FUMSECK cruise

SPASSO Images Analysis

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Executive Summary

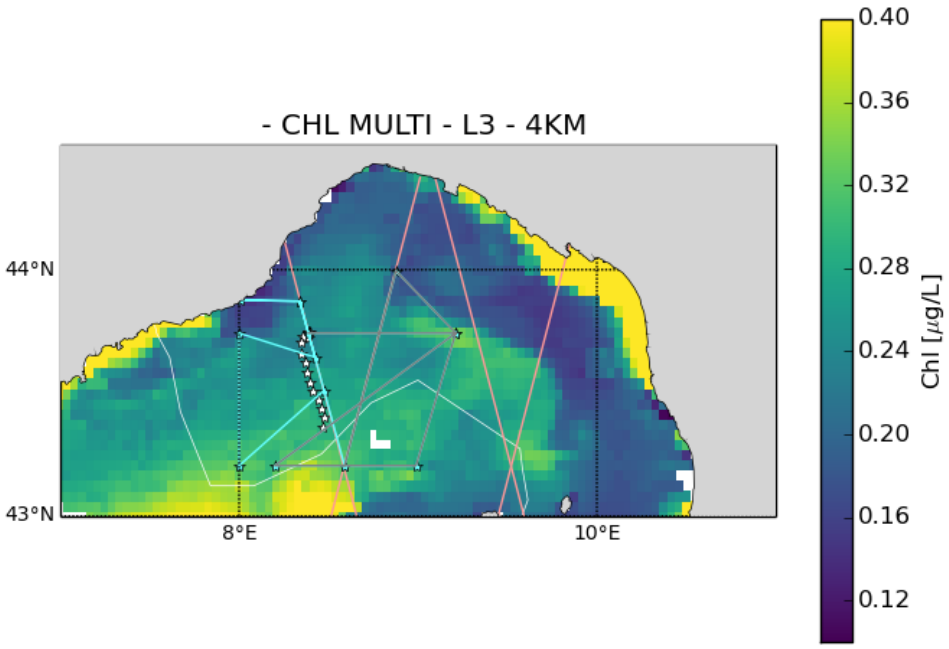
Meteorological conditions are windy (hence the MVP is/will not be used today).

Vertical speed station is scheduled at J.

Note that G has become G1 and H has become H2.

One question: is it ok, tomorrow, to do the route straight south from waypoints N to O ? (it seems that there is potential problem in a straight northward transect).

There is concern about email communication and web server access on Saturday May 4 from 8:00 am to 6:00pm; we will do our best to still send you a bulletin.



1 Ongoing operations and upcoming stations

Today, May 3rd, the plan is to go to station J, then west to Almeria. Tomorrow, the plan is leave the harbor around 10h30 am local time, go back to I=K, then to M through A=L, then northwest to N, then straight south to O, and then northeast to P.

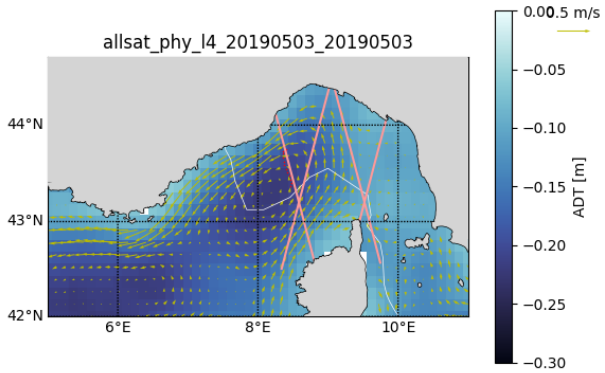
Wind has risen from 20 knots during the night to 27 knots this morning. MVP was used during the night but, for caution reasons, was brought back onboard at 6:00 am this morning and will not be used again today. Wind should calm down around noon.

Vertical speed station is scheduled at J.

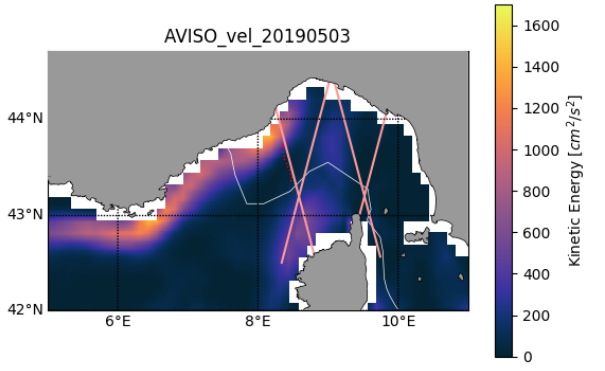
Note that G has become G1 and H has become H2.

2 Daily figures analysis

2.1 Altimetry, derived currents and Lagrangian analysis

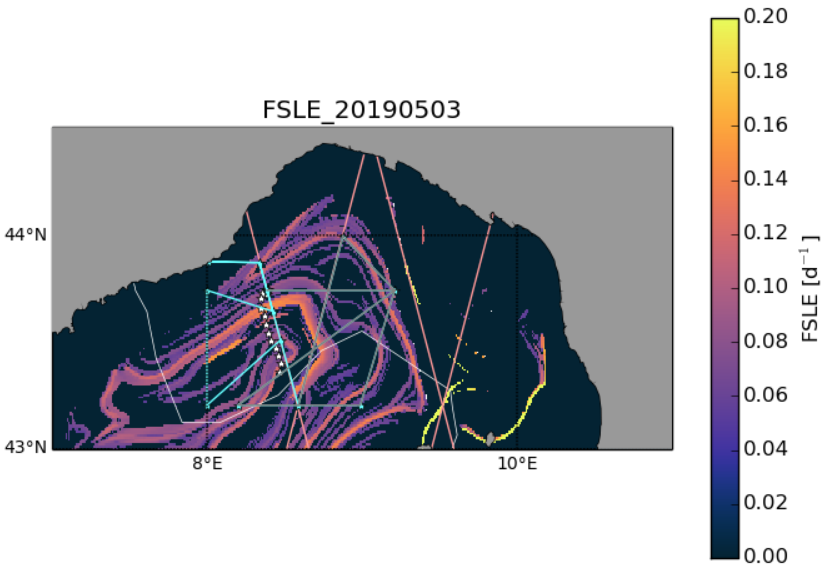


We observe a general cyclonic circulation in the region of interest.

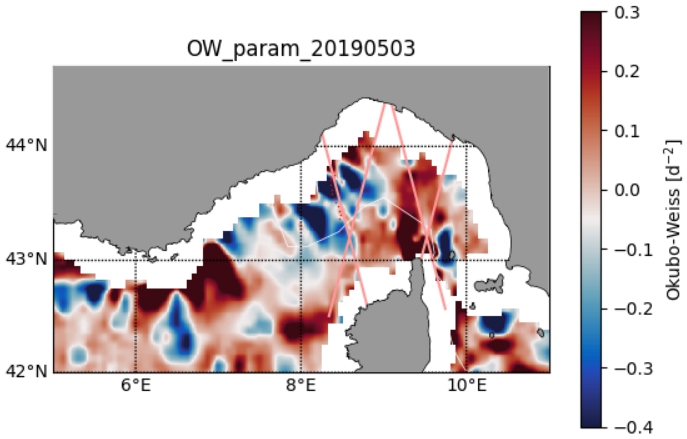


The area has low energy, apart in the cyclonic loop and, especially, along the Northern Current trajectory.

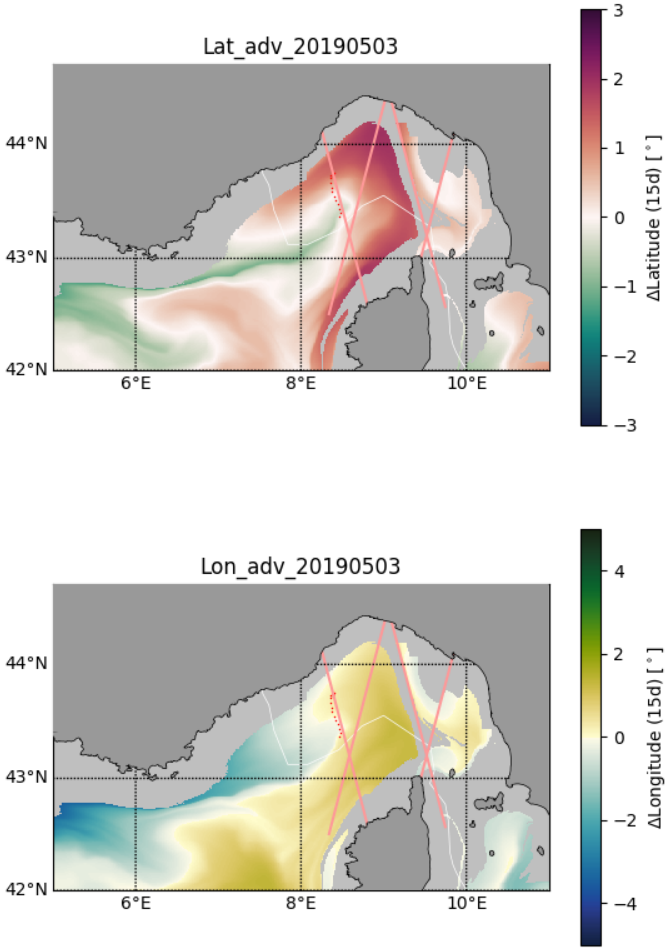
Reminder: by convention, we will hereafter call FSLE1 the highest FSLE structure looping cyclonically between 8°E and 9°E, and FSLE2 the structure East of the cyclonic loop, between 9°E and 10°E, 43°N and 44°N, nearly in a South-North direction but slightly tilted, and parallel to the altimetry track.



You are right now probably going to cross orthogonally FSLE1, on your way to J.
And tomorrow, you will cross it again FSLE1 but more southwest. Great to check the phytoplankton community.



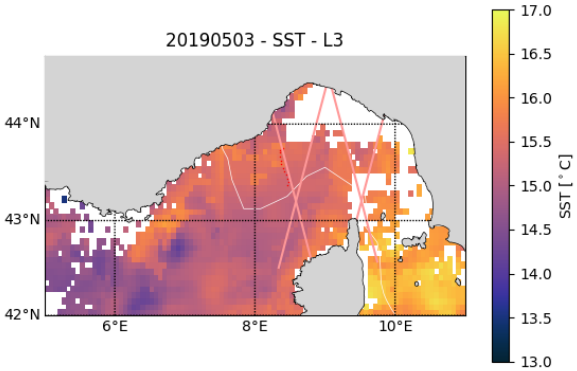
The OW Near Real Time (NRT) data may have some trouble but it is already less striated than yesterday.



The Lat_adv and Lon_adv images agree with the cyclonic circulation and FSLE structure. We can indeed clearly see the structure East of the cyclonic loop, between 43°N and 44°N, nearly in a South-North direction but slightly tilted, parallel to the altimetry track. It corresponds to the West Corsican current coming straight from along the Corsican coast (hence in grey).

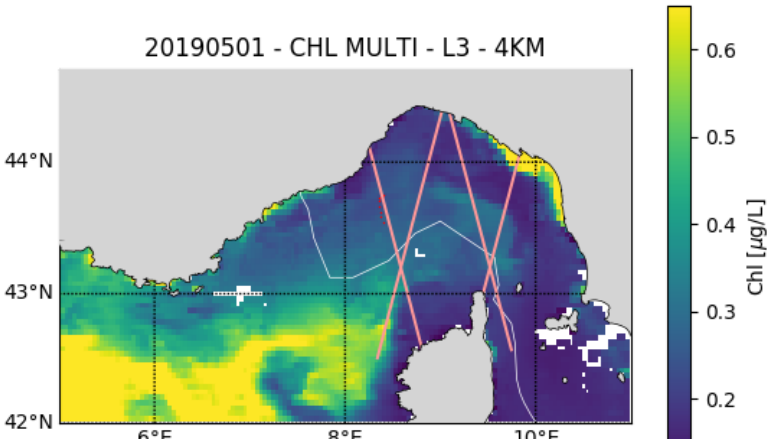
Note: In the Lat_adv, the red goes North while the green goes south; in the Long_adv, the green goes east, the blue goes west).

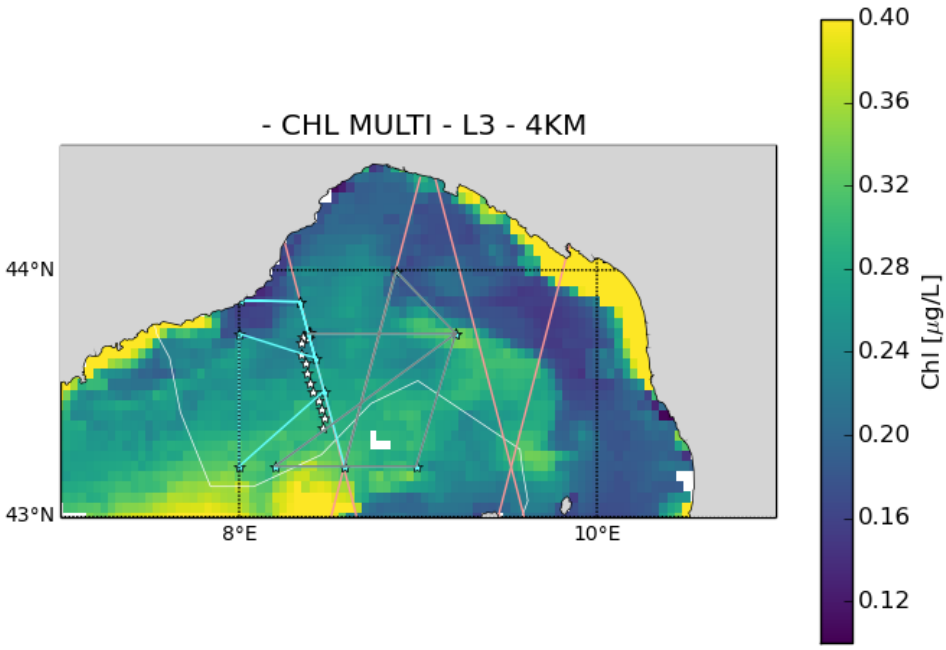
2.2 SST analysis



The zone is still rather warm.

2.3 Chlor





The highest Chl concentrations are southwest. In our area of interest, there is still a bulb of medium Chl concentrations with patchiness and nice transitions in phytoplankton community detected by cytometry.

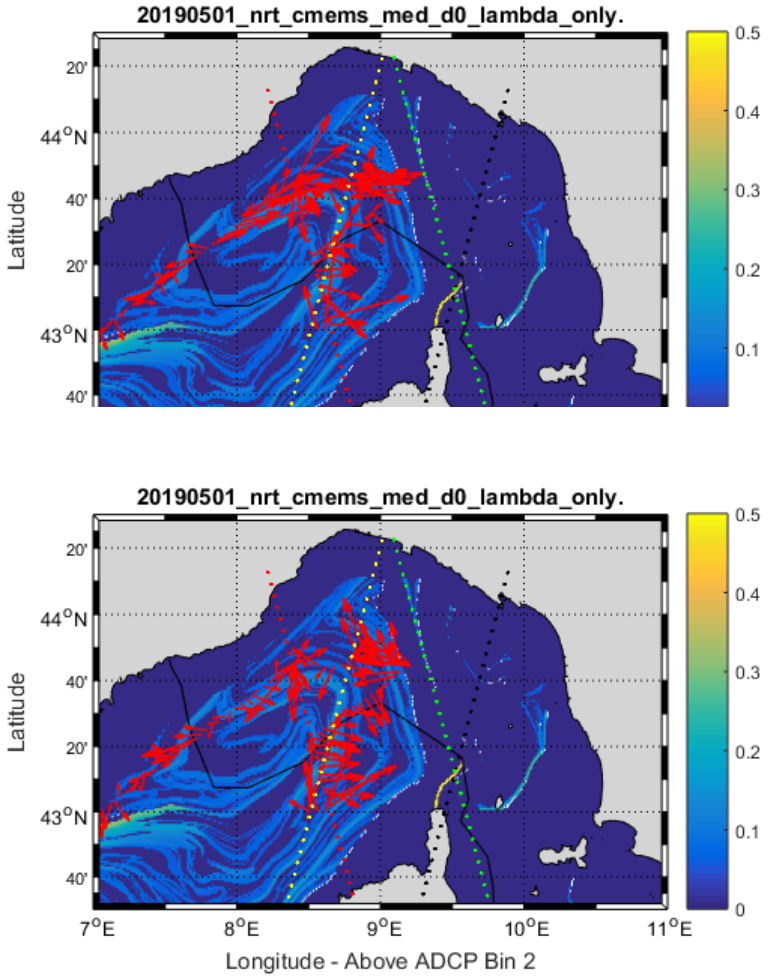
2.4 Glider

Glider communication is going fine (see the stars on the zoom figures of FSLE and Chl).

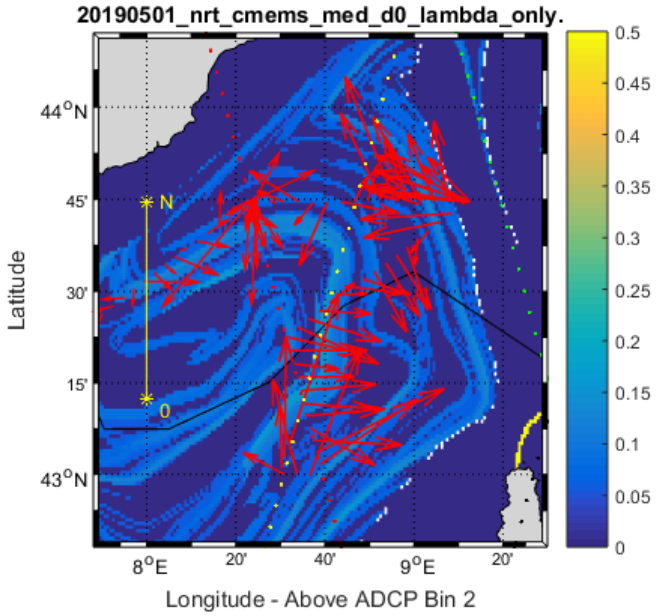
There is concern about Saturday May 4; because server maintenance work may prevent mail communication, and hence glider detection.

2.5 ADCP

Here are two pictures of ADCP horizontal currents along the track of the Téthys II during May 1st, the first one at 19m depth and the second one 8m below, at 27m depth.



And follows the specific zoom of interest to the team onboard the Téthys II (with ADCP during May 1st and at 27m depth); on which we added the transect for waypoints N to O just to clarify the western location of the study zone.



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Acknowledgements

The FUMSECK cruise is part of the BIOSWOT program.
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. 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.

Useful links:

FUMSECK is a cruise from the BIOSWOT project

SPASSO FUMSECK webpages