PREBIOSWOT cruise

SPASSO Images Analysis

13/05/2018 10:47 UTC

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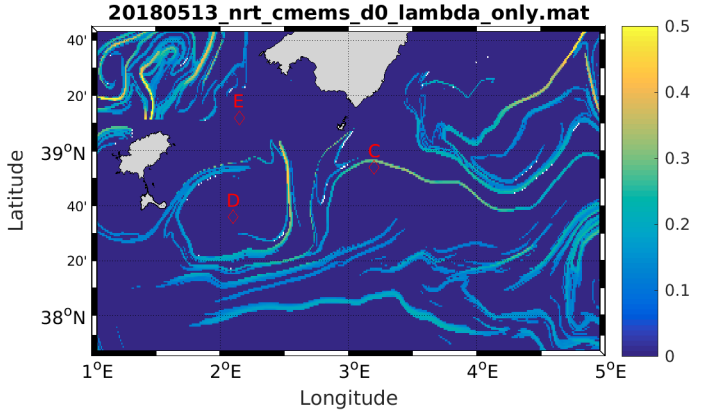
Executive Summary

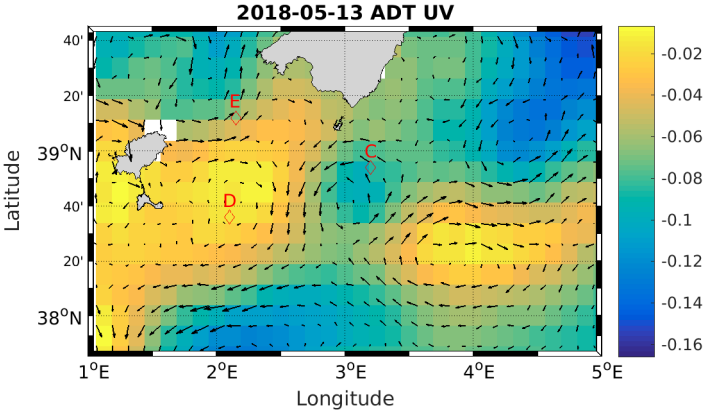
The second phase of the hippodrome strategy is finishing today, and the BB is going to sample the distorted mesoscale structure which is there since April, 27, now centered around 2.1°E - 38.65°N , following the CDE path. The GdC is back in Palma for today due to the agitated sea conditions. The intercalibration with the BB is planned for tomorrow.

The cyclonic eddy from yesterday is as the same location. The D point is well located at the distorted mesoscale structure center. The CD transect will cross both structures and encounter rather large southward currents. The DE transect will encounter rather large eastward currents.

The CD transect will cross three N-S FSLE. The first one is the continuation of the one already crossed in its NE part by the hippodrome the last days. The second one is in the middle. The third one, rather strong, is the front of the distorted mesoscale structure. The DE transect will cross the northern front of the distorted mesoscale structure.

The CLS Chl figure seems to show a front between C and D, with more Chl around C.



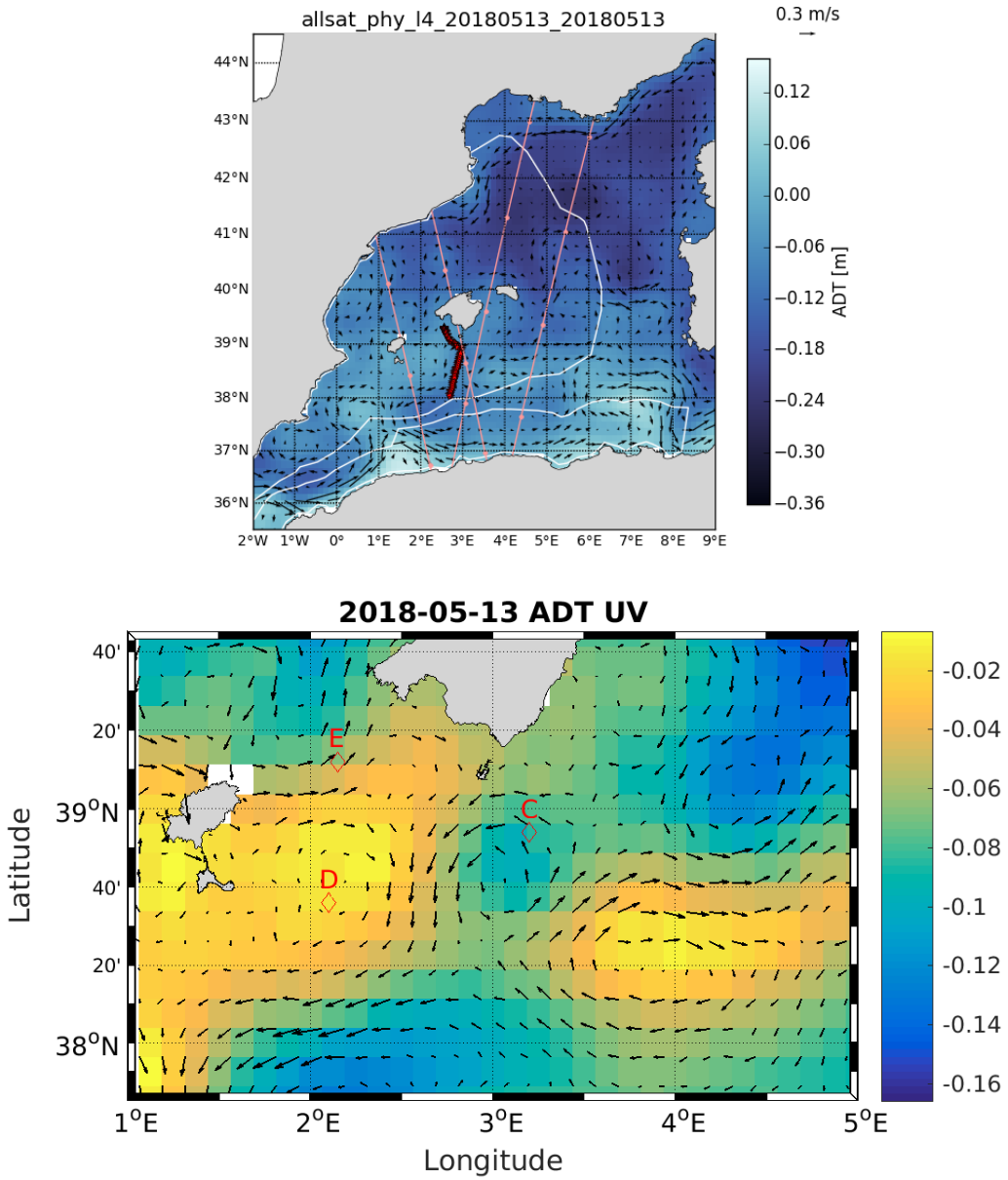


1 Ongoing operations and upcoming stations

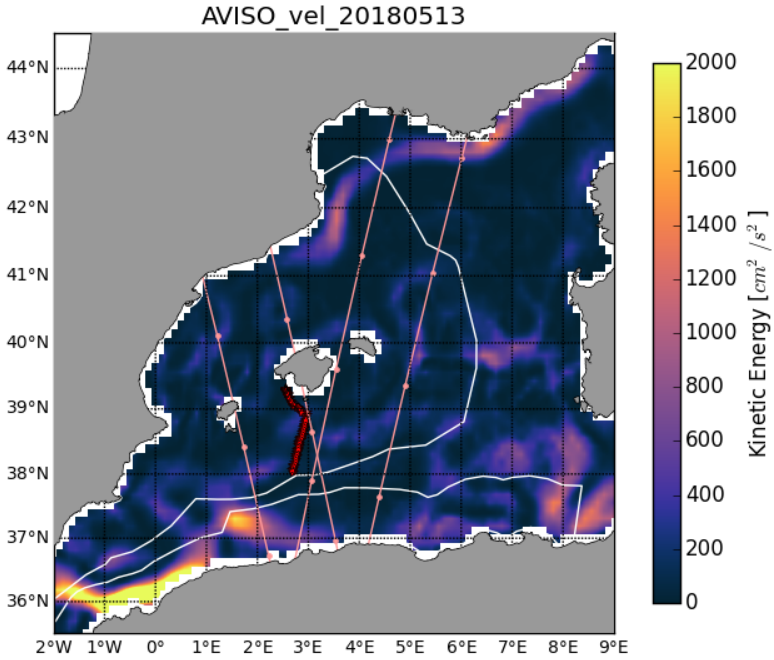
The second phase of the hippodrome strategy is finishing today, and the BB is going to sample the distorted mesoscale structure which is there since April, 27, now centered around 2.1°E - 38.65°N , following the CDE path.
The GdC is back in Palma for today due to the agitated sea conditions. The intercalibration with the BB is planned for tomorrow.

2 Daily figures analysis

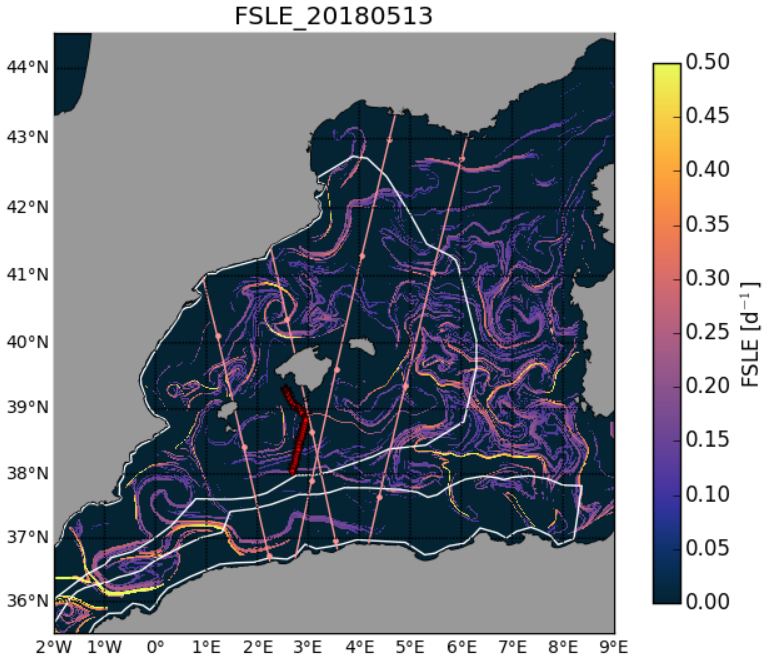
2.1 Altimetry, derived currents and Lagrangian analysis

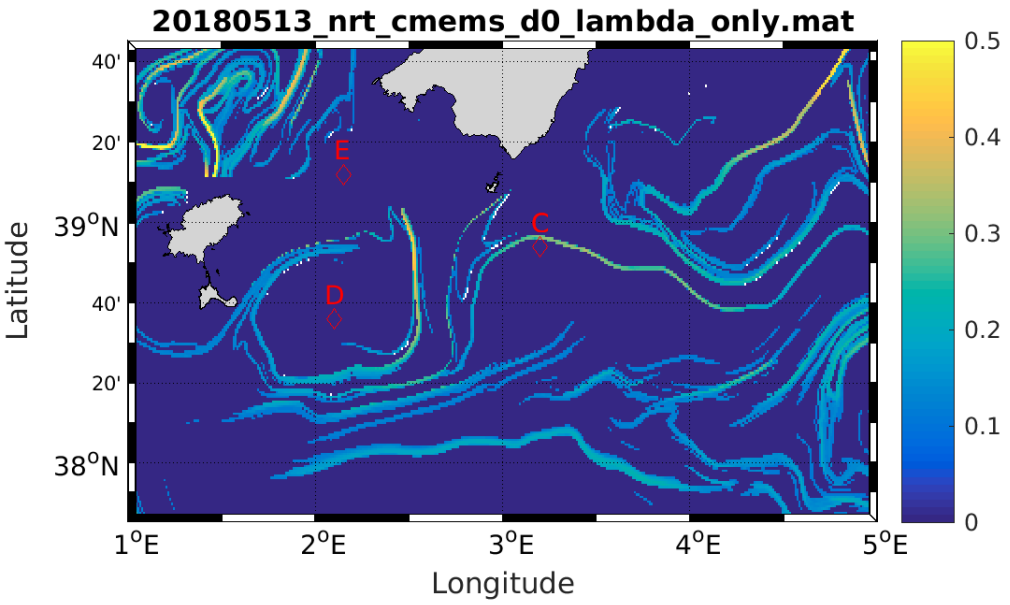


The cyclonic eddy from yesterday is as the same location, around 3.0°E - 38.7°N . The (anticyclonic) distorted mesoscale structure is now centered around 2.1°E - 38.65°N . The D point is well located at the structure center. The CD transect will cross both structures and encounter rather large southward currents. The DE transect will encounter rather large eastward currents.

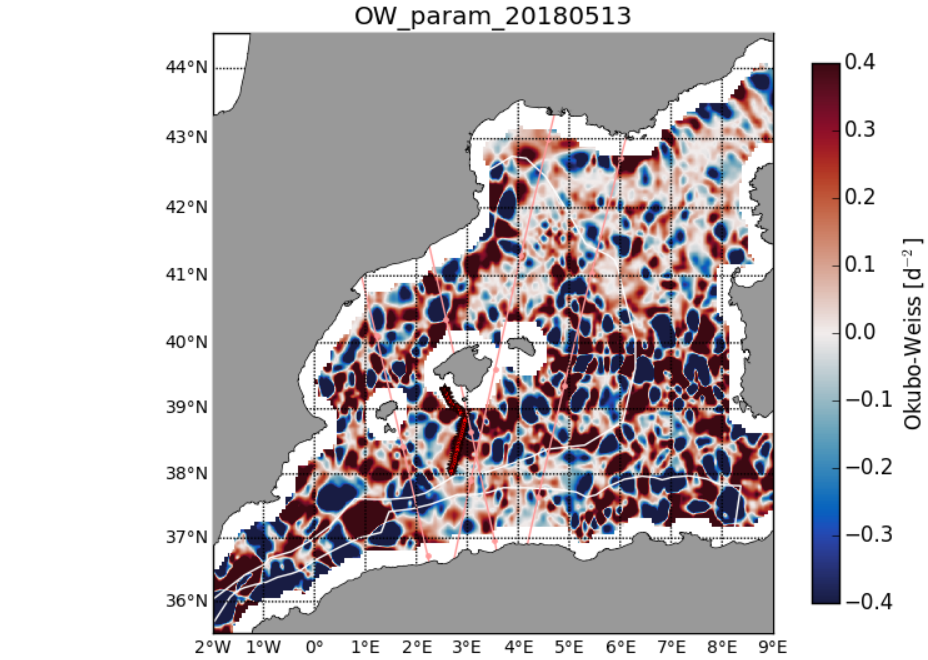


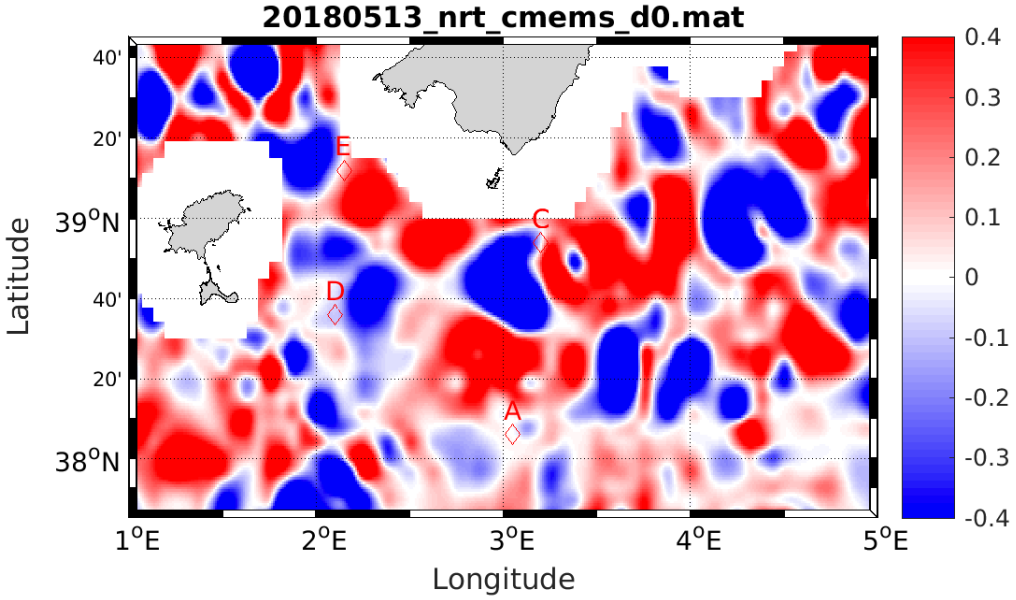
The area has low energy. The CD transect should cross a slightly higher energy region.





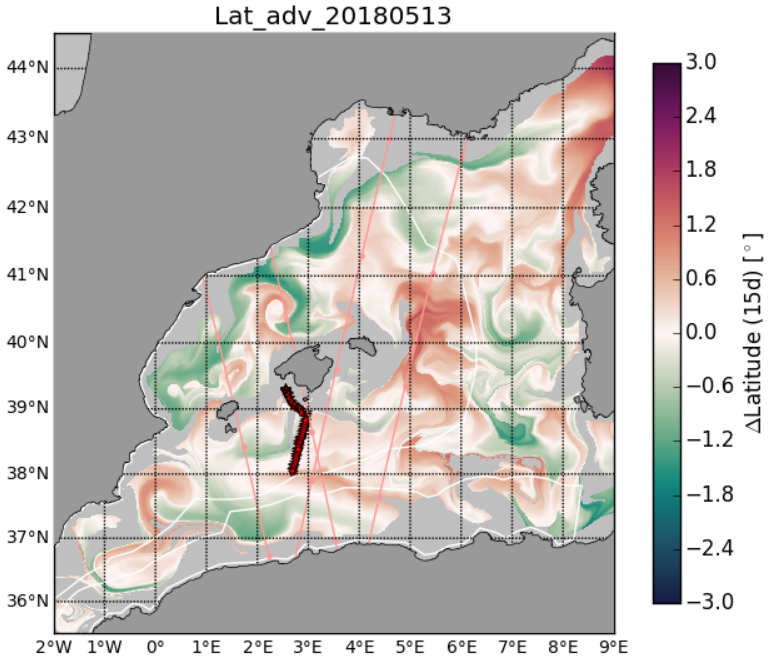
The CD transect will be very interesting as it crosses three N-S FSLE. The first one is the continuation of the one already crossed in its NE part by the hippodrome the last days. The second one is in the middle. The third one, rather strong, is the front of the distorted mesoscale structure.
The DE transect will cross the northern front of the distorted mesoscale structure.

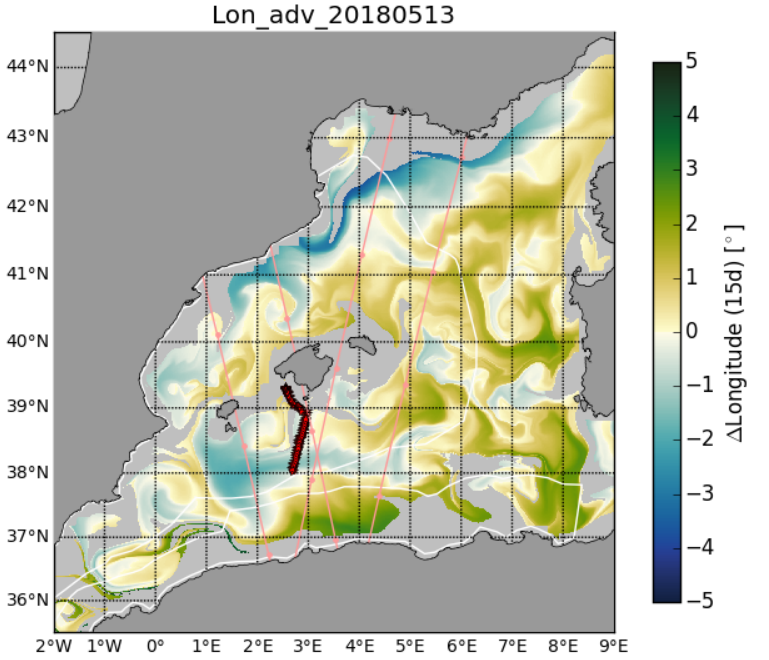




The cyclonic eddy, centered around 3.0℃E - 38.7℃N , and the the distorted mesoscale structure, centered around 2.1℃E - 38.65℃N , are well visible on the OW plot. In this plot, the distorted mesoscale structure seems to separate in several structures, which is not visible in the AVISO and FSLE plots.

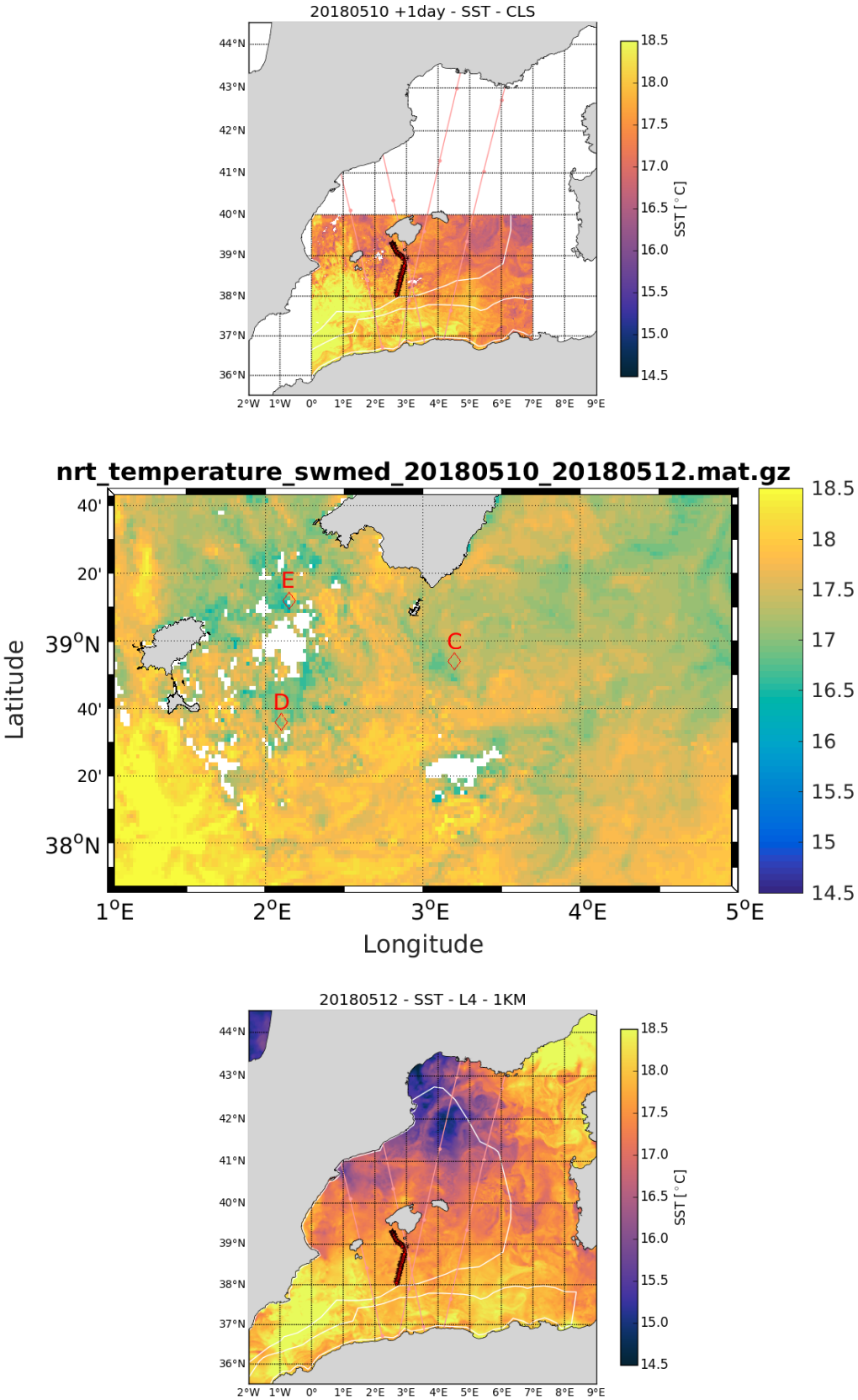
The BB may cross a smaller feature betweeen Ibiza and Majorqua on Monday.





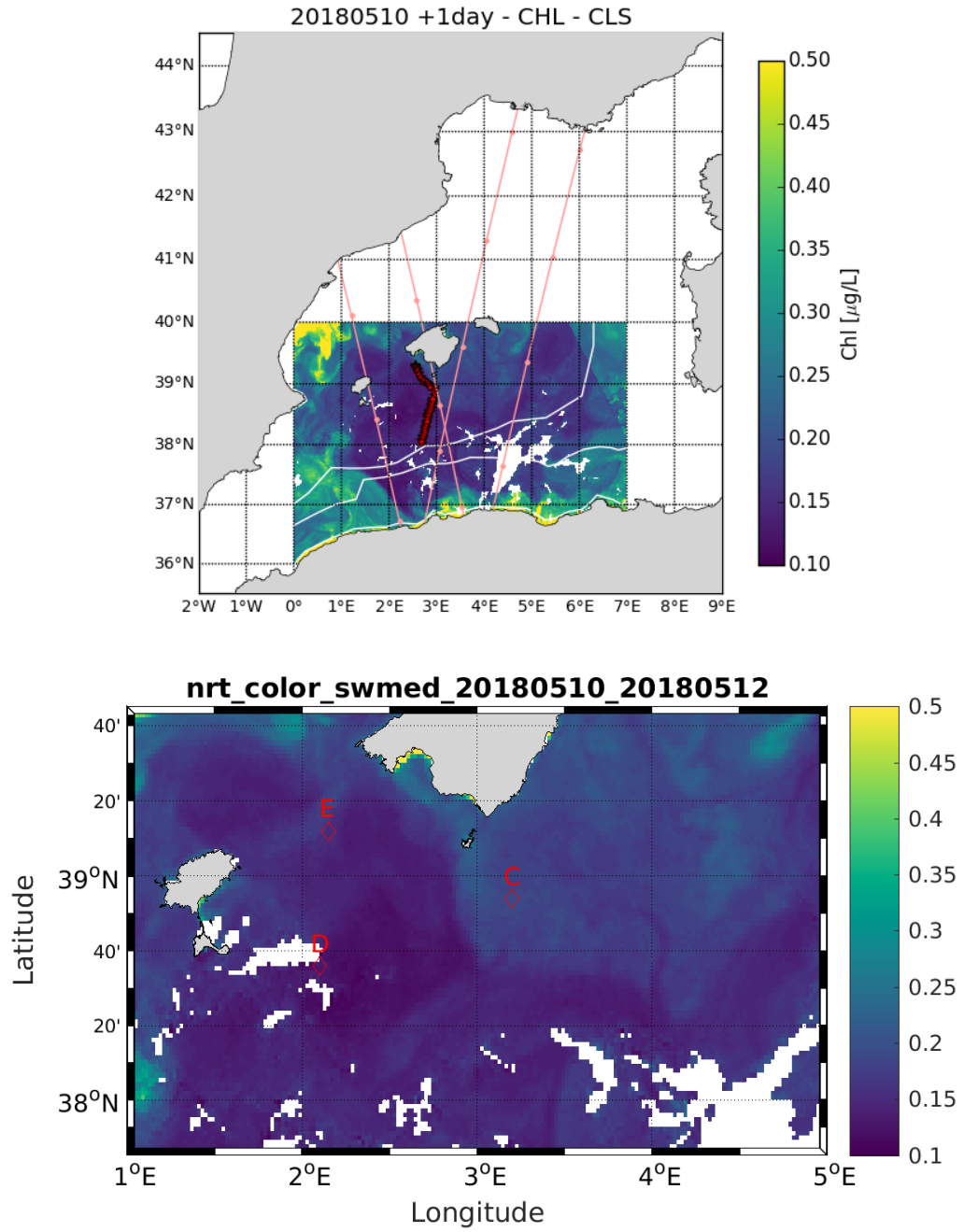
The Lat_adv and Lon_adv images agree with the FSLE structures. They confirm that the distorted mesoscale structure is cyclonic and is surrounded in its N and E sides by coastal waters.

2.2 SST analysis



The SST figure is a little bit cloudy, but it seems that the end points of the transects (C, D, and E) are in slightly colder zones than the mains paths of the transects.

2.3 Chlorophyll analysis



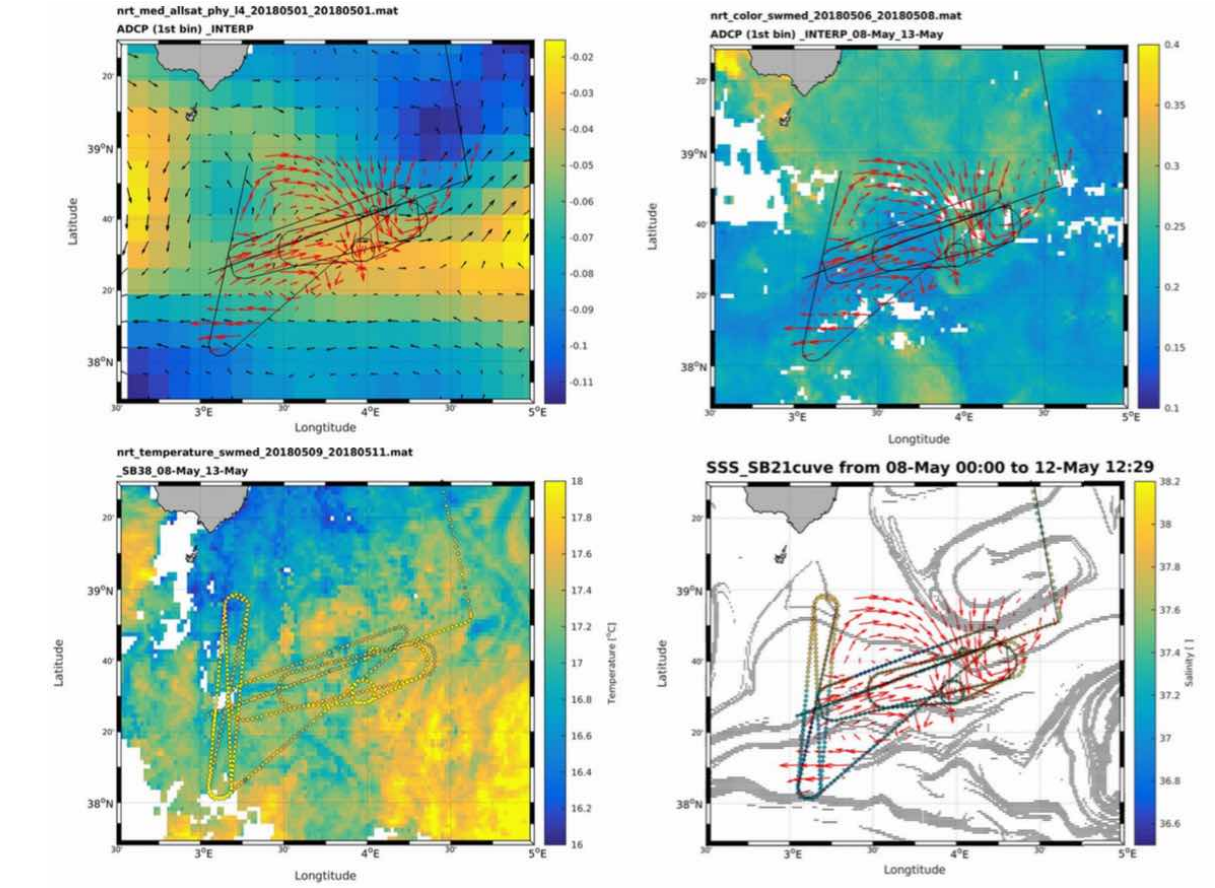
The CLS Chl figure seems to show a front between C and D, with more Chl around C. The other Chl figures are cloudy or irrelevant.

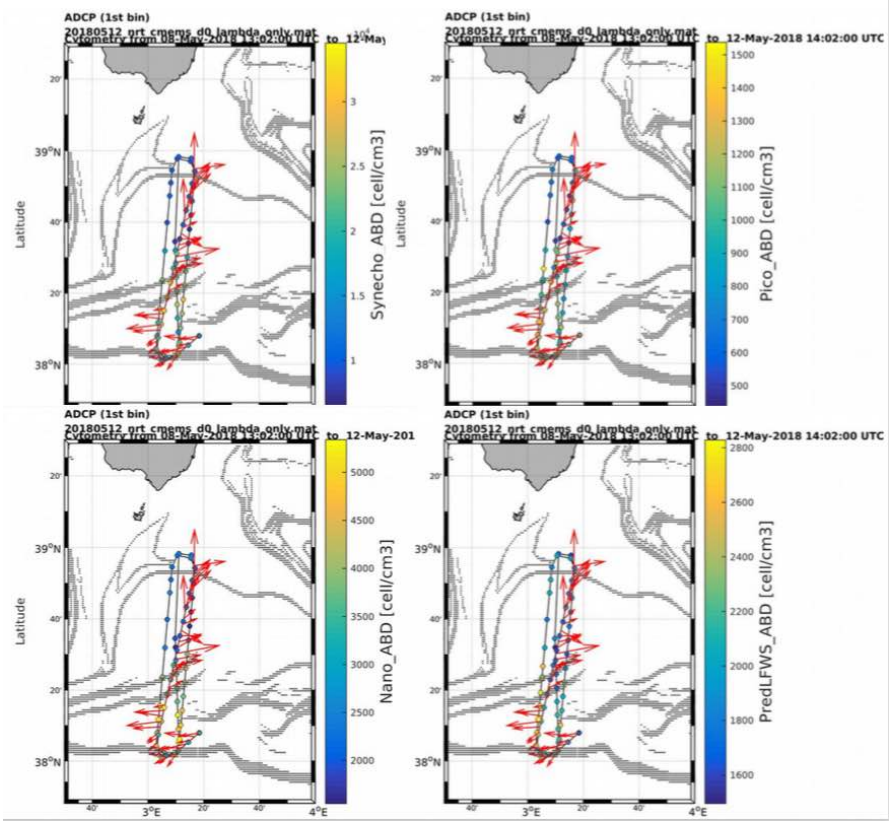
2.4 Gliders

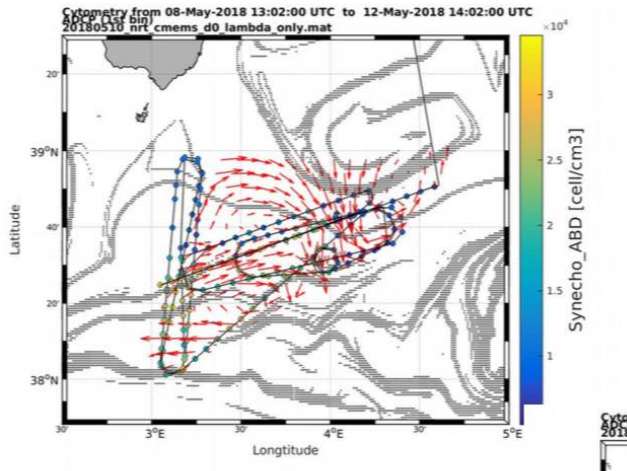
The gliders are coming back. The MIO glider is coming back on the same track and should be retrieved on May 15. Its trajectory is situated NE of the BB one.

2.5 Online analysis

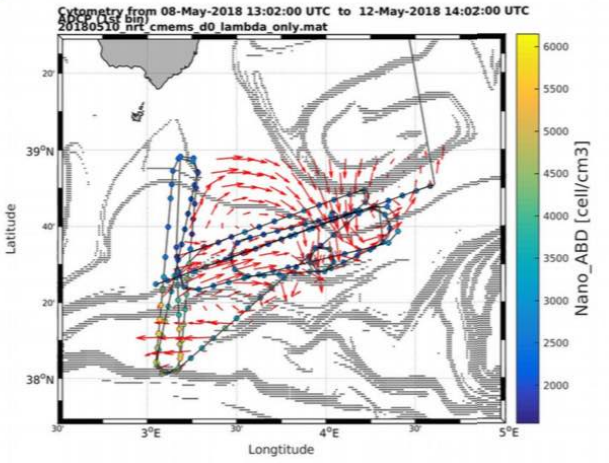
See below updated plots from Andrea and Gerald showing the ADCP, temperature, salinity and species distributions measurements for the AB and AC hippodromes.







As above, but for both Lagrangian samplings



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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/