

PREBIOSWOT cruise

SPASSO Images Analysis

27/04/2018 09:29 UTC

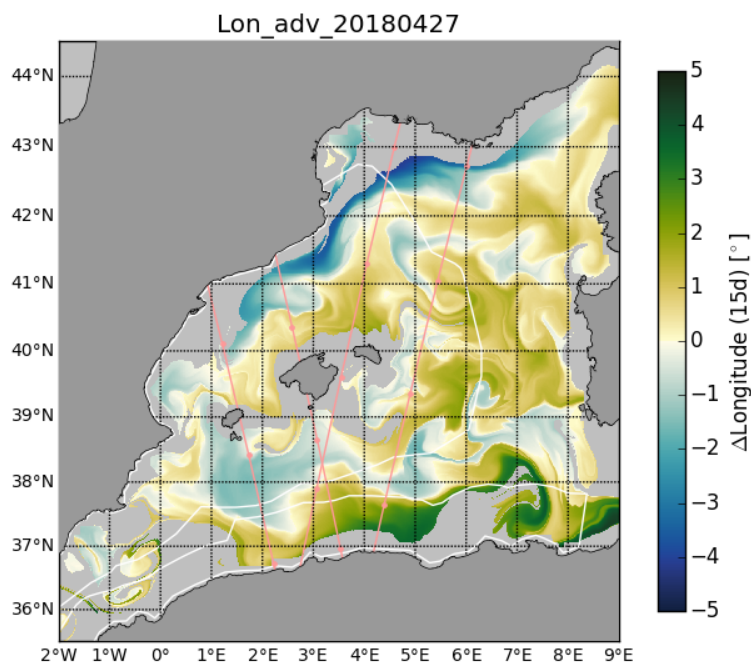
Author(s): L. Rousselet, S. Barrillon, A. Petrenko, A. Doglioli (on board),
L. Rousselet

Executive Summary

The cruise preparation meeting took place on board on April 27 (yesterday) and the general strategy was determined. The cruise is scheduled to start on April 30, 2018. The sampling should be performed in the area between 2°E -4°E and 38.2°N -39.2°N (exact location still to be determined). The BeautempsBeaupre (BB) could perform a Lagrangian sampling whereas at the same time the Garcia del Cid could achieved an Eulerian CTD sampling on a regular grid. The Chl images are even more cloudy today.

We would recommend two interesting sampling areas:

- the east-west zonal shear with the OW structure located south between Ibiza and Majorqua (38-39°N and 1.9-3°E).
 - The FSLE structure inside the eastern SWOT track between (3°E -4°E ,39°N -38.5°N).
-

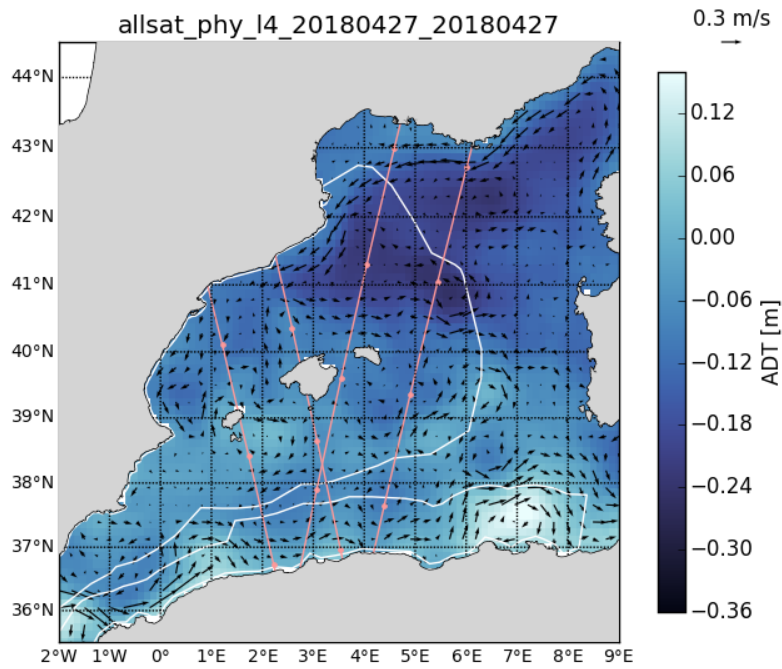


1 Ongoing operations and upcoming stations

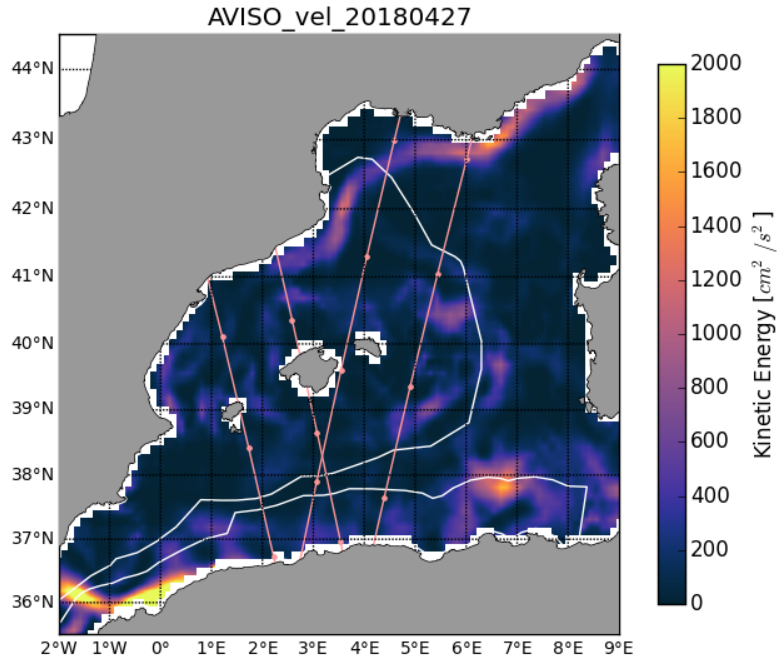
The beginning of the cruise is scheduled for April 30, 2018. A first large sampling should be performed in the area between 2°E -4°E and 38.2°N -39.2°N by the BeutempsBeaupre (BB) in order to determine the exact location of the cruise sampling. On May 5th, the Garcia del Cid (GC) should arrive in the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

2 Daily figures analysis

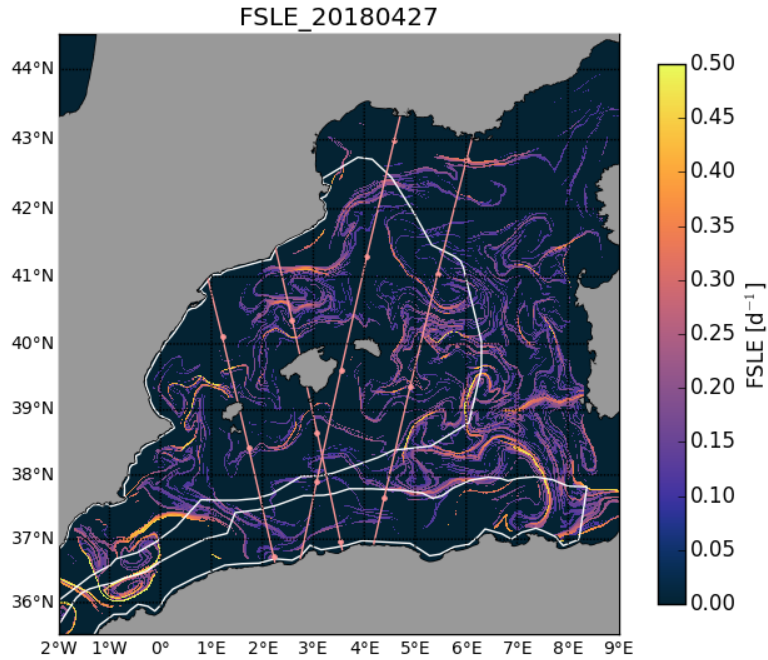
2.1 Altimetry, derived currents and Lagrangian analysis



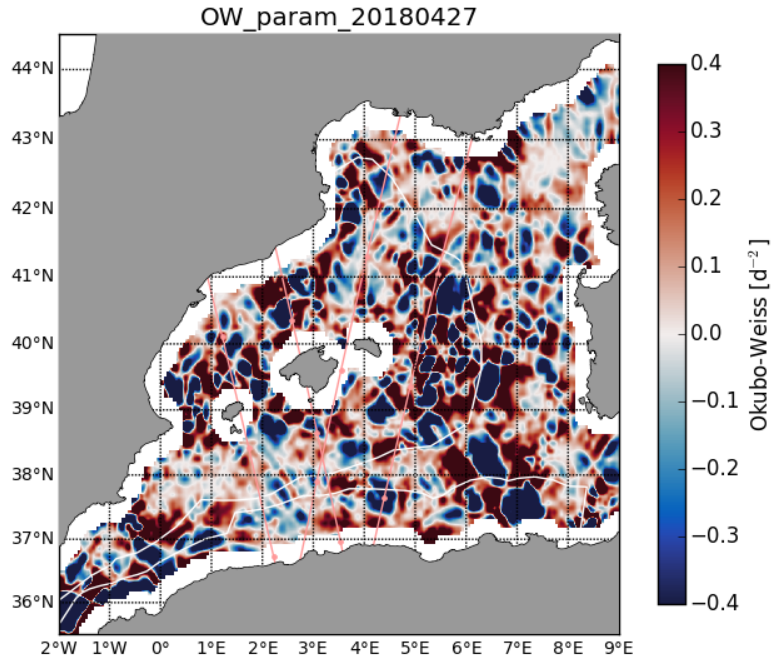
The SWOT area is very calm.



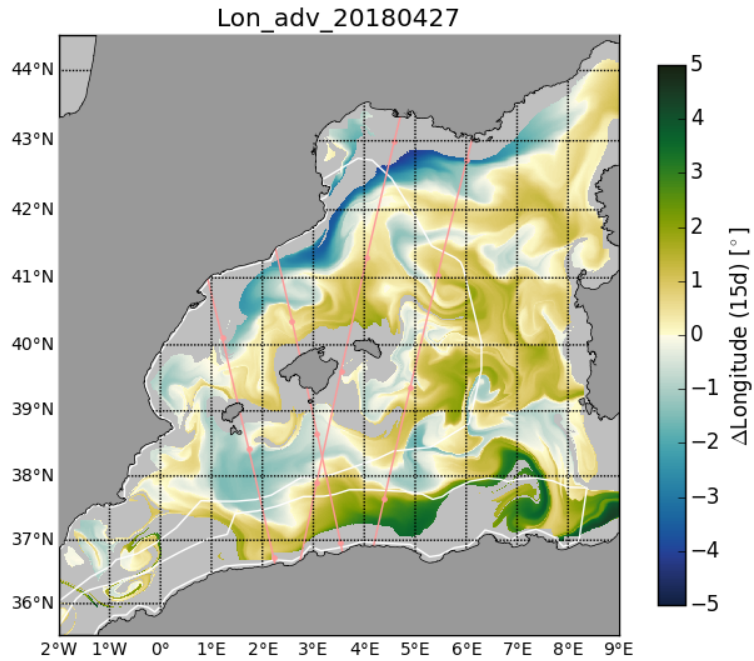
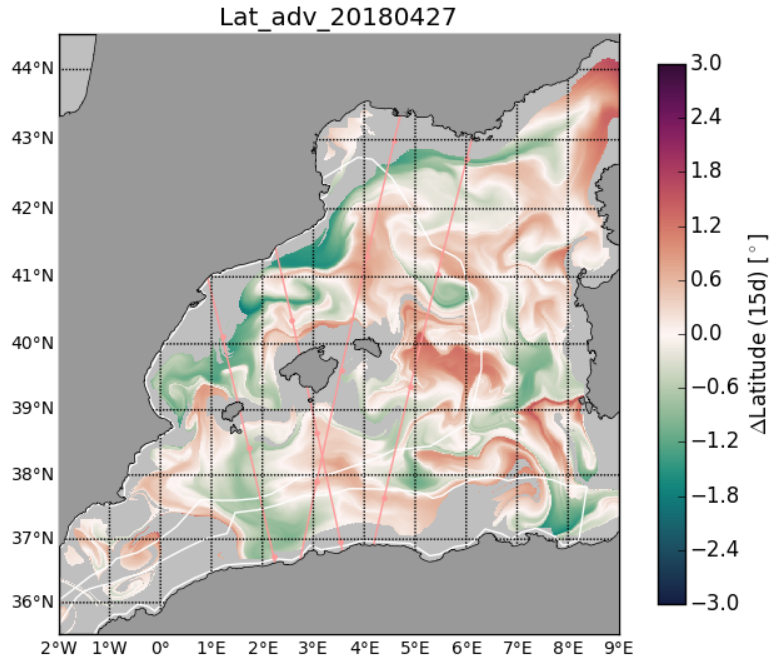
The area between 2-4°E and 38.2-39.2°N has very low kinetic energy.



Southwest of Majorqua, the interesting FSLE structure stretching in an oblique direction SW-NE (38 and 39°N and between 2 and 3°E) mentioned in the last bulletin is still there. Another FSLE structure extending southeast is detected inside the eastern SWOT track (3°E - 4°E ,39°N -38.5°N).



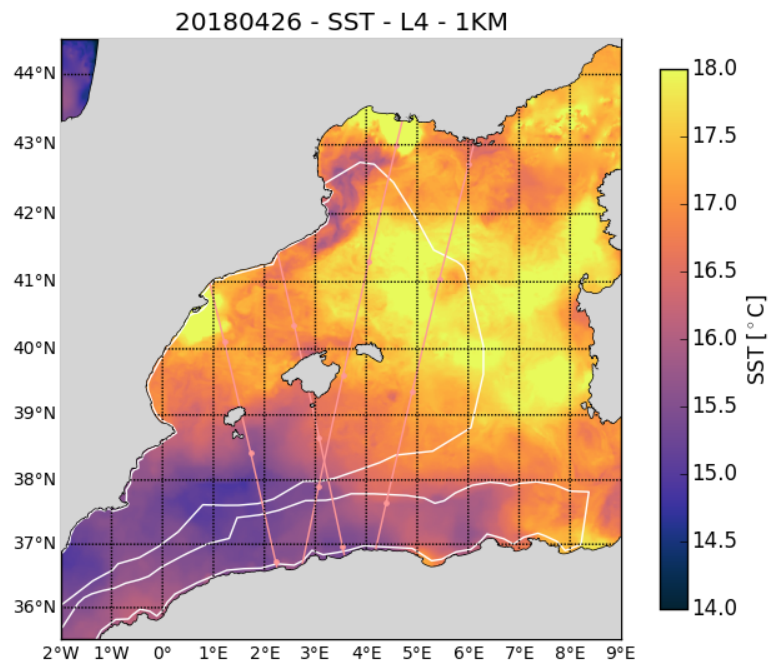
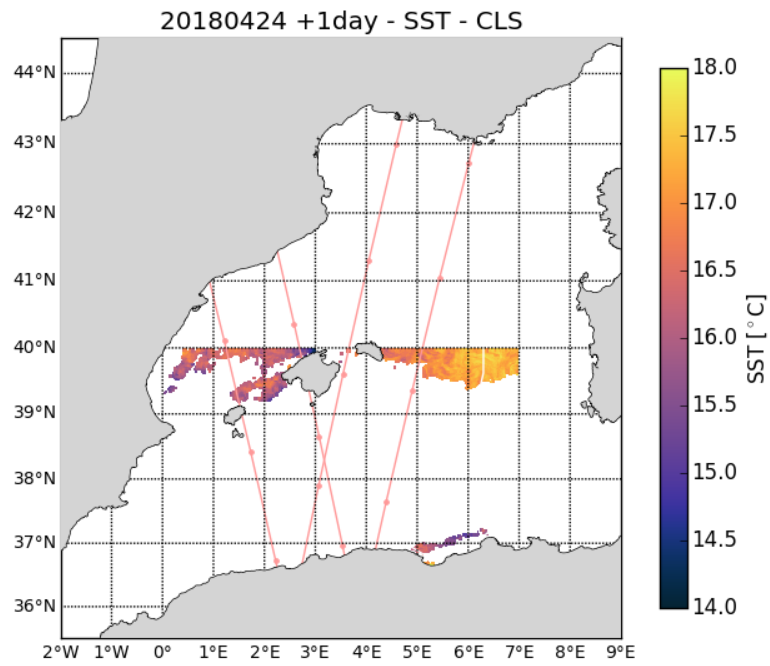
A mesoscale structure seems to form just north of the FSLE feature (between Ibiza and Majorca).



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

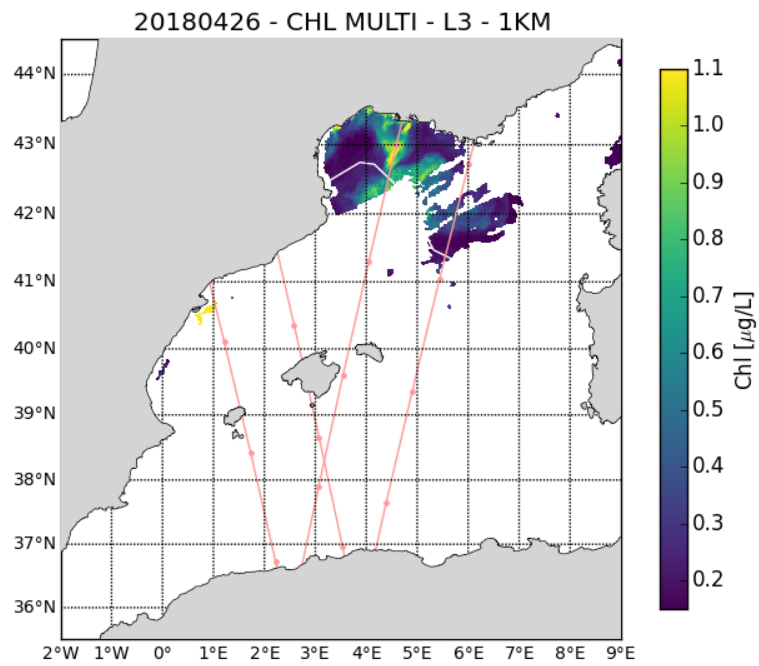
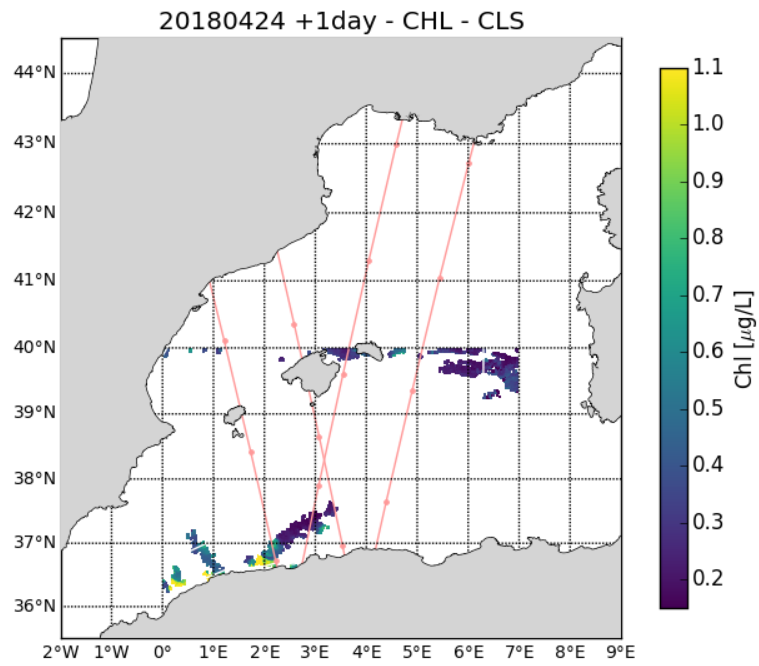
The second area showing an interesting FSLE feature is quite stable.

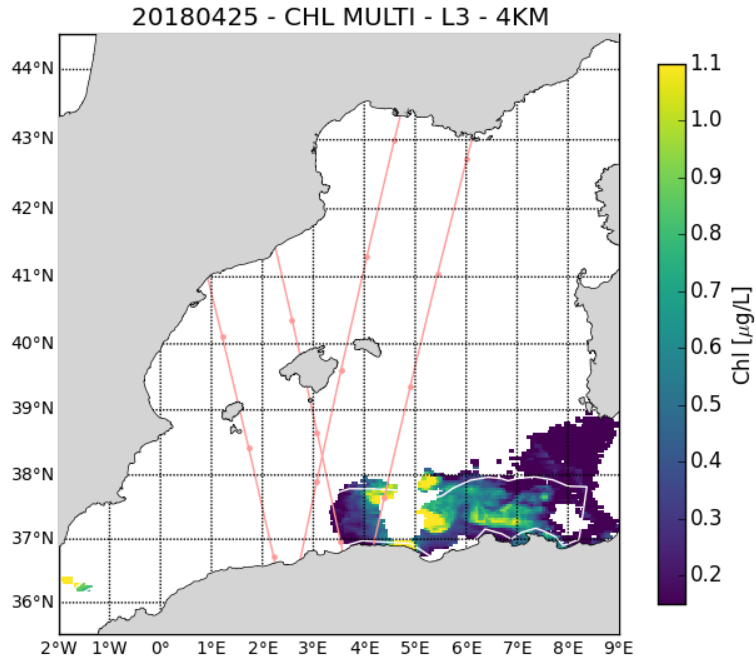
2.2 SST analysis



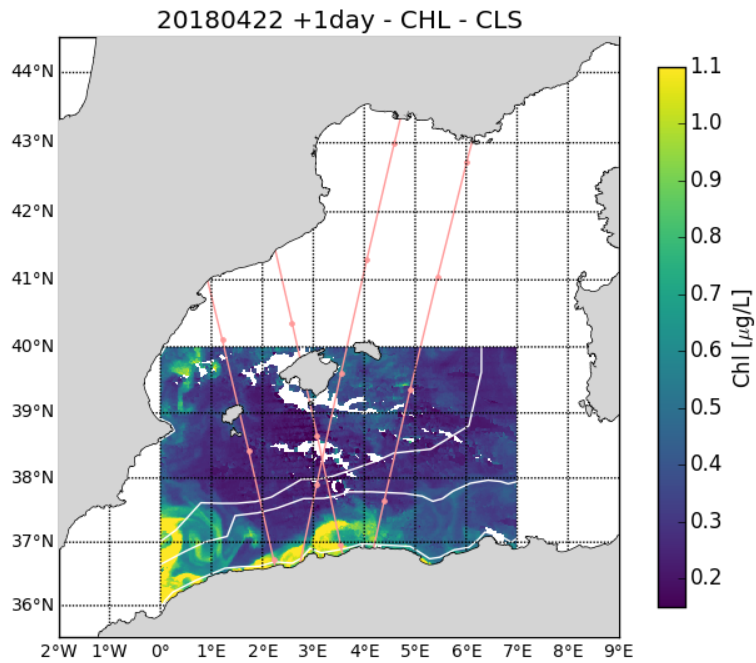
The Southern part is cooler than the Northern one.

2.3 Chlorophyll analysis





Unfortunately all the Chl figures are still cloudy in the region of interest. Nothing can be concluded from them today. The last clear Chl figure is from the 23rd of April (shown below) and show some Chl diffuse activity in the area 38.5 and 39°N and between 3 and 4.5°E .



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/>