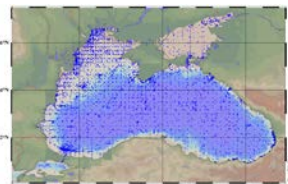


## Data

### Satellite

L1 SMOS;  
L1 S2 & S3  
L1 & L2 S-3A,  
Cryosat-2L4  
CMEMS\_DT 2018

### In situ

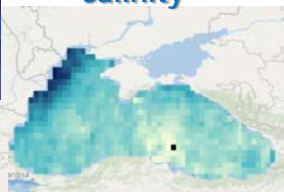


## Products (Level L3 & L4)

### Ocean color



### Salinity



### Altimetry



## Science cases

River plume tracking  
Ocean health indicators  
Coastal sea state  
Mesoscale  
Deoxygenation

## Consortium

Lead by:



Partners:



TERRASIGNA™

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## CONTACT

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Belgium

## Project

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[mgregoire@uliege.be](mailto:mgregoire@uliege.be)

## GET INVOLVED

Project homepage:

[www.eo4sibs.uliege.be/](http://www.eo4sibs.uliege.be/)

Follows us on social media:

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<https://twitter.com/Eo4Sibs>



# Earth Observation Data for Science and Innovation in the Black Sea



Ocean color Sentinel 2 data, Figure from Niculescu and Rusu, 2018

*Black Sea and Danube  
Regional Initiative - Science*

[www.eo4sibs.uliege.be/](http://www.eo4sibs.uliege.be/)

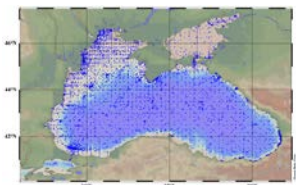


## In-situ data sets collection and archiving



Various datasets are gathered in a database (EO4SIBS Data Access). Freely available (open access), quality controlled and validated datasets from reliable providers which hold Black Sea data were targeted to support products and model development and validation.

Oxygen (EMODnet Chemistry&NIMRD Database)



Sea level – PSMSL Tide gauges

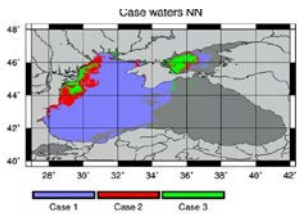
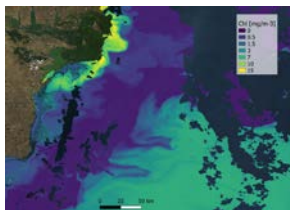
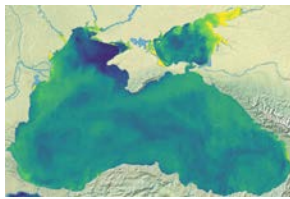


## Ocean color products



New algorithms developed for deriving high quality water turbidity, Suspended Particulate Matter (SPM) and chlorophyll-a exploiting the full potential of data delivered by Sentinel 2 and 3.

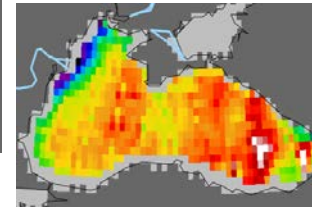
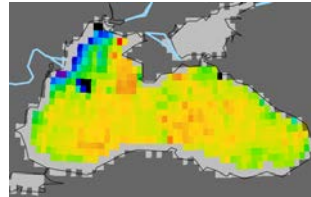
Optimized classification applied to each satellite image to classify the Black Sea water masses in 3 distinct classes (1, 2 and 3).



## Sea Surface Salinity products



New dedicated Soil Moisture and Ocean Salinity (SMOS) Sea Surface Salinity (SSS) products generated for the Black Sea, for the years 2011-2020, expected to monitor the plume of the main rivers discharges, which could help to better understand the freshwater dynamics in the basin.

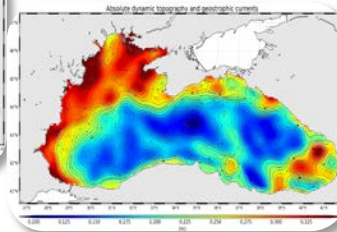
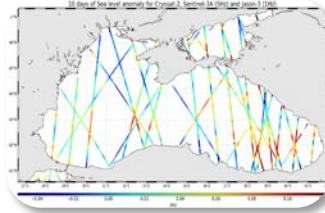


## Altimetry Products



High resolution 5Hz (~1.3km) Level-3 along-track Sea Level Anomaly for Cryosat-2 and Sentinel-3A better adapted to coastal studies.

Improved quality of Level-4 gridded products (CMEMS): Sea Surface Height product and derivatives (geostrophic currents).

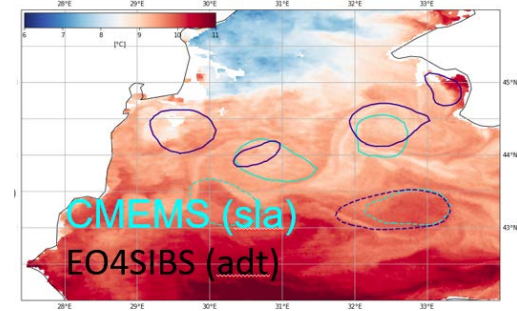


## Science case studies and valorization of the new EO4SIBS products



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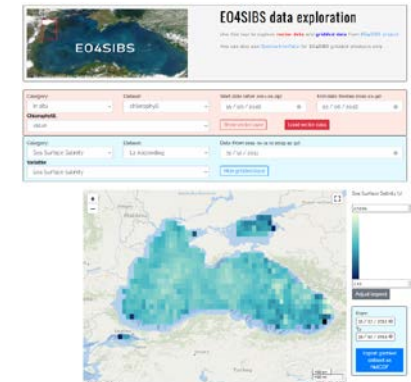
Valorisation of the new EO4SIBS products with emphasis on studying the dynamics of eddies: refinement of altimetry products allows a better description of coastal eddies.



## Web interface



Facilitates access to the developed products and results exploiting advanced data access and visualization tools.



[www.eo4sibs.uliege.be/map/map.php](http://www.eo4sibs.uliege.be/map/map.php)

