

# [BIOSWOT-Med]: SPASSO Images Analysis

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March 20, 2023

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## Executive Summary

Type here your executive summary

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## 1 Ongoing operations and upcoming stations

SWOT passing time (UTC) over:

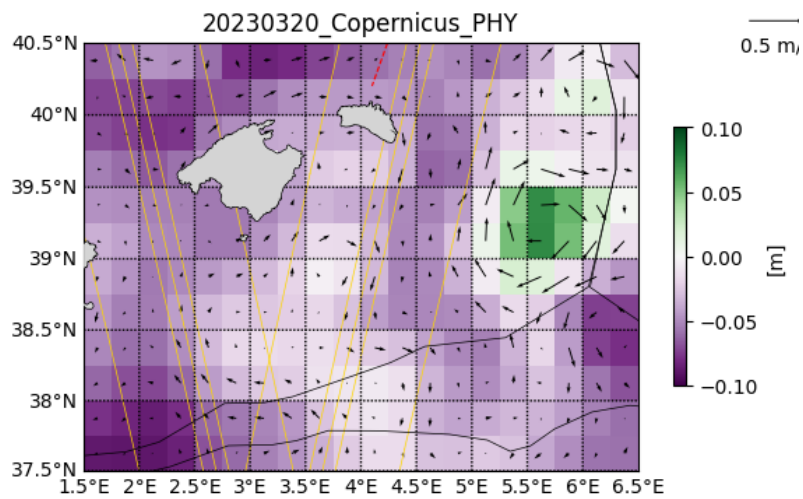
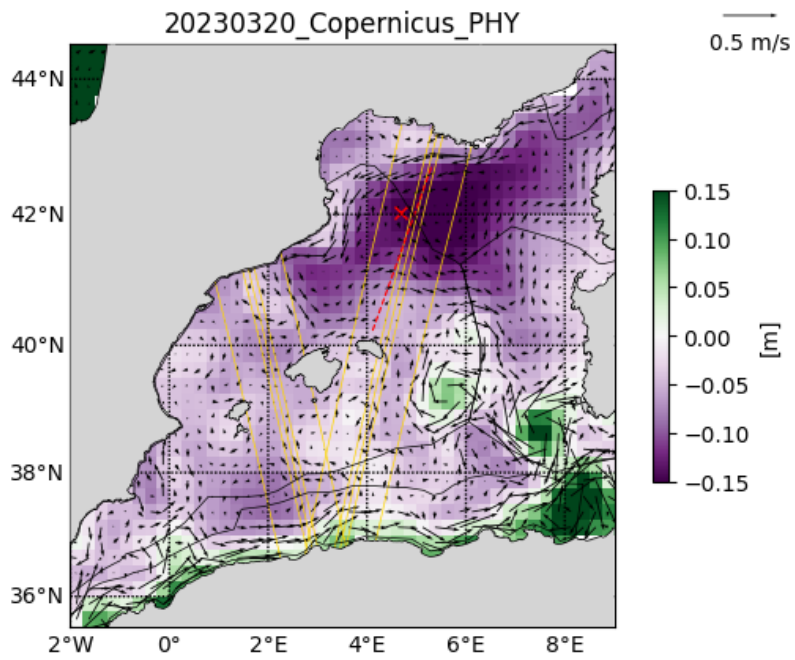
43°N - 5°E Asc   42.7°N - 4.8°E Asc
:----- :-----
2023-03-20 01:46:30   2023-03-20 01:46:30
2023-03-21 01:37:07   2023-03-21 01:37:07
2023-03-22 01:27:45   2023-03-22 01:27:45
2023-03-23 01:18:22   2023-03-23 01:18:22
2023-03-24 01:09:00   2023-03-24 01:09:00

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## 2 Daily figures analysis

### 2.1 Altimetry, derived currents

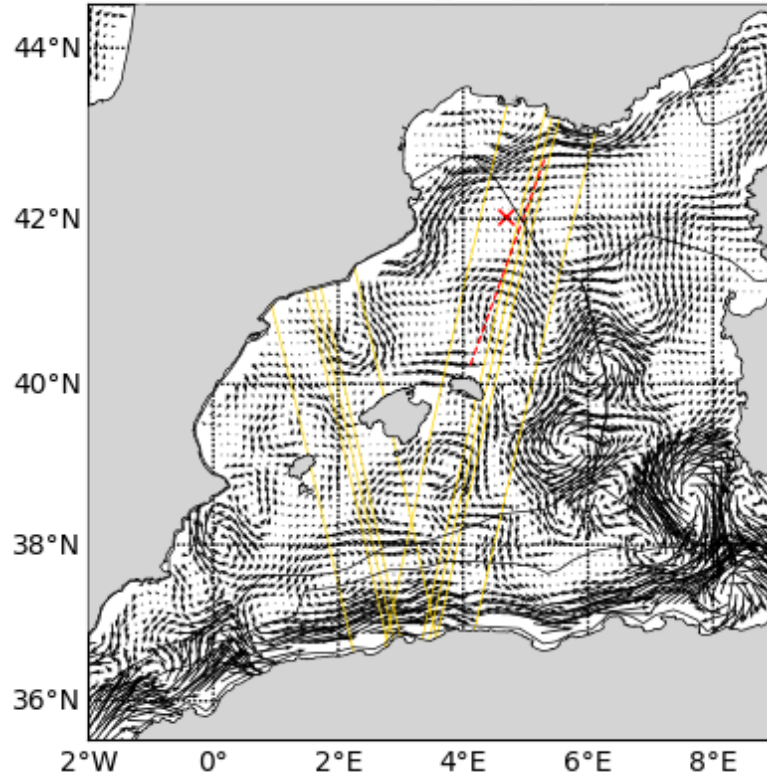
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## 2.2 SST analysis

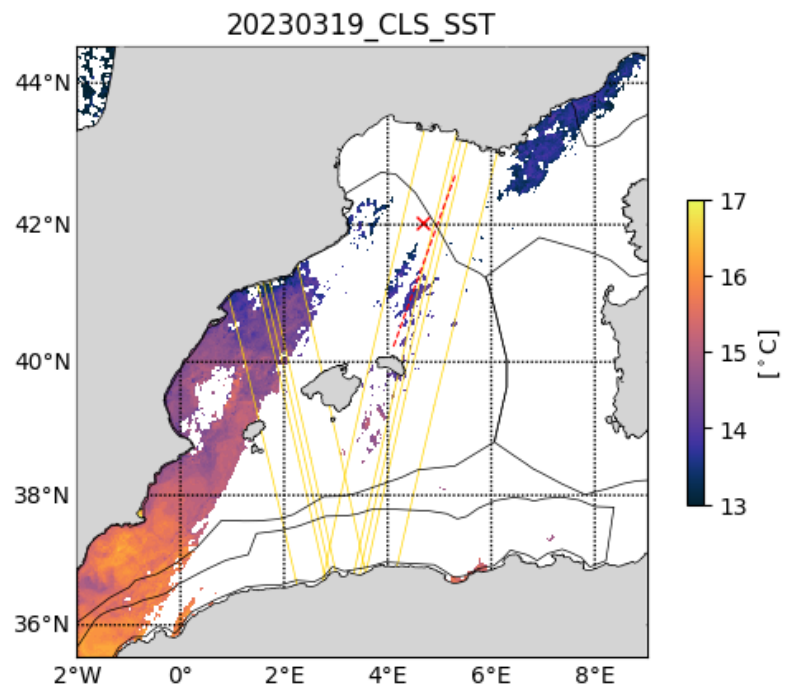
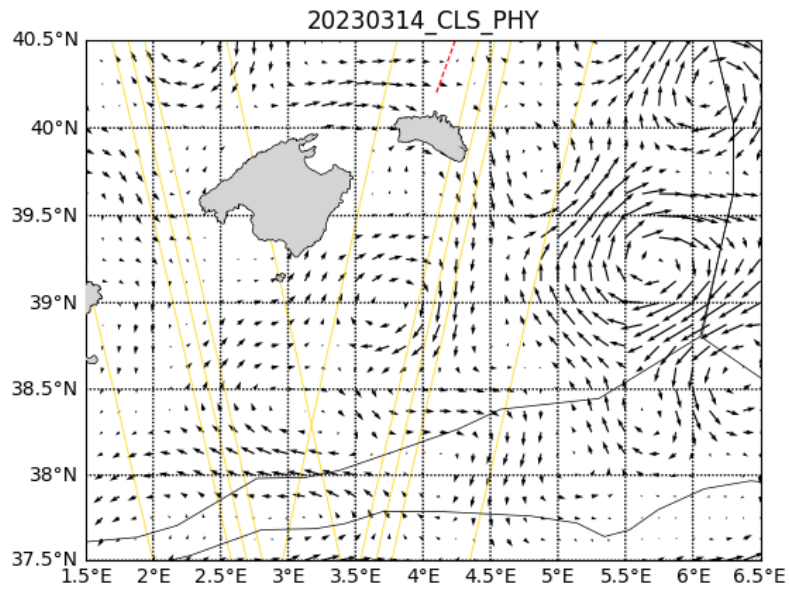
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20230314\_CLS\_PHY



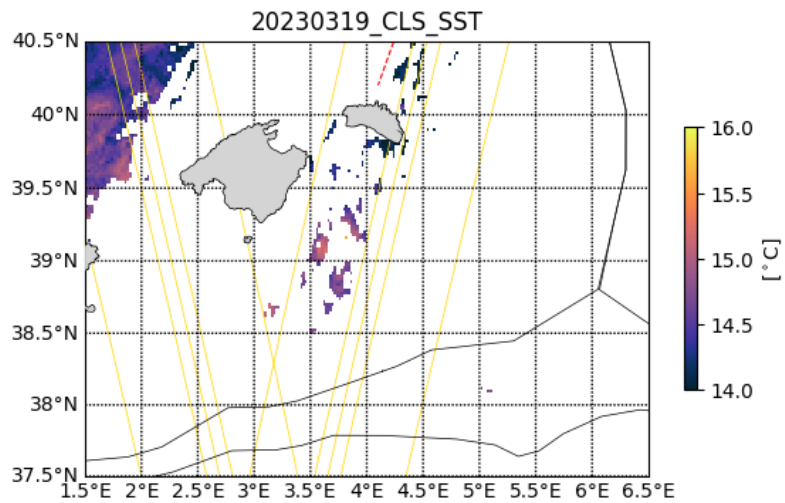
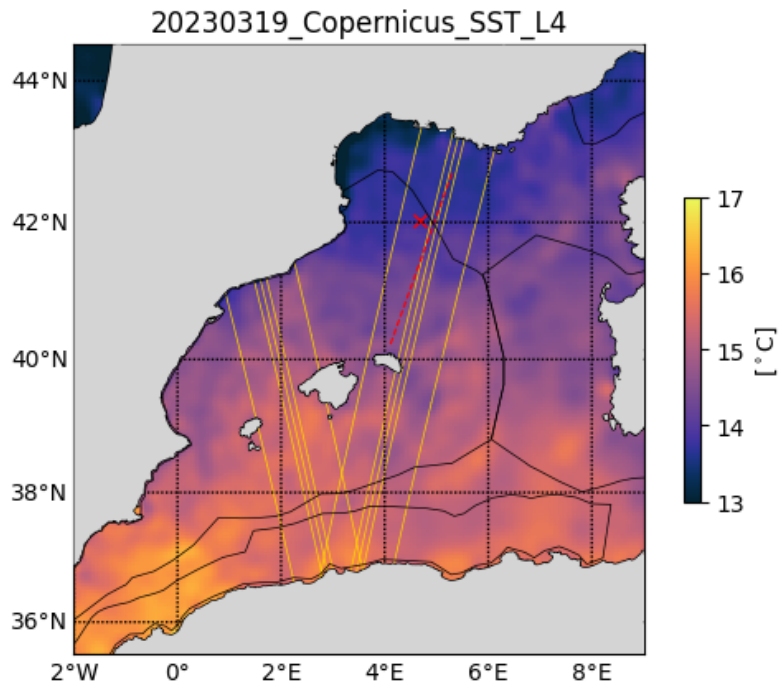
### 2.3 Chlorophyll analysis

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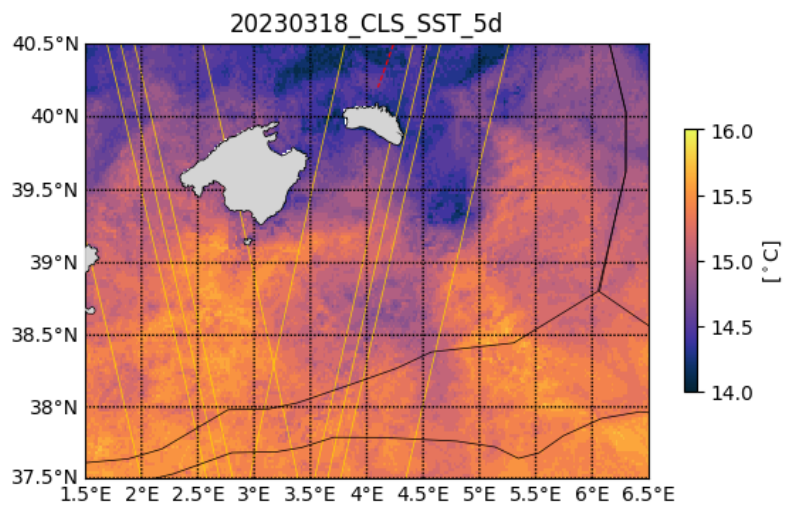
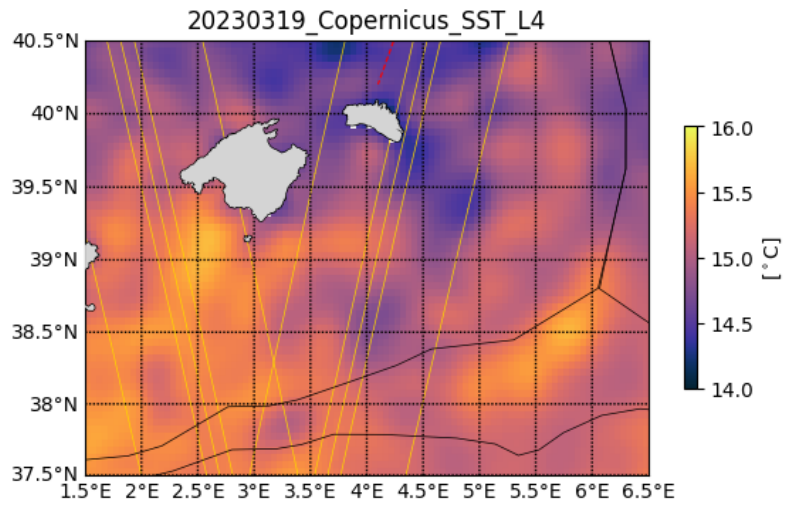
## 2.4 Eulerian/Lagrangian analysis

Eulerian diagnostics computed with Copernicus\_PHY velocities:  
 KE: kinetic energy

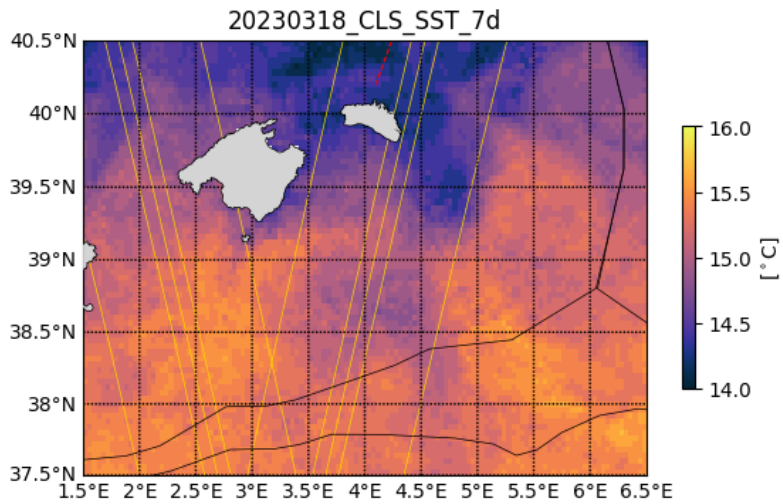
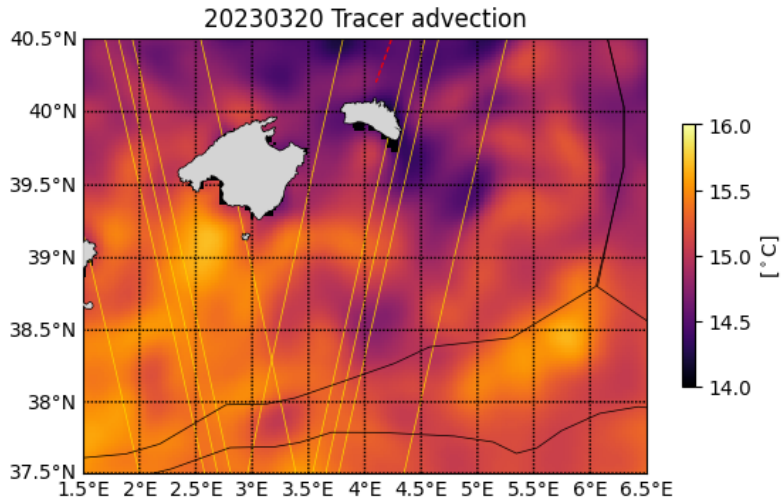


OW: Okubo-Weiss parameter

Lagrangian diagnostics computed by seeding Lagrangian particles every 0.02deg and advected for 30 days backward in time with Copernicus\_PHY velocities:



FTLE: finite time Lyapunov exponents (convergent fronts detection)  
 LLADV: longitude and latitude advection  
 Retention parameter (based on computing the okubo Weiss parameter along a particle trajectory): Detect trapping structures (colorbar = days water parcels have a positive vorticity)



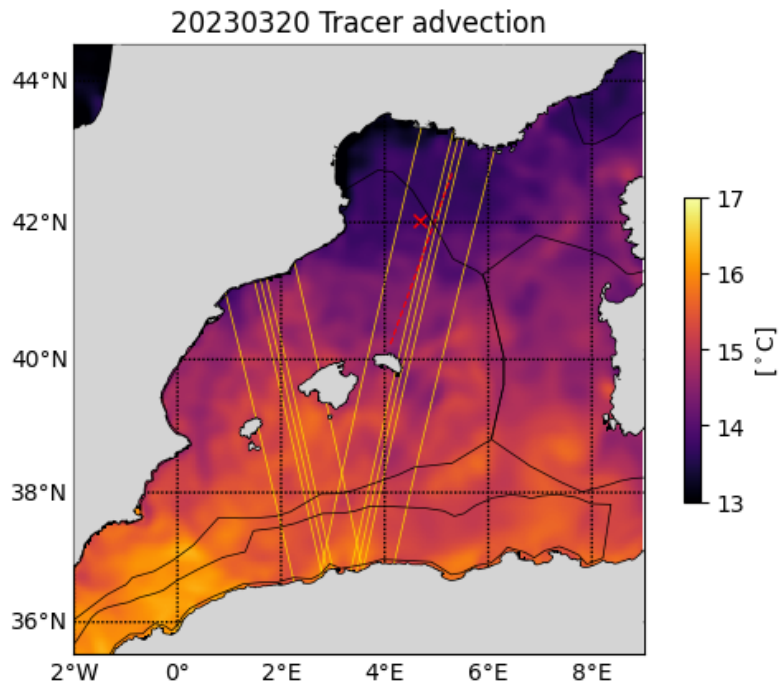
## 2.5 Other analysis

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### Acknowledgments

Example:

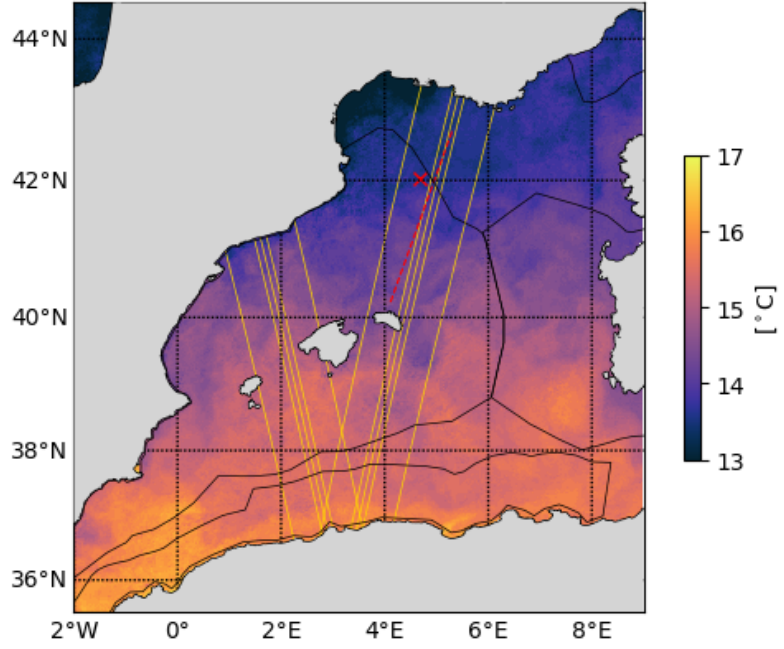
The altimetry data are the AVISO Mediterranean regional product: <http://www.aviso.altimetry.fr/index.php?ic>  
 The derived currents are processed by SPASSO to derive Eulerian and Lagrangian diagnostics of ocean circulation: OkuboWeiss parameter, particle retention time and advection, Lagrangian Coherent Structures. CLS provided the



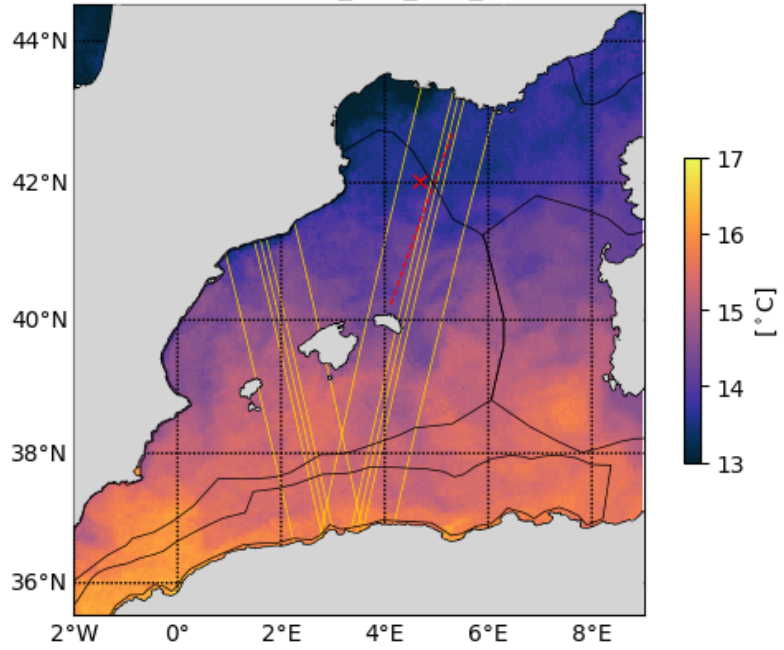
SST and surface CHL concentration composite products. Sea surface temperature (level 3 and 4, 1 km resolution) and chlorophyll concentration (level 3, 1km resolution, MODISAqua and NPPVIIRS sensors combined (after May 27, 2017) into a new product called MULTI) have been provided by CMEMS Copernicus Marine 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.

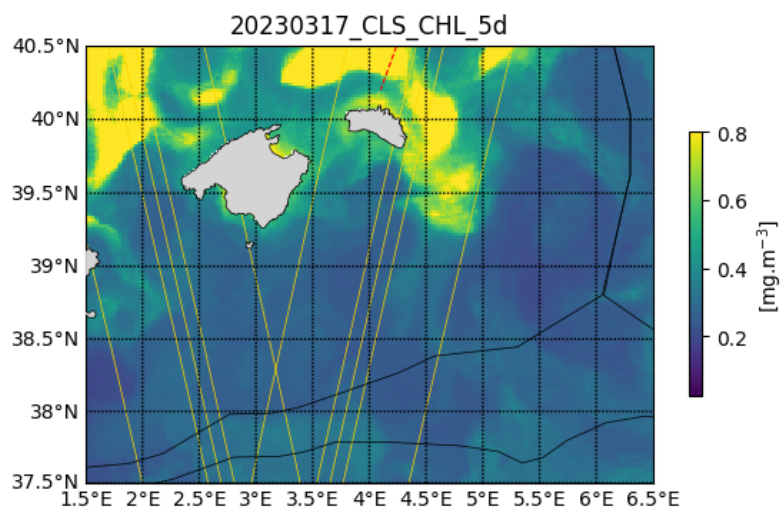
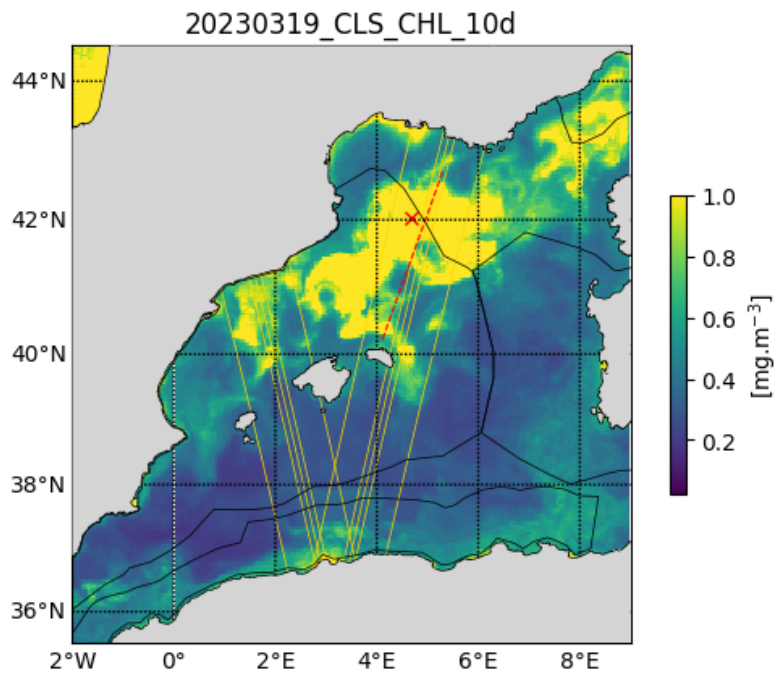


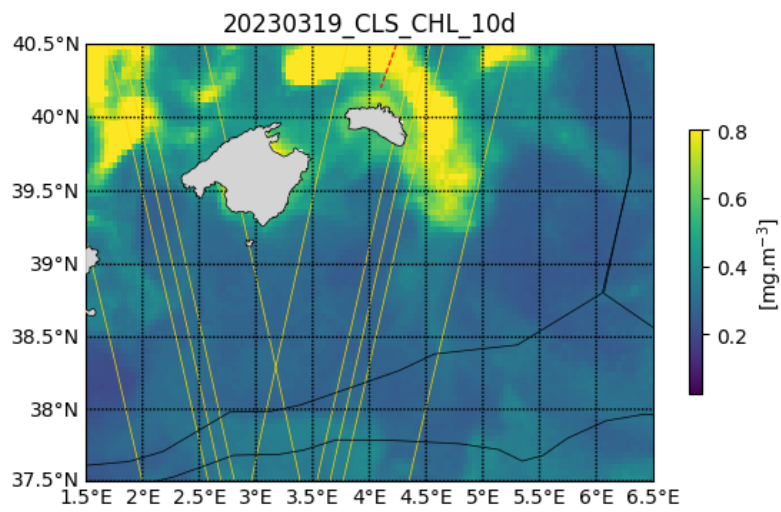
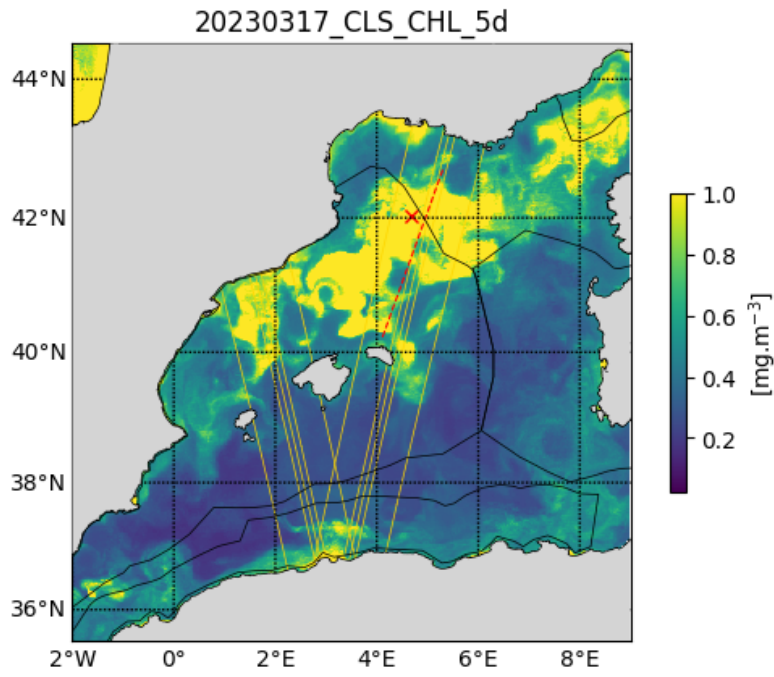
20230318\_CLS\_SST\_5d

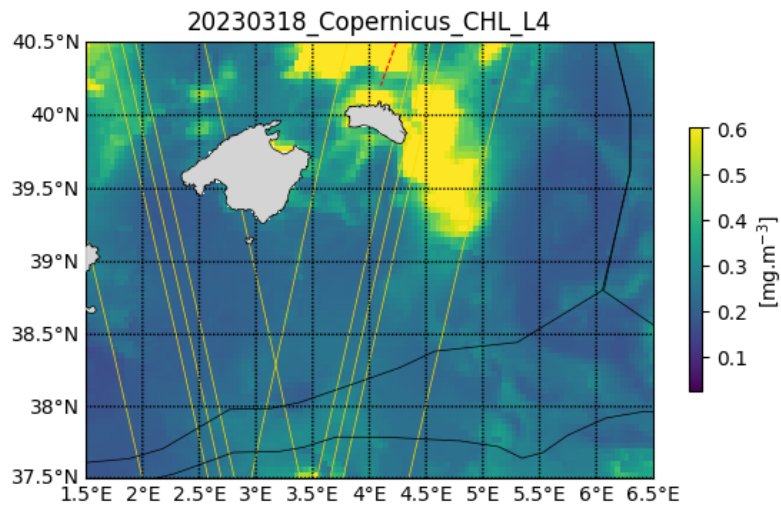
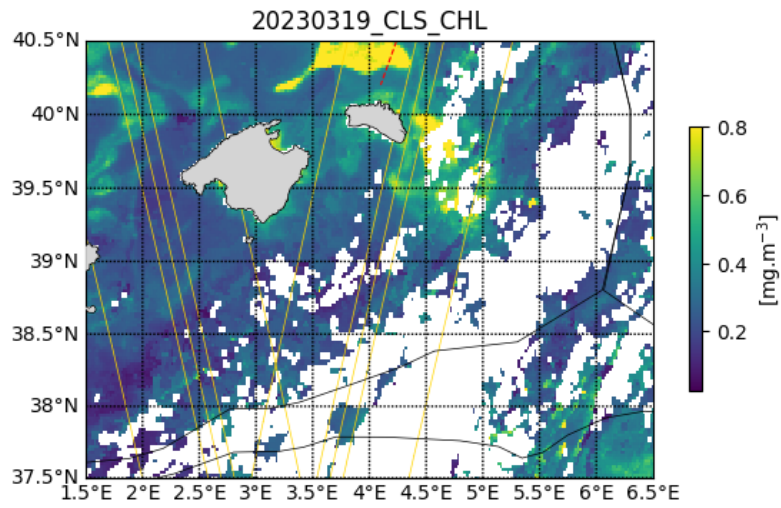


20230318\_CLS\_SST\_7d

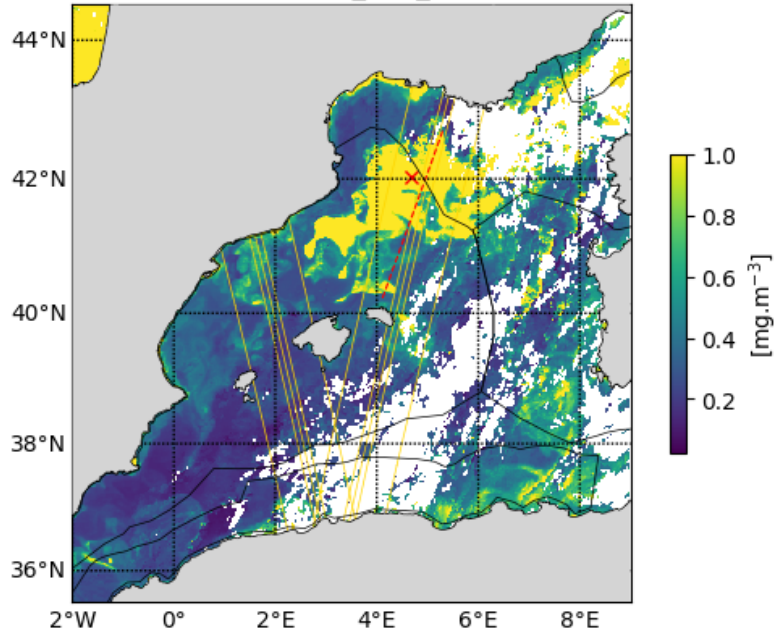




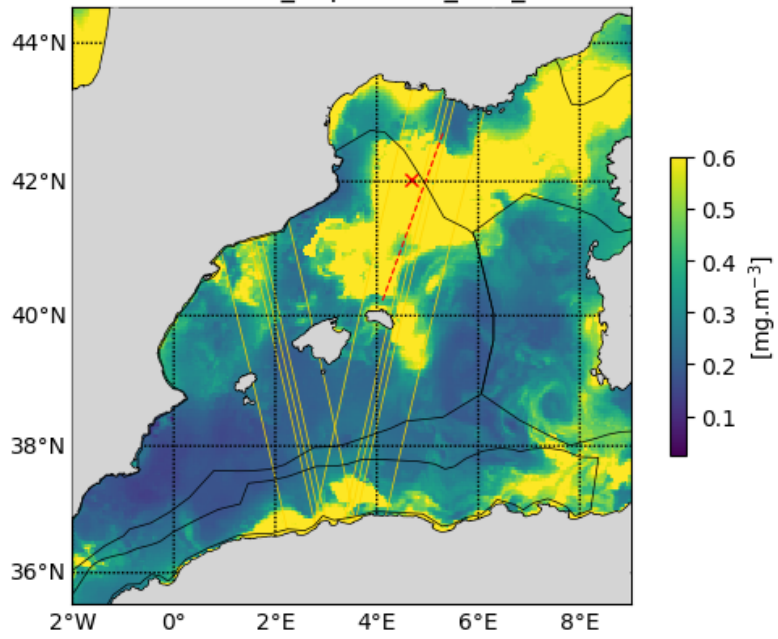


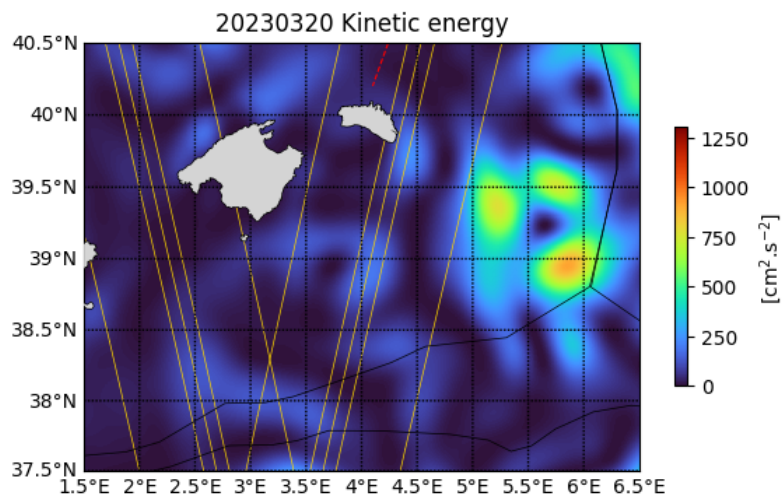
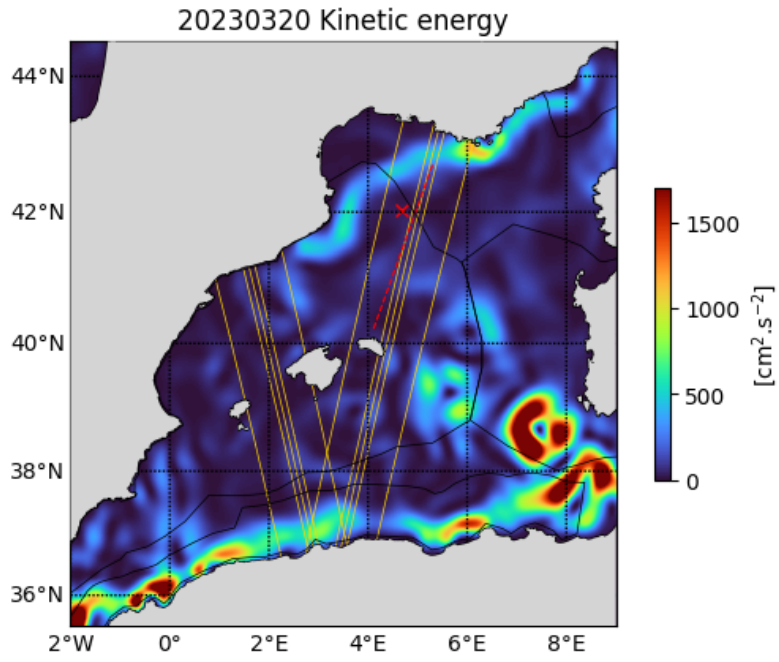


20230319\_CLS\_CHL

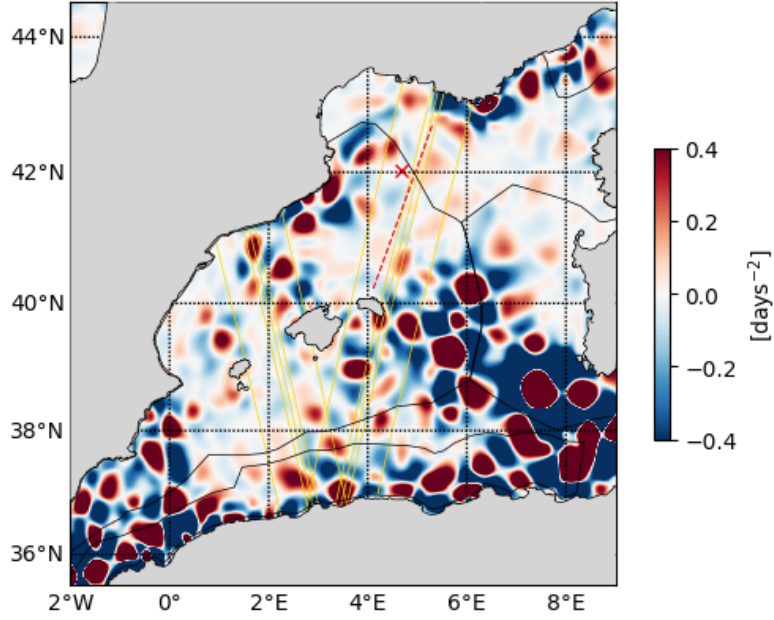


20230318\_Copernicus\_CHL\_L4

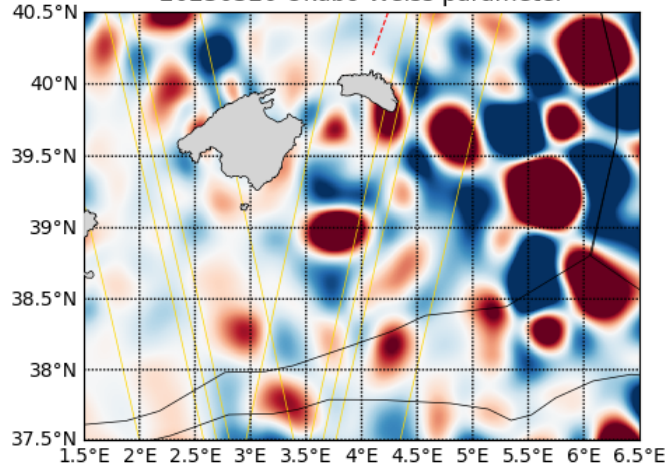




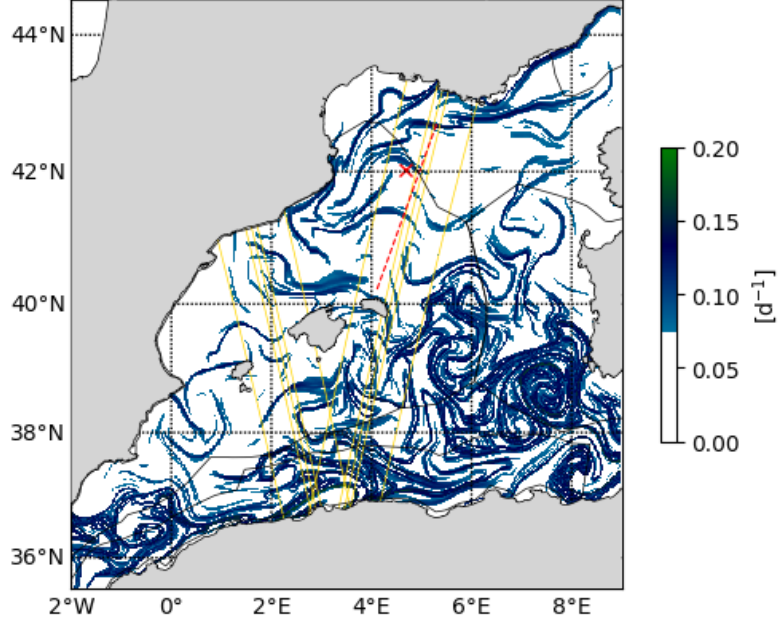
20230320 Okubo-Weiss parameter



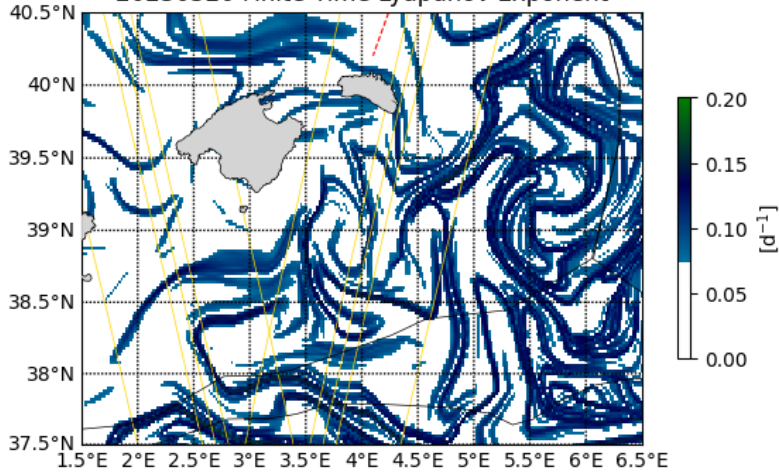
20230320 Okubo-Weiss parameter



20230320 Finite Time Lyapunov Exponent

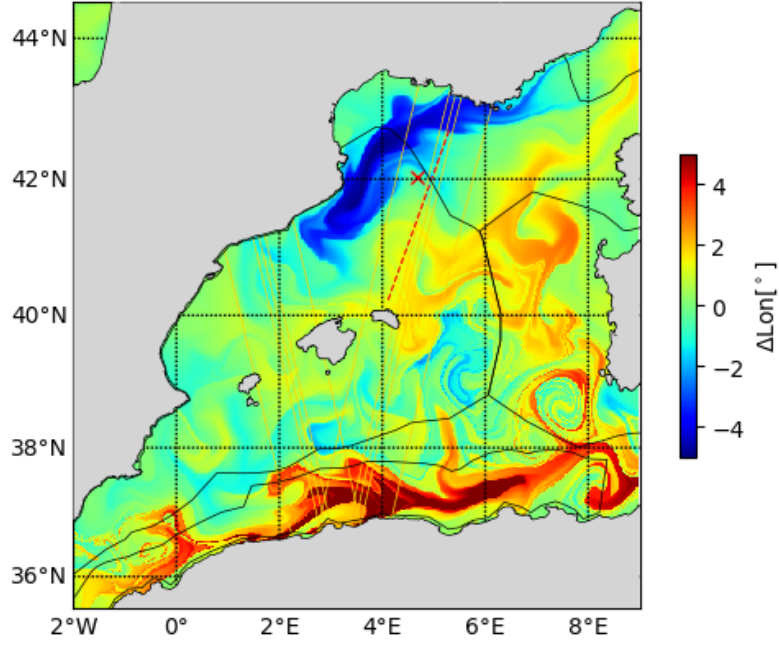


20230320 Finite Time Lyapunov Exponent

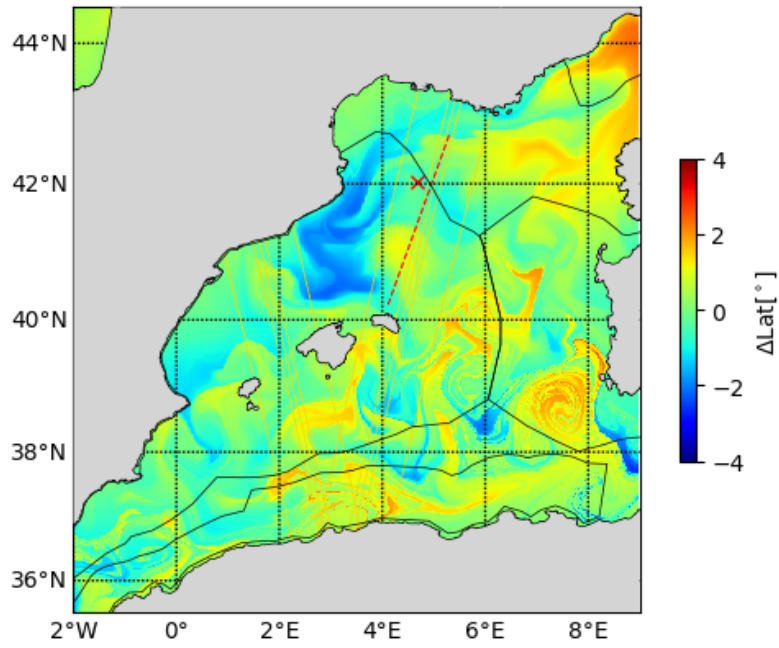


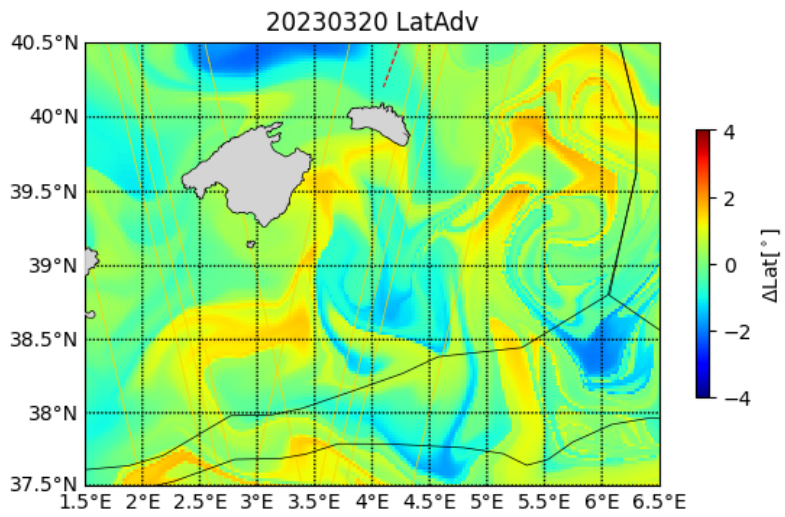
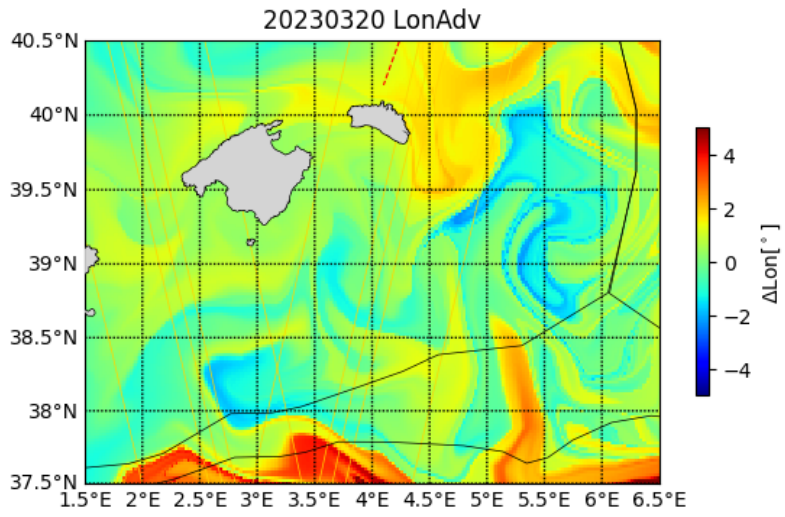


20230320 LonAdv

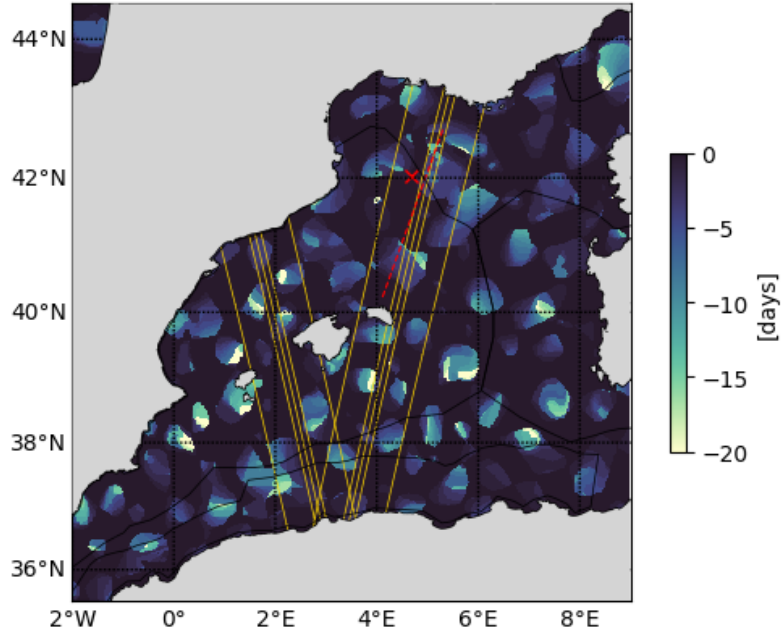


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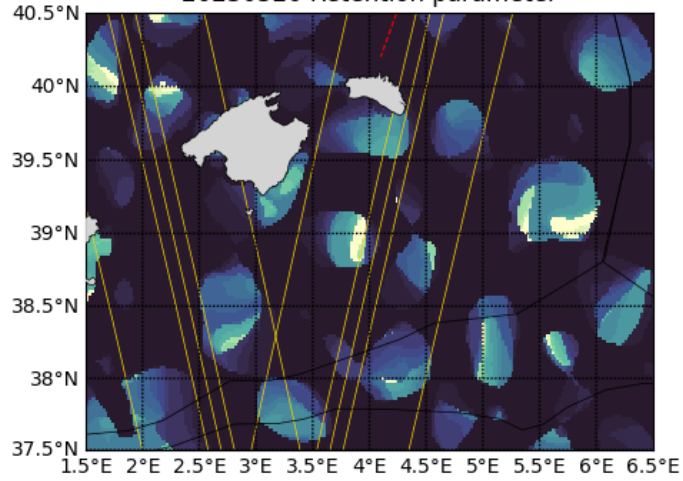




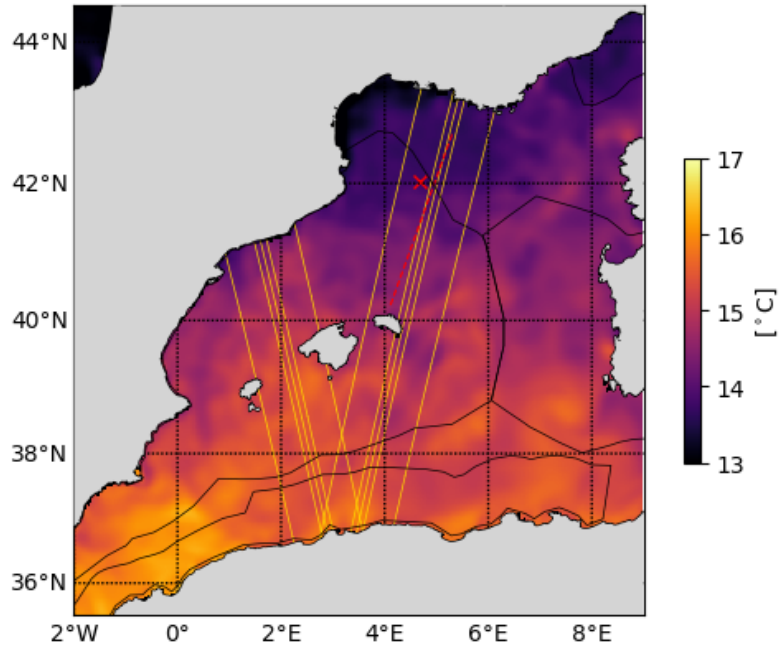
20230320 Retention parameter



20230320 Retention parameter



20230320 Tracer advection



20230320 Tracer advection

