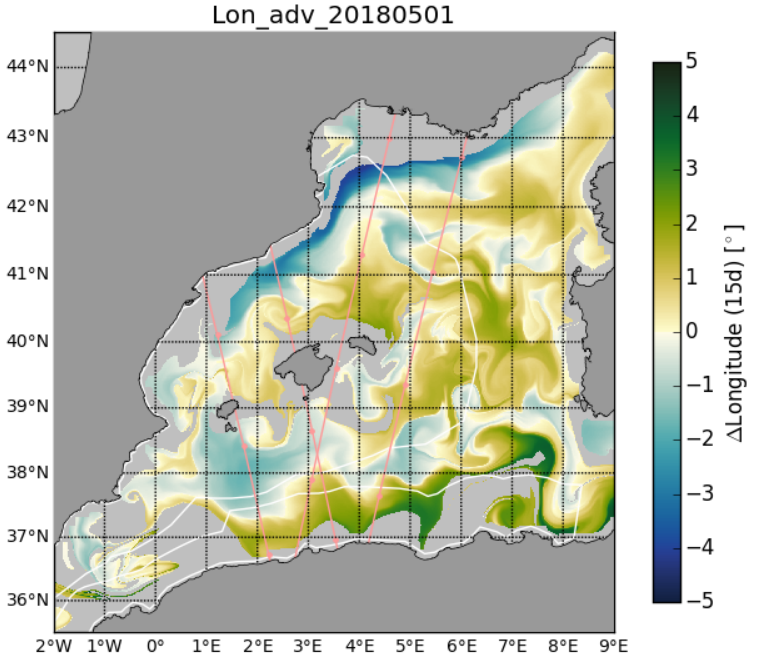


Both interesting FSLE are still there:
a) Southwest of Majorqua (38 and 39°N and between 2 and 3°E)
b) Inside the eastern SWOT track (3°E -4.5°E ,38°N -39.5°N)



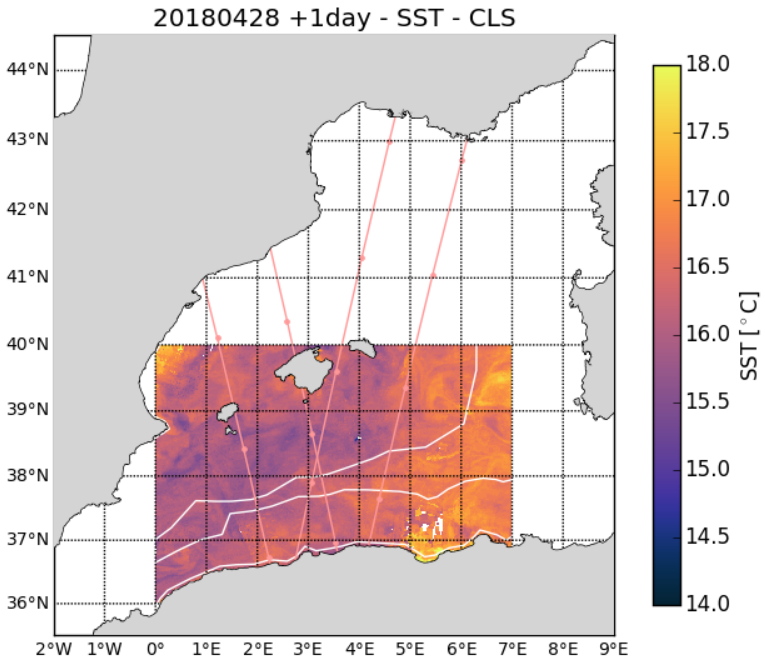
The mesoscale structure mentioned in the last three bulletins (just north of the FSLE feature located between Ibiza and Majorqua) seems to maintain its distorted shape.

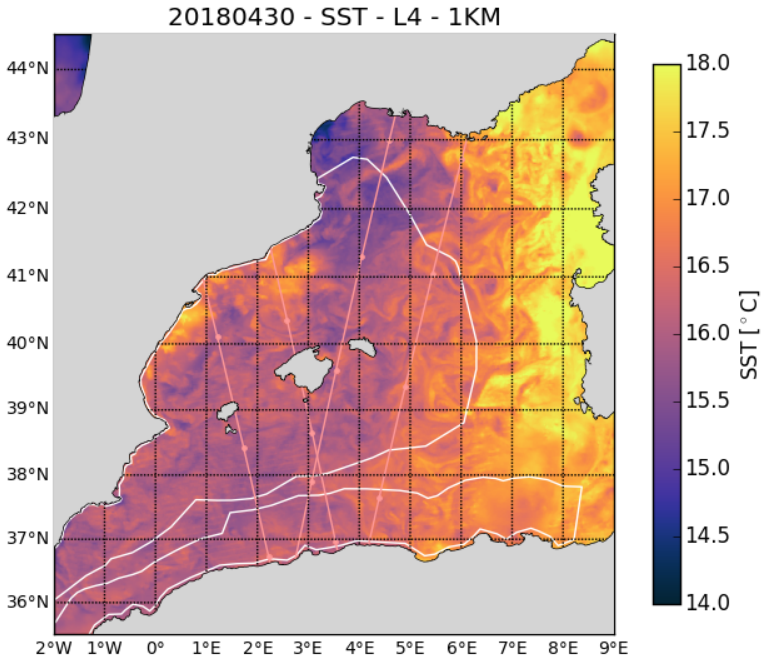




The Lat_adv and Lon_adv images agree with the FSLE structures. These images show that the waters north of the FSLE structure a) seem to have coastal origins, originating either from Majorqua or Ibiza, potentially leading to interesting enrichment with maybe biogeochemical and biological implications. 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 this FSLE structure are coming from the East and they are blueish in the Lon_adv.

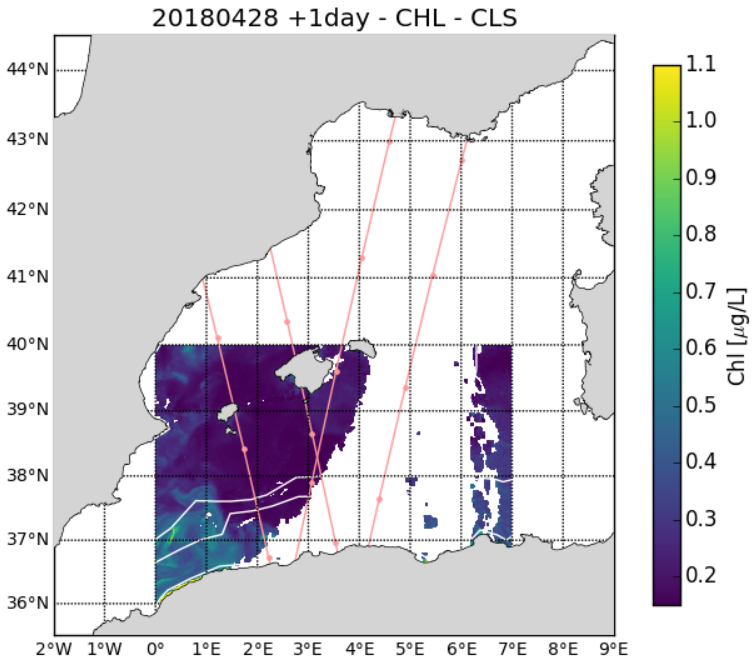
2.2 SST analysis

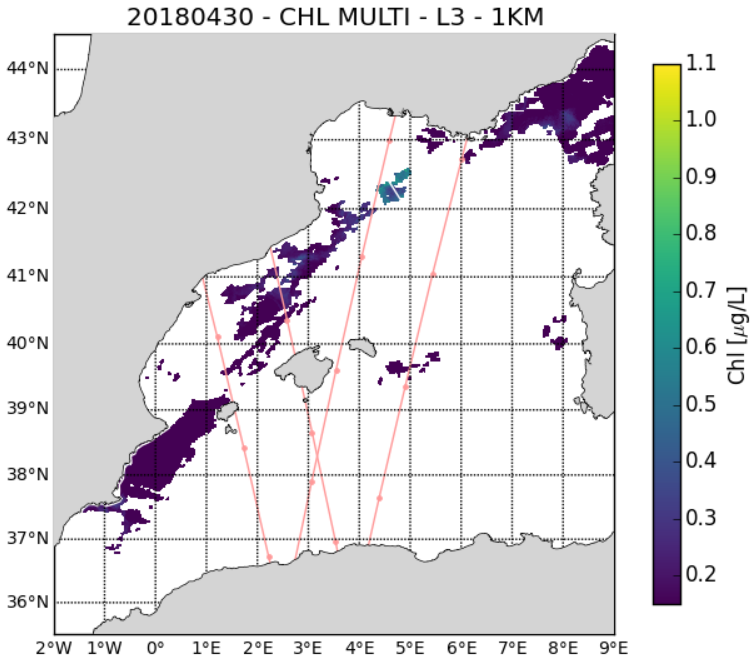


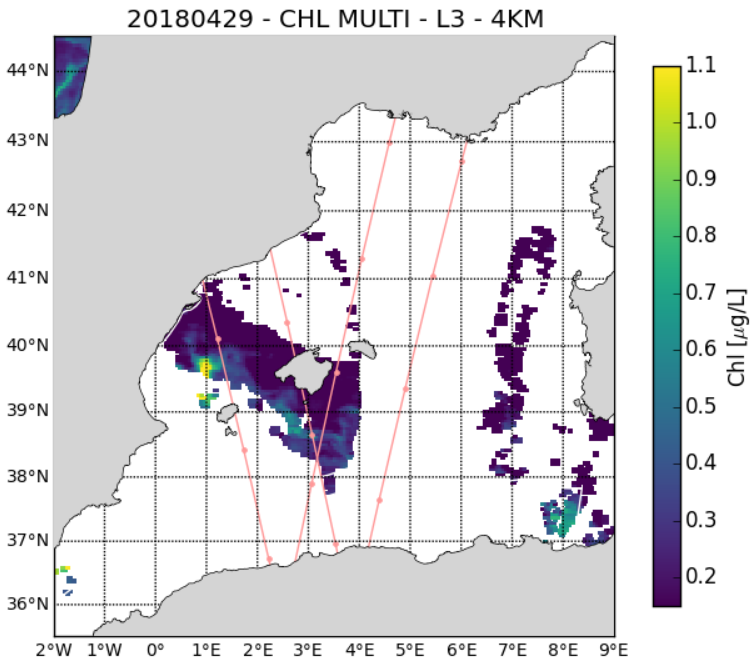


The SWOT sampling area has colder temperature than east of the tracks.

2.3 Chlorophyll analysis

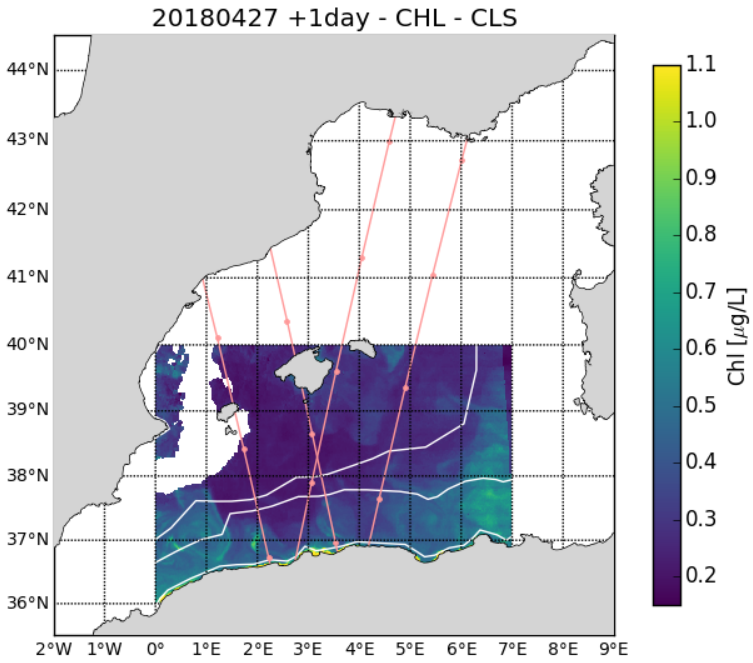






The Chl figures are cloudy.

The last clear Chl figure is from yesterday, April 30 (shown below) and show some Chl on the eastern track.



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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/