



**Creating products and knowledge
for the Mediterranean**



**ΔΗΜΟΚΡΙΤΕΙΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΡΑΚΗΣ** | **DEMOCRITUS
UNIVERSITY
OF THRACE**

THE CMEMS AND EMODNET PLATFORMS AND PRODUCTS

2nd ODYSSEA Summer School, Alonissos, 2-6/9/2019

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727277

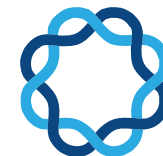
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ODYSSEA

What is CMEMS

- CMEMS is the **Copernicus Marine Environment Monitoring Service**, operated by Mercator Ocean in Toulouse, France
- It is a service providing **full, free and open access marine data** to regular and systematic reference
- It covers **all European regional seas**
- It is **based** largely **on satellite measurements** of parameters such as surface temperature, ocean color, sea surface height and sea ice, **as well as information from** circulation, wave and biogeochemical **models** validated **from measurements received from instruments in the sea.**

COPERNICUS marine service encompasses 3 main components: **SPACE** , **INSITU** and **SERVICES**

1. **SPACE** includes the ESA Sentinels
2. **INSITU** includes monitoring networks as buoys, drifters, gliders, moorings, etc.
3. **SERVICES** includes all data products (reanalysis, forecasts, satellite data, etc)

marine.copernicus.eu



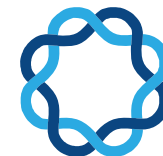
The screenshot shows the homepage of the Copernicus Marine Environment Monitoring Service (CMEMS). At the top left is the European Commission logo. The main header reads "COPERNICUS MARINE ENVIRONMENT MONITORING SERVICE" with the tagline "Providing PRODUCTS and SERVICES for all marine applications". A search bar is located in the top right. Below the header is a navigation menu with categories: ABOUT US, MARKETS & BENEFITS, NEWS, SCIENCE & MONITORING, TRAINING & EDUCATION, and SERVICES PORTFOLIO. The central banner features the text "ACCESS YOUR OCEAN INFORMATION" and a "GETTING STARTED" button. Three main content blocks are visible: "OCEAN PRODUCTS" (with a "DATA" button), "OCEAN MONITORING INDICATORS" (with a "TRENDS" button), and "OCEAN STATE REPORT" (with an "EXPERTISE" button). A "LATEST NEWS FLASH" section highlights "CMEMS:8365" as a "Temporary issue to access datasets remote subsetting services for Reanalysis products IN PROGRESS". A sidebar on the right contains a "SHORT-CUT TO SERVICES" menu with links for "REGISTER NOW!", "SCIENTIFIC QUALITY", "ONLINE TUTORIALS", and "COLLABORATIVE FORUM". At the bottom, there is an "EVENTS AGENDA" for Monday, 28th, and a news item about "NEW COPERNICUS SENTINEL-3B SATELLITE OFFERS INCREASED WATER QUALITY MONITORING ACCURACY". The footer includes navigation links for ABOUT, PARTNERS & BENEFITS, FEEDBACK, and ANY QUESTIONS?



ODYSSEA

Which are CMEMS Products

CMEMS Data Products

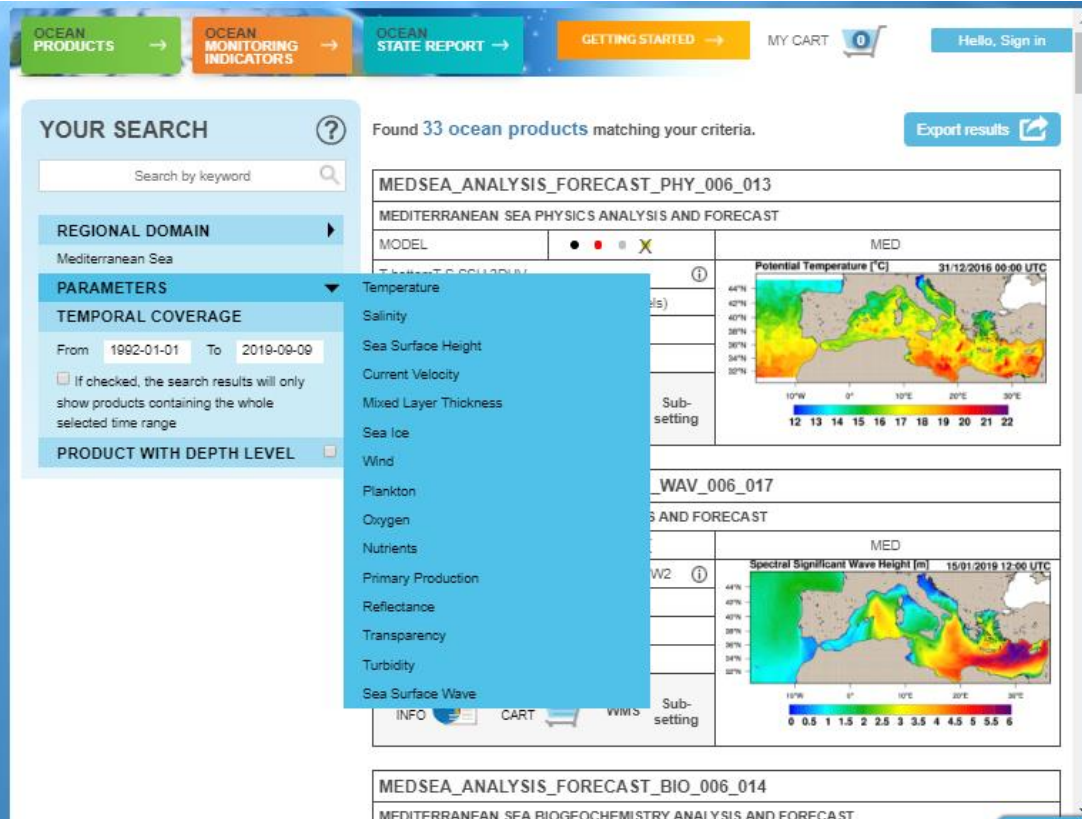


ODYSSEA

The screenshot displays the ODYSSEA web application interface. At the top, there is a navigation bar with buttons for 'OCEAN PRODUCTS', 'OCEAN MONITORING INDICATORS', 'OCEAN STATE REPORT', 'GETTING STARTED', 'MY CART', and 'Hello, Sign in'. Below this is a search section titled 'YOUR SEARCH' with a search bar and a 'Found 174 ocean products matching your criteria.' message. A dropdown menu for 'REGIONAL DOMAIN' is open, showing options like 'Global Ocean', 'Arctic Ocean', 'Baltic Sea', etc. The main content area shows search results for 'GLOBAL_ANALYSIS_FORECAST_PHY_001_024' and 'GLOBAL_ANALYSIS_FORECAST_WAV_001_027', each with a world map visualization. The bottom of the page features a footer with logos for the European Union and Copernicus, and links for 'ABOUT US', 'PARTNERS & STAKEHOLDERS', 'MARKETS', 'FEEDBACK SURVEY', and 'ANY QUESTIONS? Ask the Service Desk'.

CMEMS Data Products for the Med

There are currently 33 marine data products for the Mediterranean Sea in CMEMS



The screenshot shows the CMEMS website interface. At the top, there are navigation tabs: OCEAN PRODUCTS, OCEAN MONITORING INDICATORS, OCEAN STATE REPORT, and GETTING STARTED. A user is logged in as 'Hello, Sign in'. The main search area shows 'YOUR SEARCH' with a search bar and filters for REGIONAL DOMAIN (Mediterranean Sea), PARAMETERS (Temperature, Salinity, Sea Surface Height, Current Velocity, Mixed Layer Thickness, Sea Ice, Wind, Plankton, Oxygen, Nutrients, Primary Production, Reflectance, Transparency, Turbidity, Sea Surface Wave), TEMPORAL COVERAGE (From 1992-01-01 to 2019-09-09), and PRODUCT WITH DEPTH LEVEL. The search results show 33 ocean products matching the criteria. The first product is 'MEDSEA_ANALYSIS_FORECAST_PHY_006_013' (MEDITERRANEAN SEA PHYSICS ANALYSIS AND FORECAST) with a map of Potential Temperature [°C] for 31/12/2016 00:00 UTC. The second product is 'MEDSEA_ANALYSIS_FORECAST_BIO_006_014' (MEDITERRANEAN SEA BIOGEOCHEMISTRY ANALYSIS AND FORECAST) with a map of Spectral Significant Wave Height (m) for 15/01/2019 12:00 UTC.

CMEMS Data Products for the Med



These data products are divided into:

- **Forecasts** from numerical models
- **Reanalysis of historic** data from assimilated numerical models
- **Insitu NRT** and delayed observations from on-site sensors
- **NRT and reprocessed** satellite data

CMEMS Data Products for the Med – Model Data



Product	Analysis and Forecast	Reanalysis or Hindcast	Variables
<u>SEA PHYSICS</u>	0.042 deg. (~4.6km) 141 Layers	0.0625 deg. (~6.9km) 72 Layers	T bottom T S SSH 3DUV
<u>SEA WAVES</u>	0.042 deg. Surface only	0.042 deg. Surface only	SSH SWH MWP VMDR VSDXY W W SW1 SW2
<u>SEA BIOGEOCHEMISTRY</u>	0.042 deg. 125 Layers	0.0625 deg. 72 Layers	SSH CHL PHYC O2 NO3 PO4 PP

CMEMS Data Products for the Med - In-situ Observations Data



Product	Resolution	Level	Variables
<u>IN-SITU NEAR REAL TIME OBSERVATIONS</u>	undefined	L2	T S CHL SWH VMDR

CMEMS Data Products for the Med - Satellite Data



Product	Resolution	Level	Variables
<u>SEA SURFACE HEIGHTS AND DERIVED VARIABLES</u> NRT OR REPROCESSED	0.25 deg. (27.5km) 0.125 (13.75km)	L4	SSH UVG
<u>SEA LEVEL ANOMALIES</u> NRT OR REPROCESSED TAILORED FOR DATA ASSIMILATION	7km	L3	SSH
<u>SEA SURFACE HEIGHTS</u> NRT TAILORED FOR DATA ASSIMILATION	0.125 (13.75km)	L3	SSH
<u>SEA SURFACE CHLOROPHYLL CONCENTRATION</u> FROM MULTI SATELLITE OBSERVATIONS	1km	L3 and L4	CHL
<u>SEA REMOTE SENSING REFLECTANCES AND ATTENUATION COEFFICIENT AT 490NM</u> FROM MULTI SATELLITE AND SENTINEL-3 OLCI OBSERVATIONS	1km	L3 and L4	RRS CDM APHY BBP KD
<u>SEA SURFACE TEMPERATURE</u> MONO AND MULTI-SENSOR OBSERVATIONS	0.01 deg. (~1.1km) 0.02 deg. (~2.2km) 0.04 deg. (~4.4km) 0.0625 deg. (~6.9km)	L3 and L4	SST
<u>SEA SURFACE WINDS</u>	0.25 deg. (27.5km) 0.125 (13.75km)	L3 and L4	WIND

CMEMS Model Variables



ODYSSEA

Physics

Potential Temperature [degC], T

Salinity, S

Sea Surface Height [m], SSH

Ocean mixed layer thickness [m], MLD

Horizontal Currents meridional and zonal component [m/s], CUR

Sea floor Potential Temperature [degC], bottomT

Waves

Spectral significant wave height [m], VHM0

Wave period at spectral peak / peak period [s], VTPK

Spectral moments (-1,0) wave period [s], VTM10

Spectral moments (0,2) wave period [s], VTM02

Mean wave direction from [degree], VMDR

Spectral significant wind wave height [m], VHM0 WW

Spectral moments (0,1) wind wave period [s], VTM01 WW

Mean wind wave direction from [degree], VMDR WW

CMEMS Model Variables



ODYSSEA

Waves

Spectral significant primary swell wave height [m], VHM0 SW1
Spectral significant secondary swell wave height [m], VHM0 SW2
Spectral moments (0,1) primary swell wave period [s], VTM01 SW1
Spectral moments (0,1) secondary swell wave period [s], VTM01 SW2
Mean primary swell wave direction from [degree], VMDR SW1
Mean secondary swell wave direction from [degree], VMDR SW2
Wave principal direction at spectral peak [degree], VPED
Stokes drift U (m/s), VSDX Stokes drift V [m/s], VSDY

Biogeochemistry

Sea surface height above geoid [m], SSH
Mass concentration of chlorophyll a in sea water [mg m⁻³], CHL
Mole concentration of phytoplankton [mmol m⁻³], PHYC
Mole concentration of dissolved molecular oxygen in sea water [mmol m⁻³], O2
Mole concentration of nitrate in sea water [mmol m⁻³], NO3
Mole concentration of phosphate in sea water [mmol m⁻³], PO4
Net primary production of biomass [mg m⁻³ day⁻¹], PP



ODYSSEA

How to view available CMEMS parameters and data online

CMEMS GUI web portal



ODYSSEA

COPERNICUS MARINE ENVIRONMENT MONITORING SERVICE
Providing PRODUCTS and SERVICES for all marine applications

European Commission

Search terms OK

ABOUT US | USE CASES & MARKETS | NEWS | SCIENCE & MONITORING | TRAINING & EDUCATION | SERVICES PORTFOLIO

ACCESS YOUR OCEAN INFORMATION

GETTING STARTED →

OCEAN PRODUCTS
Ocean product catalogue, to download or visualize data across nearly 15 variables, including hindcast, current and forecast data.
DATA →

OCEAN MONITORING INDICATORS
Essential variables monitoring the health of the ocean
TRENDS →

OCEAN STATE REPORT
Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events
EXPERTISE →

2019 07 MAY.

LATEST NEWS FLASH
CMEMS:9565
APRIL2019 Release - NORTHWESTSHELF_ANALYSIS
- Date time badly interpreted due Time Attributes in content of netCDF file
IN PROGRESS
ALL NEWS FLASH

OCEANPREDICT'19 - COPERNICUS

CMEMS GUI web portal



ODYSSEA

ABOUT US | USE CASES & MARKETS | NEWS | SCIENCE & MONITORING | TRAINING & EDUCATION | SERVICES PORTFOLIO | SHORT-CUT TO SERVICES

Home > Services portfolio > Access to products

OCEAN PRODUCTS → OCEAN MONITORING INDICATORS → OCEAN STATE REPORT → GETTING STARTED → MY CART 0 Hello, Sign in

YOUR SEARCH

Search by keyword

REGIONAL DOMAIN
Mediterranean Sea

PARAMETERS

TEMPORAL COVERAGE
From 1992-01-01 To 2019-05-20
 If checked, the search results will only show products containing the whole selected time range

PRODUCT WITH DEPTH LEVEL

hourly-instantaneous			
MORE INFO	ADD TO CART	WMS	Sub-setting
MEDSEA_ANALYSIS_FORECAST_BIO_006_014			
MEDITERRANEAN SEA BIOGEOCHEMISTRY ANALYSIS AND FORECAST			
MODEL	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	MED	
SON-OCE-phys-02-NOS-F04-FF			
0.042 degree x 0.042 degree (125 depth levels)			
From 2017-01-01 to Present			
monthly-mean <input checked="" type="checkbox"/> daily-mean			
MORE INFO	ADD TO CART	WMS	Sub-setting
MEDSEA_REANALYSIS_PHYS_006_004			
MEDITERRANEAN SEA PHYSICS REANALYSIS			
MODEL	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	MED	

CMEMS GUI web portal



ABOUT US | USE CASES & MARKETS | NEWS | SCIENCE & MONITORING | TRAINING & EDUCATION | SERVICES PORTFOLIO | SHORT-CUT TO SERVICES

Home > Services portfolio > Access to products

OCEAN PRODUCTS →

MY CART 1

Hello, Sign in

You have 1/10 products Empty cart

MEDSEA_ANALYSIS_FORECAST_BIO_006_014 **VIEW** DATA DOWNLOAD REMOVE

CLOSE X

YOUR SEARCH

Search by keyword

REGIONAL DOMAIN
Mediterranean Sea

PARAMETERS

TEMPORAL COVERAGE
From 1992-01-01 To 2019-05-20
 If checked, the search results will only show products containing the whole selected time range

PRODUCT WITH DEPTH LEVEL

MEDSEA_ANALYSIS_FORECAST_BIO_006_014

MEDITERRANEAN SEA BIOGEOCHEMISTRY ANALYSIS AND FORECAST

MODEL	X X X X . X	MED
SSH CHL PHYC O2 NO3 PO4 PP		
0.042 degree x 0.042 degree (125 depth levels)		
From 2017-01-01 to Present		
monthly-mean, daily-mean		

Chlorophyll Concentration [mg/m³] 01.01.2017 12:00 UTC

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

MORE INFO ADD TO CART WMS Sub-setting

MEDSEA_REANALYSIS_PHYS_006_004

MEDITERRANEAN SEA PHYSICS REANALYSIS

MODEL		MED
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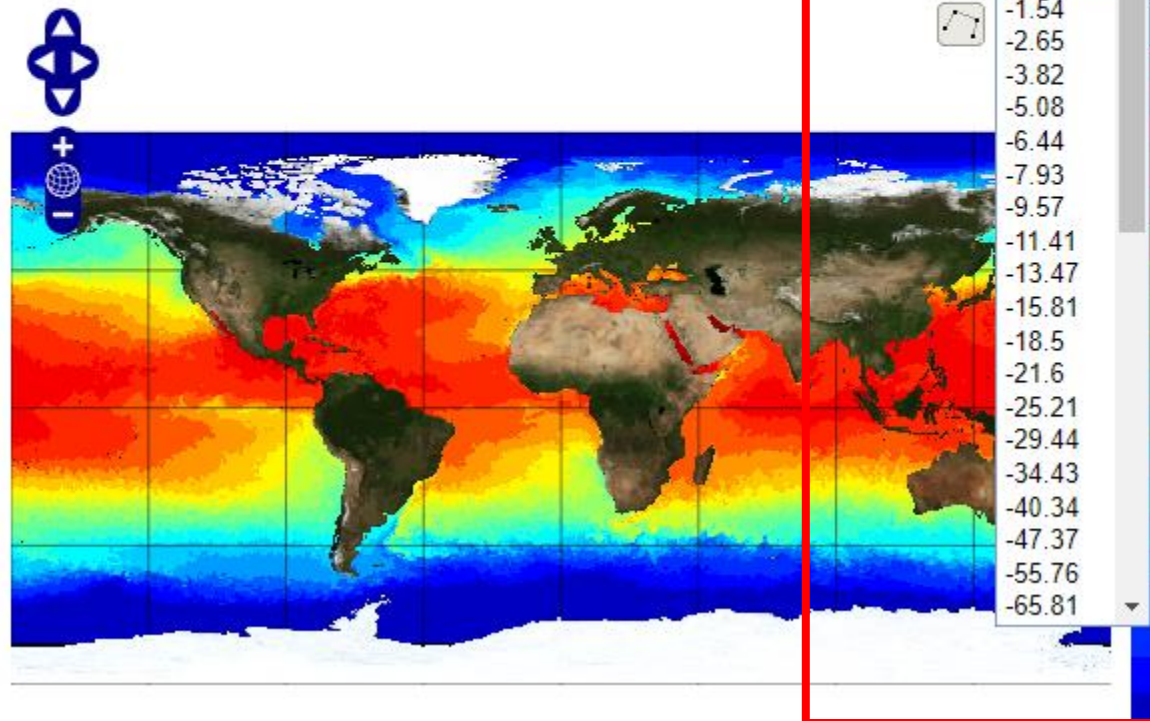
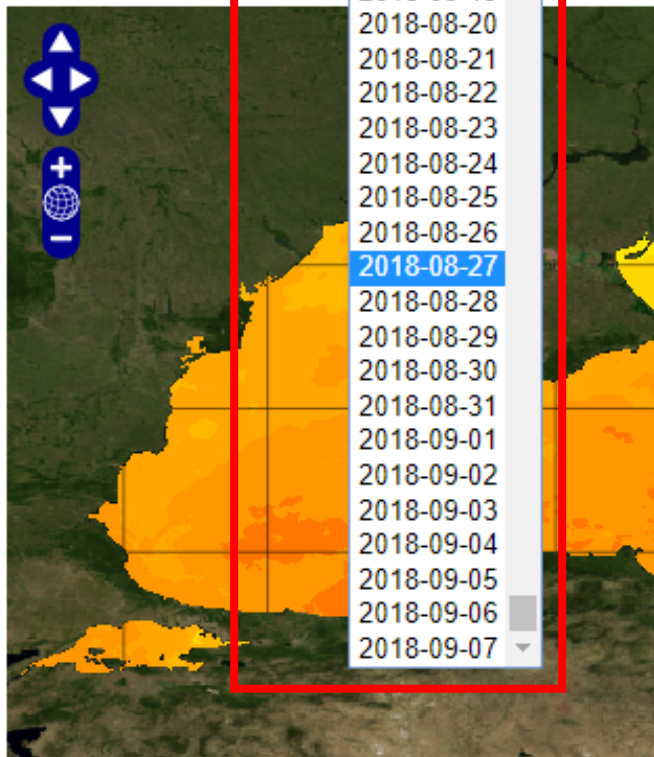
CMEMS Viewer

Date and Depth Selection



Product id: SST_BS_SST_L4_NRT_OBSE
Dataset: Black Sea SST Analysis, L4,
Variable: sea_surface_temperature
Units: kelvin Time: 2018-09-07 00:00:00

Product id: GLOBAL_ANALYSIS_FORECAST_PHY_001_024
Dataset: daily mean fields from Global Ocean Physics Analysis and Forecast
Variable: sea_water_potential_temperature
Units: degrees_C Time: 2018-09-07 12:00:00.000Z

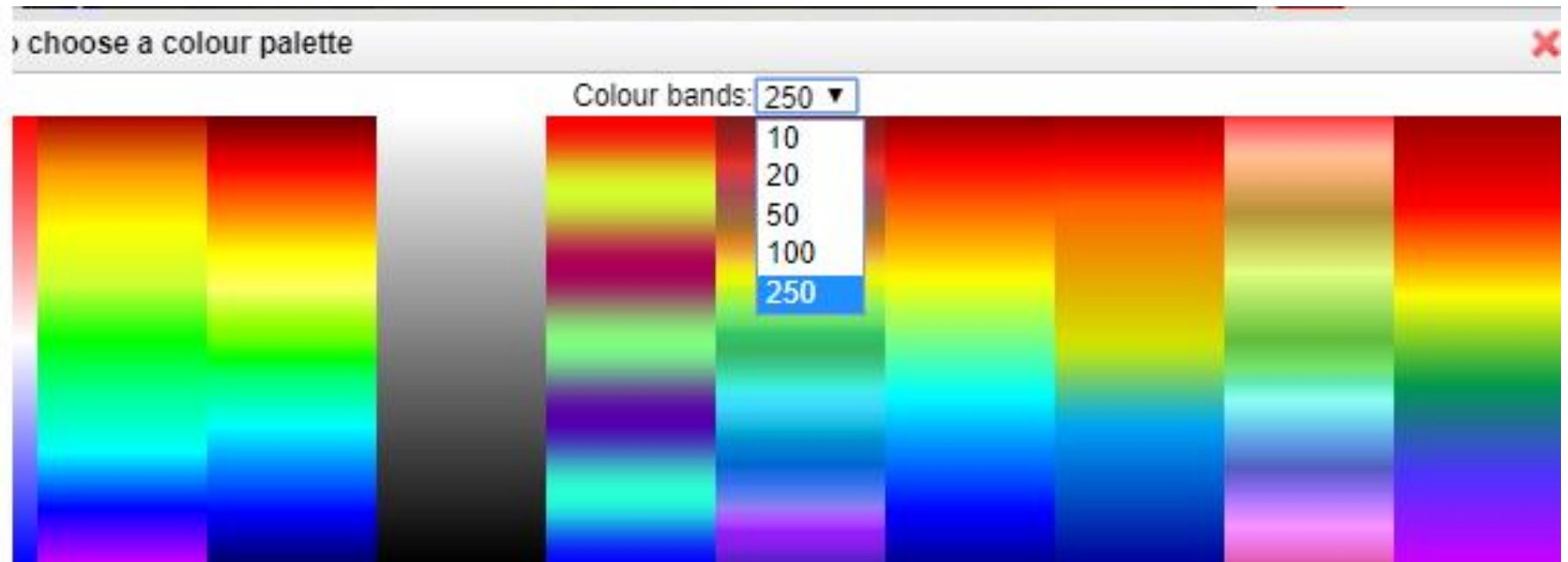


CMEMS Viewer

Color palette



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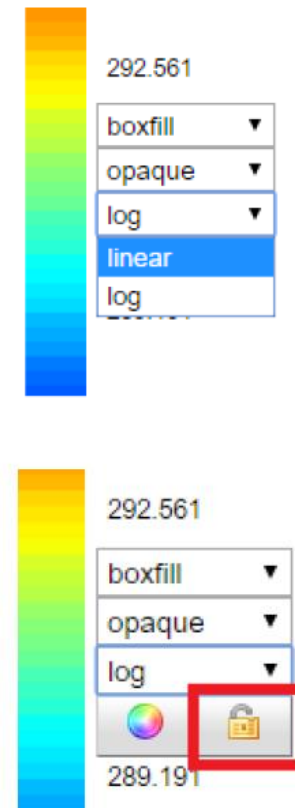
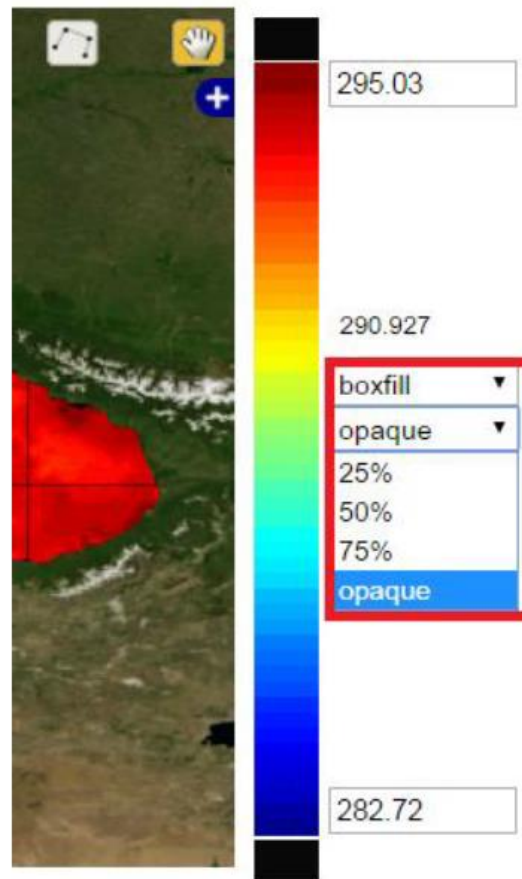
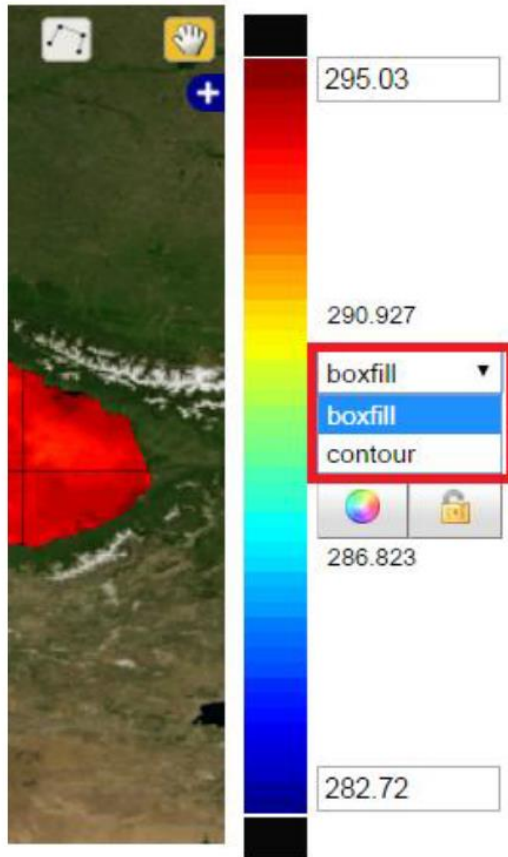


CMEMS Viewer

Boxfill, opacity and scale type



ODYSSEA

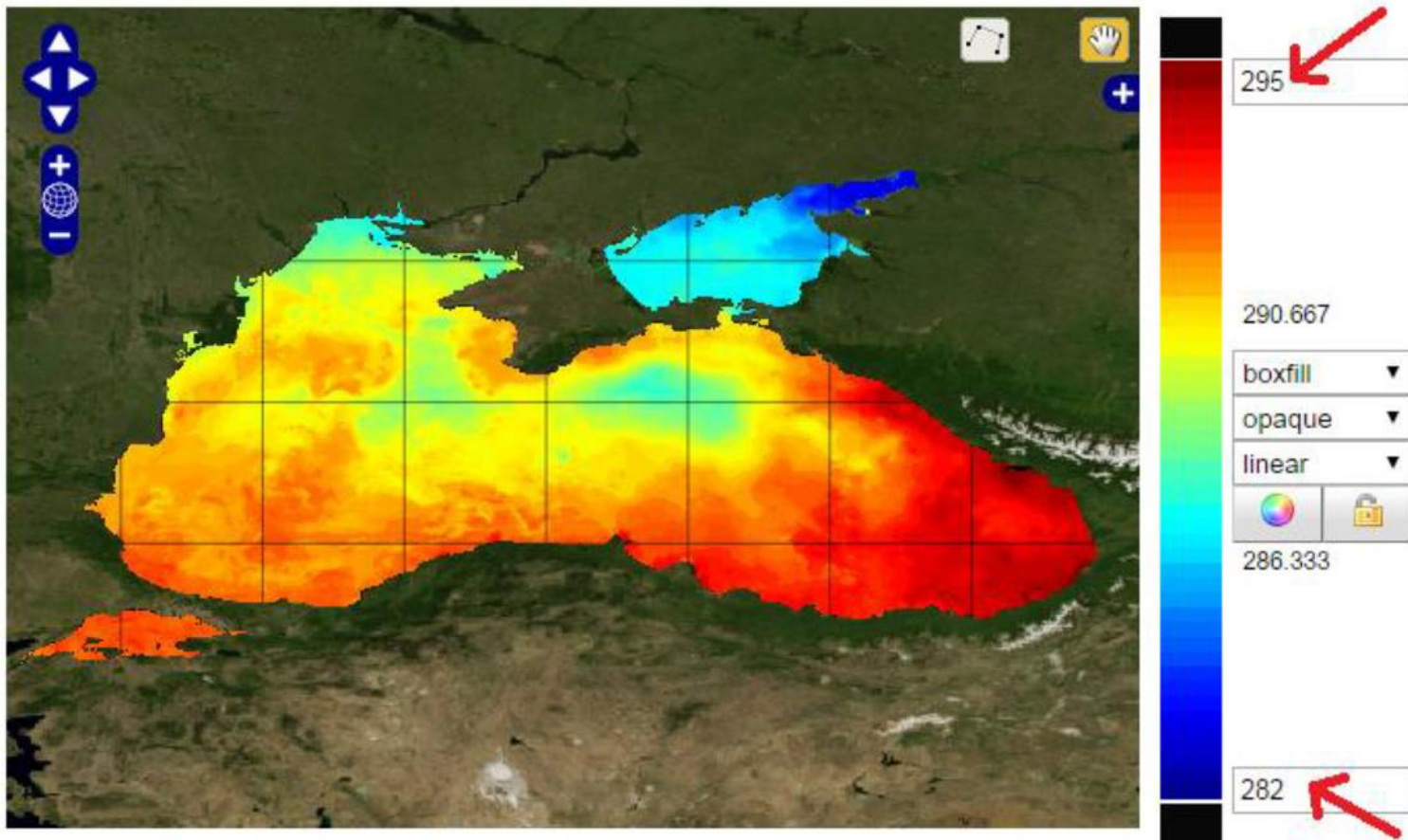


CMEMS Viewer

Scale Selection

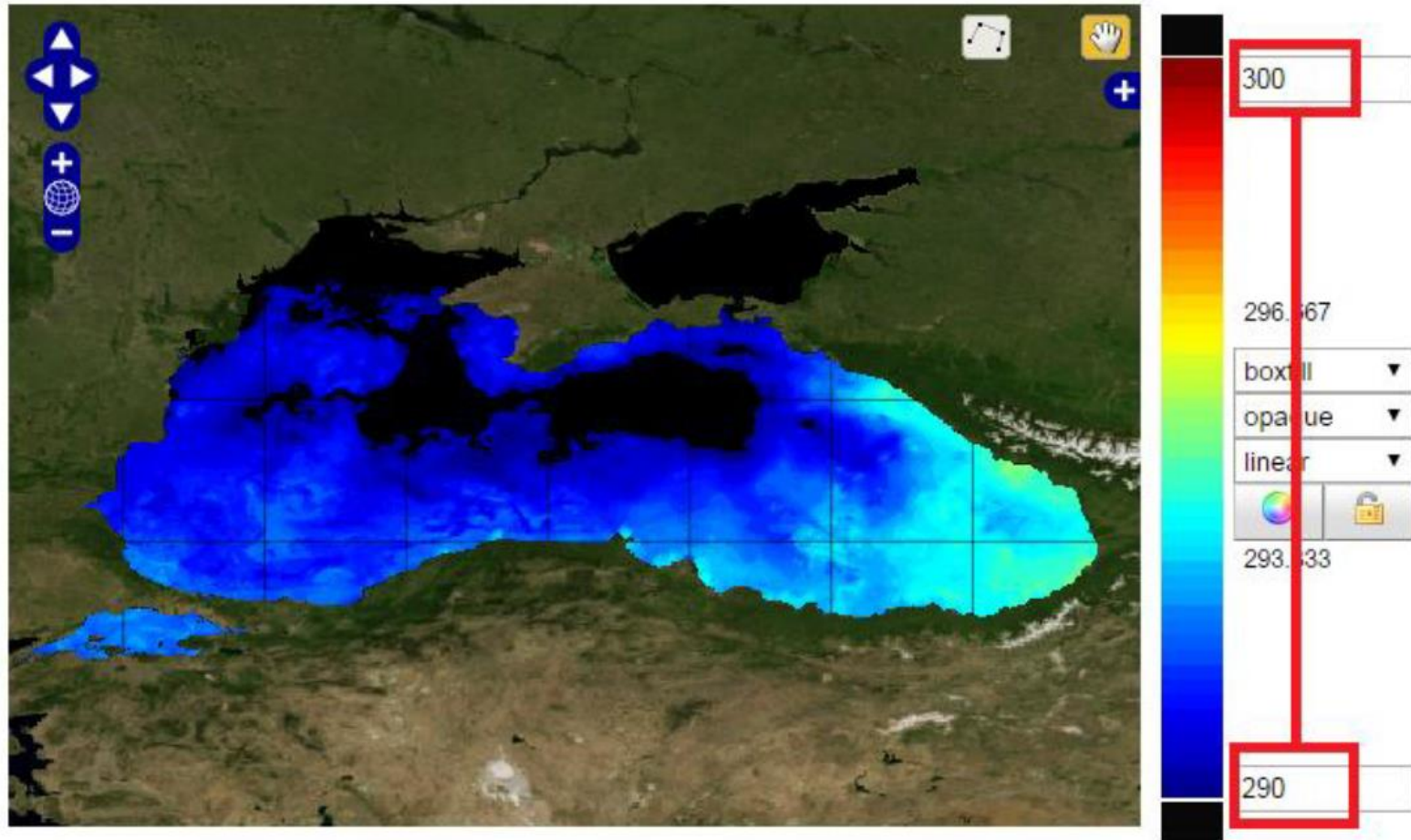


ODYSSEA



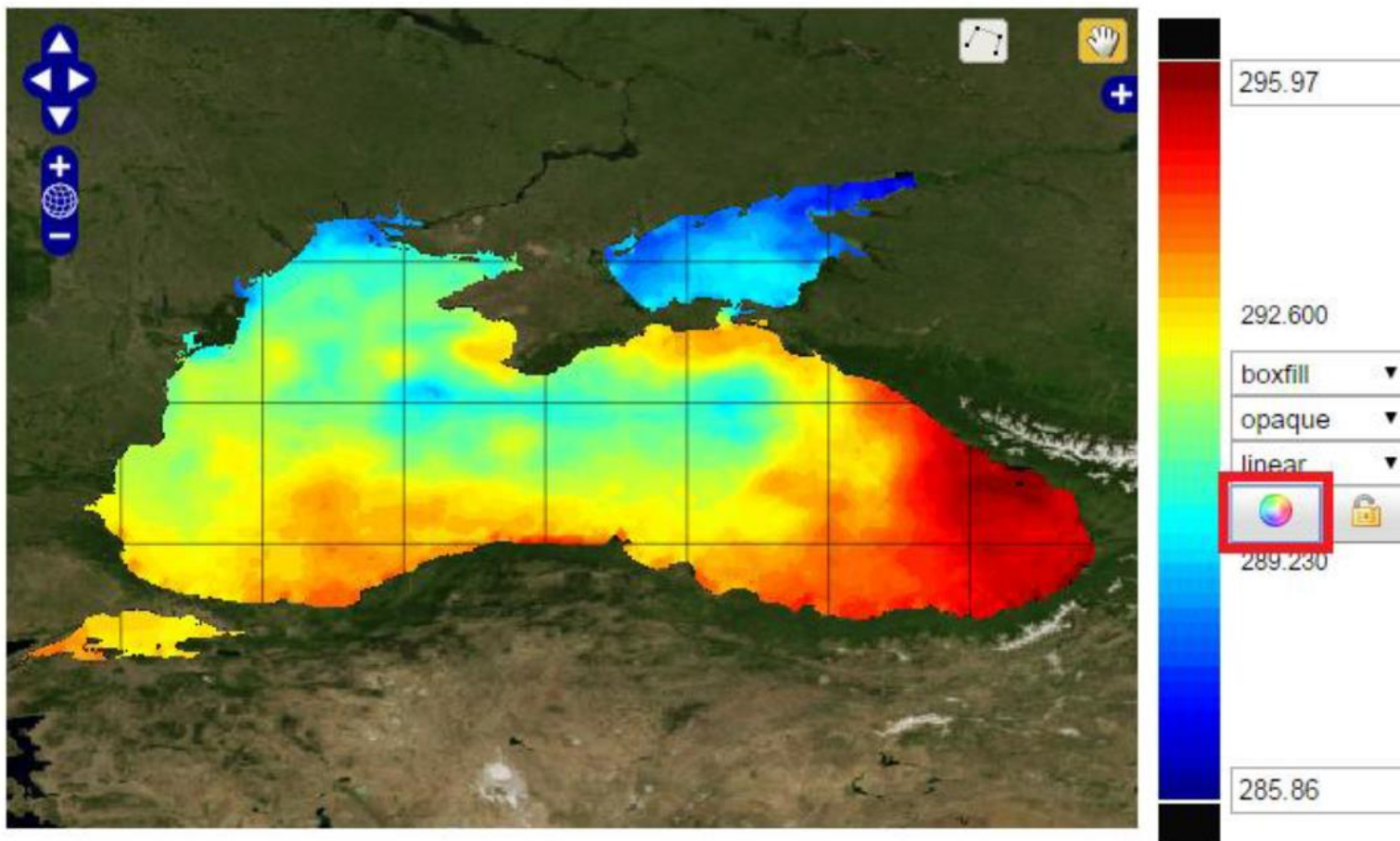
CMEMS Viewer

Color Scale Manual Adjust



CMEMS Viewer

Color Scale Auto-adjust

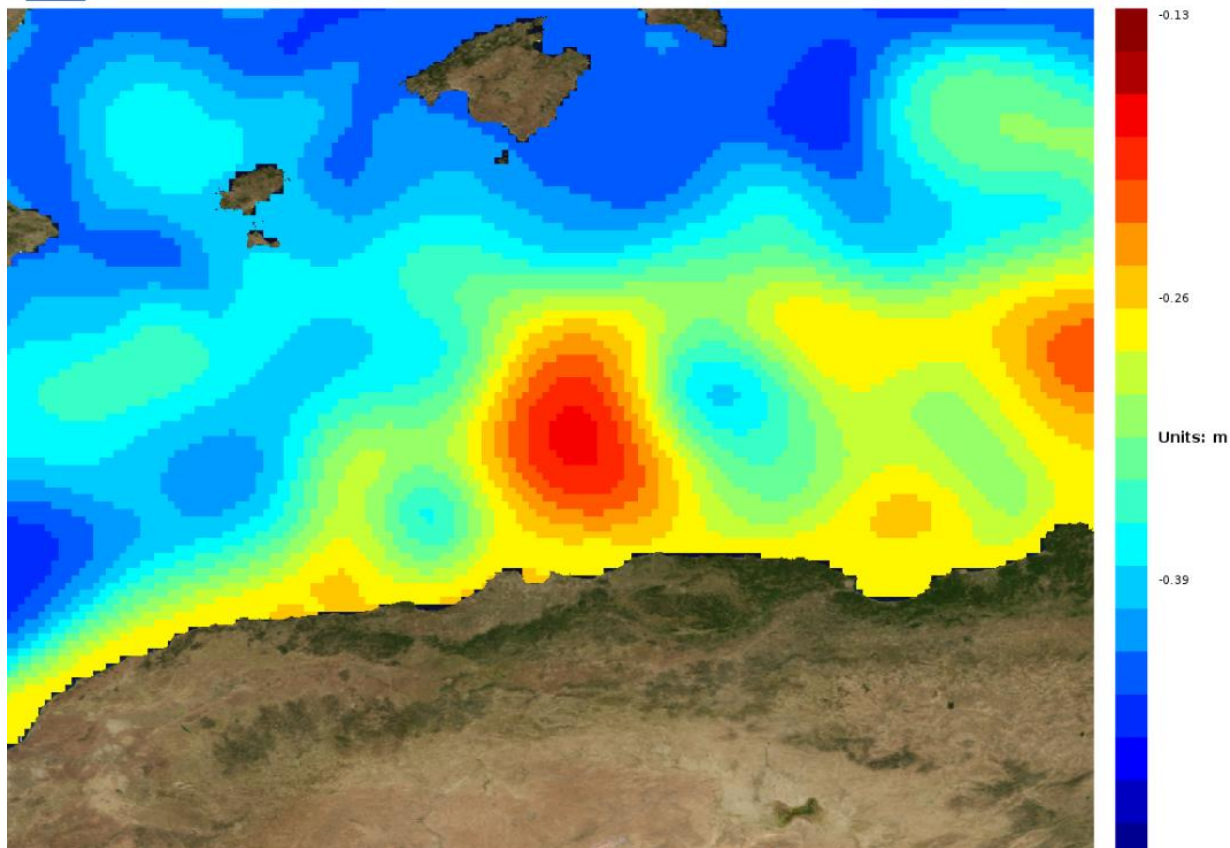


CMEMS Viewer

PNG Image Export



Sea Surface Height (2D) - Monthly Mean
sea surface height above geoid
Date: 2018-07-16 00:00 UTC





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CMEMS Download Mechanisms

CMEMS Download Mechanisms



ODYSSEA

CMEMS is offering 2 different authenticated Download Mechanisms. **For all of them, the user can authenticate with his CMEMS login and password.**

- **Subsetter:** The “Subsetter” allows you to subset the data, and should be used if you wish to download a small part of the total dataset.
- **CMEMS FTP:** The “FTP download” allows to download an entire dataset directly from the FTP server at the supply center.

Access on download services:

- via Graphical User Interface, GUI (through the web portal),
- via a machine to machine interface (script)

For FTP:

- via a web browser,
- via an FTP client with GUI.
- via a machine to machine interface (script)

What are the advantages of each Download Mechanism?

SUBSETTER



ODYSSEA

User can retrieve a subset of gridded datasets (exactly what he needs, variable, geospatial coverage, temporal coverage) through http and https protocol.

Advantages

- User **minimizes the volume of data** transiting on the network, and the volume of data to be stored on his computer.
- User **selects the different parameters of his request** in a “easy to understand” way: variable can be selected via their names or standard names.
- **Information on dataset** (notably the updated temporal coverage) and on the request (volume of the request), **can be provided to user before running the request** (via GUI or via script).
- Security of the authentication (https, CAS authentication with a ticket).

What are the advantages of each Download Mechanism?

CMEMS FTP DOWNLOAD



ODYSSEA

User can retrieve data files by selecting files in a directory through FTP protocol.

- Download at once the **entire geospatial coverage and all variable(s) of dataset.**
- Performances of the server depend only on disk access performances and bandwidth.
- **FTP protocol is well known** among users.



ODYSSEA

How to download CMEMS parameters and data via web browser

CMEMS GUI web portal



The screenshot displays the Copernicus Marine Environment Monitoring Service (CMEMS) web portal. At the top, the European Commission logo is on the left, and the text "COPERNICUS MARINE ENVIRONMENT MONITORING SERVICE" is centered, with the tagline "Providing PRODUCTS and SERVICES for all marine applications" below it. A search bar with "Search terms" and "OK" is on the right. A navigation menu includes "ABOUT US", "USE CASES & MARKETS", "NEWS", "SCIENCE & MONITORING", "TRAINING & EDUCATION", "SERVICES PORTFOLIO", and "SHORT-CUT TO SERVICES". A breadcrumb trail reads "Home > Services portfolio > Access to products".

A horizontal bar contains several buttons: "OCEAN PRODUCTS", "OCEAN MONITORING INDICATORS", "OCEAN STATE REPORT", "GETTING STARTED", "MY CART" (with a "0" in a cart icon), and a user profile button "Hello, Sign in" which is highlighted with a red rectangle. Below this bar, the "YOUR SEARCH" section shows a search box with "Search by keyword" and a magnifying glass icon. To the right, it states "Found 174 ocean products matching your criteria." and includes an "Export results" button with a share icon.

The search results for "GLOBAL_ANALYSIS_FORECAST_PHY_001_024" are displayed in a table-like format:

GLOBAL_ANALYSIS_FORECAST_PHY_001_024		
GLOBAL OCEAN 1/12° PHYSICS ANALYSIS AND FORECAST UPDATED DAILY		
MODEL	● ● ● ●	GLO
T bottomT S SSH 3DUV MLD SIC SIT SIUV ⓘ		
0.083 degree x 0.083 degree (50 depth levels)		
From 2016-01-01 to Present		
monthly-mean, daily-mean, hourly-mean		
MORE INFO ⓘ	ADD TO CART	WMS Sub-setting

On the right side of the search results, there is a world map visualization showing ocean temperature or salinity anomalies, with a color scale from blue (cooler) to red (warmer).

CMEMS GUI web portal



ODYSSEA

The **Graphical User Interface (GUI)** may offer (depending on Product Type) up to **2 data access options** delivering standard format:

Log In

Need a CMEMS account? [Create an account](#)

USERNAME 1

PASSWORD 2

Remember Me 3

[Forgot username?](#) - [Forgot password?](#)

If you have trouble logging in, make sure your browser is set to accept cookies.

For security reasons, please Exit your web browser when you quit services requiring authentication!

You can access this dialog box by selecting the product(s) from the [Online Catalogue](#), adding it to cart, clicking on “**DATA DOWNLOAD**” button will redirect to [LOGIN](#) page (if not already signed in):

Credentials just for the 2nd ODYSSEA Summer School:

Username: sodysea

Password: Sodysea#2

CMEMS GUI web portal



ODYSSEA

The [Create an account](#) link redirects you to the [USER REGISTRATION FORM](#) where you can create your personal account:

USER REGISTRATION FORM

1 To be known

2 Registration

3 Application

4 About us

5 Signature

Service Level Agreement of the Copernicus Marine Environment Monitoring Service

In this SLA, the acronym "CMEMS" or the shortened name "Copernicus Marine Service" both mean the European operational service of Copernicus Marine Environment Monitoring Service.

Please read the [Service Commitments and Licence](#), which is an integral part of the Service Level Agreement (SLA) and which outlines the level and range of service supplied to the user.

As provided for in the Delegation Agreement signed on 11 November 2014 in accordance with the [Copernicus Regulation](#), **Mercator Ocean** is the entrusted entity to implement the Copernicus Marine Service including the dissemination of the products. The CMEMS licence is therefore granted to the users by Mercator Ocean.

Please fill in this form, sign it (by ticking) and return it to the CMEMS Service Desk if you wish to download the Copernicus Marine Service products.

NEXT

CMEMS GUI web portal





ABOUT US | USE CASES & MARKETS | NEWS | SCIENCE & MONITORING | TRAINING & EDUCATION | SERVICES PORTFOLIO | SHORT-CUT TO SERVICES

Home > Services portfolio > Access to products


OCEAN PRODUCTS →

You have 1/10 products Empty cart

MY CART  My Account

MEDSEA_ANALYSIS_FORECAST_PHY_006_013 VIEW DATA DOWNLOAD REMOVE CLOSE X Export results 

YOUR SEARCH

Search by keyword 


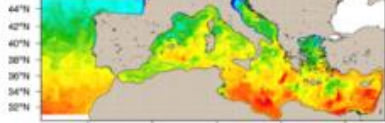
REGIONAL DOMAIN ▶
Mediterranean Sea



PARAMETERS ▶

TEMPORAL COVERAGE
From 1992-01-01 To 2019-09-09
 If checked, the search results will only show products containing the whole selected time range


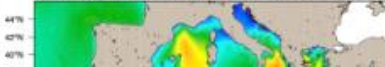
PRODUCT WITH DEPTH LEVEL

MEDSEA_ANALYSIS_FORECAST_PHY_006_013
MEDITERRANEAN SEA PHYSICS ANALYSIS AND FORECAST

MODEL	● ● ● X	MED
T bottomT S SSH 3DUV		Potential Temperature (°C) 31/12/2016 00:00 UTC
0.042 degree x 0.042 degree (141 depth levels)		
From 2017-01-01 to Present		10°W 0° 10°E 20°E 30°E
hourly-mean,daily-mean,monthly-mean		12 13 14 15 16 17 18 19 20 21 22

MORE INFO  ADD TO CART  WMS Sub-setting

MEDSEA_ANALYSIS_FORECAST_WAV_006_017
MEDITERRANEAN SEA WAVES ANALYSIS AND FORECAST

MODEL	✖ ✖ ✖ ✖	MED
SSH SWH MWP VMDR VSDXY WW SW1 SW2		Spectral Significant Wave Height (m) 15/01/2019 12:00 UTC
0.042 degree x 0.042 degree (Surface only)		

CMEMS GUI web portal



ODYSSEA

Since a **Product** is exposed as a **set of Datasets** and the latter usually contain a subset of the variables or different temporal resolutions (e.g. hourly means, daily means or monthly means), the GUI needs the **selection of the one of interest**.

ONLINE CATALOGUE

CATALOGUE PDF

FIRST VISIT ?

MY CART 1

My Account

DATA ACCESS

REPORT ISSUE

BACK TO SEARCH

MY CART

Global Ocean 1/12° Physics Analysis and Forecast updated Daily

GLOBAL_ANALYSIS_FO
RECAST_PHY_001_024

DATASET SELECTED

CHOOSE A DATASET

Choose a dataset

global-analysis-forecast-phy-001-024

global-analysis-forecast-phy-001-024-hourly-t-u-v-ssh

global-analysis-forecast-phy-001-024-monthly

global-analysis-forecast-phy-001-024-statics

Funded by the European Union

Copernicus

ABOUT US

PARTNERS & STAKEHOLDERS

BENEFITS

ANY QUESTIONS?
Ask the Service Desk

CMEMS GUI web portal



ODYSSEA

Since a Product is exposed as a set of Datasets and the latter usually contain a subset of the variables or different temporal resolutions (e.g. hourly means, daily means, monthly means, etc.), the user can select the one of interest.

SV04-MED-INGV-TEM-AN-FC-D

CHOOSE A DATASET

- SV04-MED-INGV-CUR-AN-FC-D
- SV04-MED-INGV-CUR-AN-FC-H
- SV04-MED-INGV-MLD-AN-FC-D
- SV04-MED-INGV-SAL-AN-FC-D
- SV04-MED-INGV-MLD-AN-FC-H
- SV04-MED-INGV-SAL-AN-FC-H
- SV04-MED-INGV-SSH-AN-FC-D
- SV04-MED-INGV-SSH-AN-FC-H
- SV04-MED-INGV-TEM-AN-FC-D
- SV04-MED-INGV-TEM-AN-FC-H
- SV04-MED-INGV-CUR-AN-FC-HTS
- SV04-MED-INGV-MLD-AN-FC-HTS
- SV04-MED-INGV-SAL-AN-FC-HTS
- SV04-MED-INGV-SSH-AN-FC-HTS
- SV04-MED-INGV-TEM-AN-FC-HTS
- SV04-MED-INGV-MLD-AN-FC-M
- SV04-MED-INGV-SSH-AN-FC-M
- SV04-MED-INGV-TEM-AN-FC-M
- SV04-MED-INGV-SAL-AN-FC-M

H – Hourly
D – Daily
M – Monthly
HTS – Hourly timeseries

CMEMS GUI web portal



ODYSSEA

Depending on **Product Type** (namely GRID), the GUI will display the **extraction settings** to enable the creation of a subset of the dataset over its dimensions:

Geographical area (bounding box of longitudes and latitudes; NB: to select **one point** just input the same minimum and maximum)

The screenshot displays the CMEMS GUI web portal interface. At the top, it shows 'MY CART' with a shopping cart icon and the page title 'Global Ocean 1/12° Physics Analysis and Forecast updated Daily'. Below this, there are two dataset entries in the cart: 'MEDSEA_ANALYSIS_FORECAST_PHY_006_013' and 'GLOBAL_ANALYSIS_FORECAST_PHY_001_024'. The main content area shows the 'DATASET SELECTED' dropdown menu set to 'GLOBAL-ANALYSIS-FORECAST-PHY-001-024-HOURLY-T-U-V-SSH'. Below this, the dataset name 'GLOBAL-ANALYSIS-FORECAST-PHY-001-024-HOURLY-T-U-V-SSH' is displayed, along with a 'DOWNLOAD' button and a 'DOWNLOAD OPTIONS' button (highlighted with an orange box). The 'DATASET FILTERS' section is expanded to show 'GEOGRAPHICAL AREA'. A world map is displayed with a bounding box defined by orange boxes containing the values: 90 (top), -180 (left), 179.9 (right), and -80 (bottom). A blue circle with the number '5' is overlaid on the map. A legend at the bottom left indicates that the green shaded area represents the 'Intersection between product coverage and area defined by user', and the blue outline represents the 'Product coverage'. A 'Reset geographical selection' button is located at the bottom right of the map area.

CMEMS GUI web portal



ODYSSEA

- Time range
- Depth (to select one layer, just select the same minimum and maximum)
- Ocean Variables

6

7

8

9

DOWNLOAD	NAME	DESCRIPTION	STANDARD NAME	UNITS
<input checked="" type="checkbox"/>	thetao	Temperature	sea_water_potential_temperature	degrees_C
<input checked="" type="checkbox"/>	zos	Sea surface height	sea_surface_height_above_geoid	m
<input checked="" type="checkbox"/>	uo	Eastward velocity	eastward_sea_water_velocity	m s-1
<input checked="" type="checkbox"/>	vo	Northward velocity	northward_sea_water_velocity	m s-1

Validate the extraction by clicking on “**DOWNLOAD**” (9).

CMEMS GUI web portal



ODYSSEA

A new window displays the size of the file (either in .nc or .nc.gz format) and let you choose the one of your interest:

The screenshot displays the 'DATA ACCESS' section of the CMEMS GUI. On the left, a 'MY CART' sidebar lists two datasets: 'MEDSEA_ANALYSIS_FORECAST_PHY_006_013' and 'GLOBAL_ANALYSIS_FORECAST_PHY_001_024'. The main content area is titled 'DOWNLOAD OPTIONS' and shows details for the dataset 'GLOBAL-ANALYSIS-FORECAST-PHY-001-024-HOURLY-T-U-V-SSH'. It includes a 'SUBSETTER' section with criteria like Geographical area, Depth, Time range, and Variables. Two download options are presented: 'DOWNLOAD NETCDF FILE SUBSETTED BY ALL CRITERIA' (67.269 MB) and 'FTP ACCESS'. Both options are marked with a '10' icon, indicating a specific feature or status.



ODYSSEA

How to download CMEMS parameters and data via scripts

Machine to machine interface

Motu Server



ODYSSEA

Motu is a **high efficient and robust Web Server** which fills the gap between heterogeneous Data Providers to End Users.

Motu handles, extracts and transforms oceanographic huge volumes of data without performance collapse.

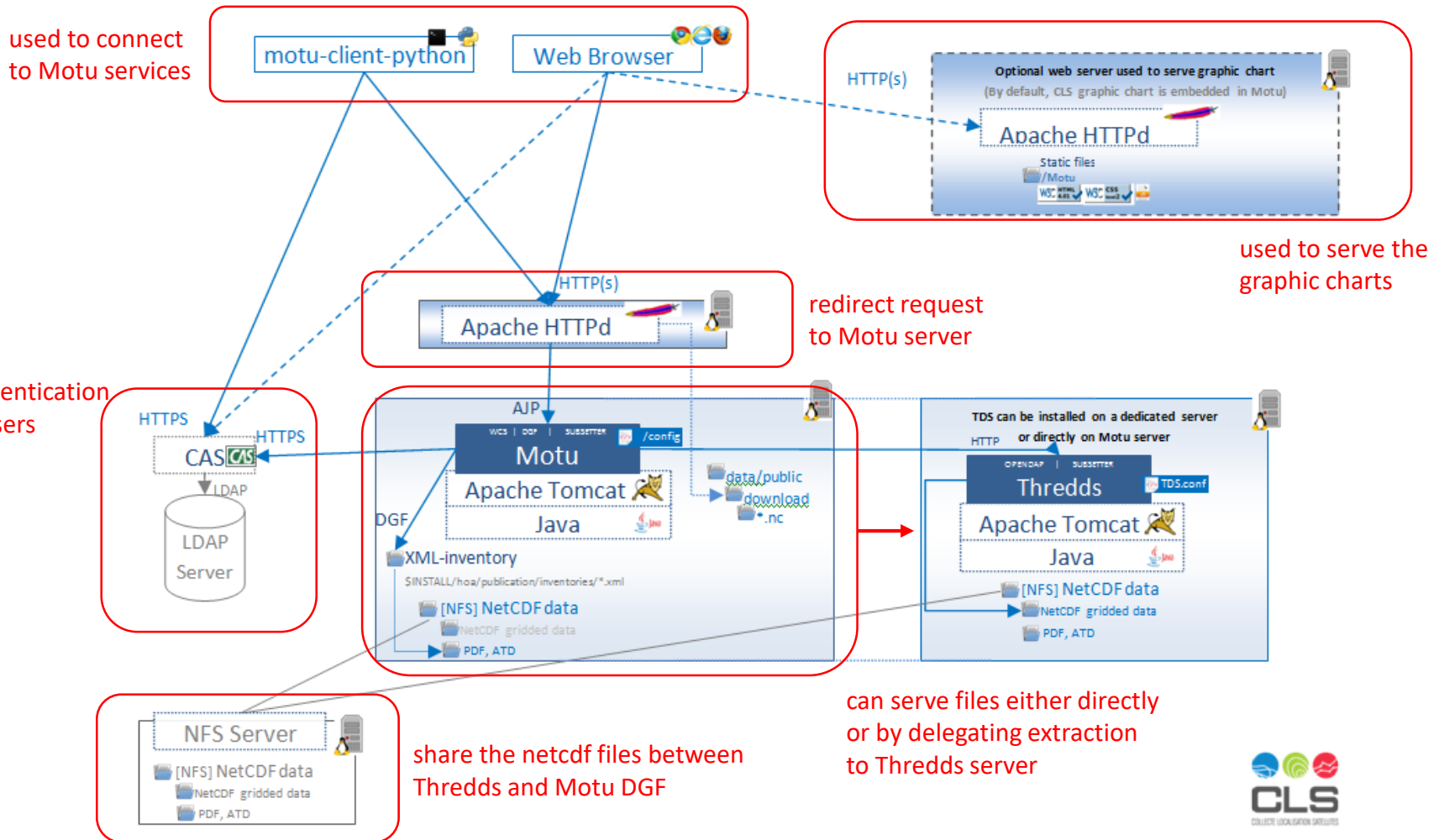
To download Copernicus Marine Products hosted on MOTU server, using scripts, there are two options:

1. via MOTU CLIENT (for End-Users)
2. via MOTU REST API (for Developers)

Machine to machine interface Architecture



ODYSSEA



Machine to machine interface

MOTU CLIENT



ODYSSEA

Motu offers a multiplatform and easy to use **client for Command Line Interface (CLI)**. Very useful in machine to machine context, it enables to download data by running a python script, used to connect to Motu HTTP server in order to:

- **get information** about a dataset,
- **get the size** of an extraction with geospatial, temporal and variable criteria,
- **extract a subset data** of a dataset, along its dimensions: temporal, geospatial (longitude, latitude, depth) and variable criteria, and
- it can be launched under **different environments** in order to be integrated into a processing chain.

The processing chain **can be written in any computer language** (it can be in bash, batch, Java, JS, R, perl, fortran etc... and thus **not necessarily in Python**), since the data extraction will only call the motu-client.py file to get the interaction with the MOTU server.

Machine to machine interface

MOTU REST API



ODYSSEA

It lets you use Motu server services with any package for **retrieving files using HTTP, HTTPS** (like cURL or Wget, but also Python requests module, R httr package or any other language implementing http requests).

All URLs have always the same pattern:

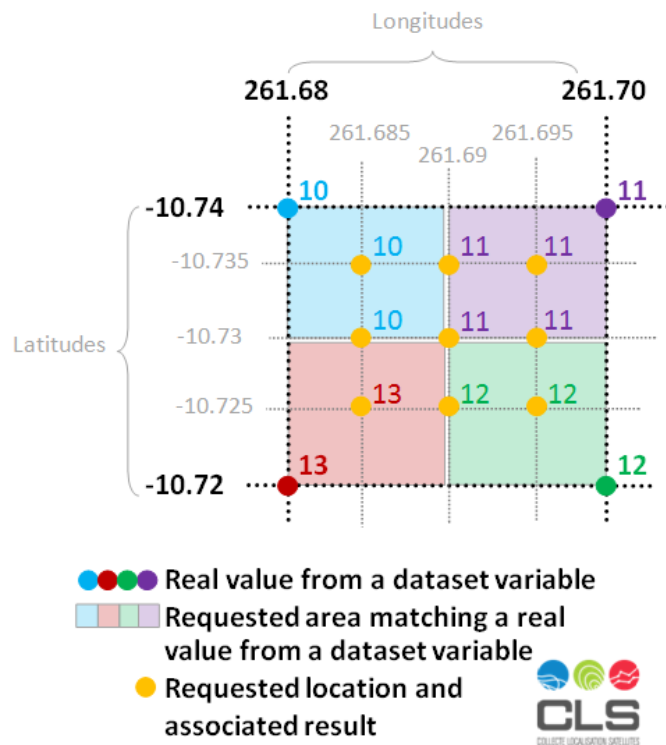
`http://motuServer/{context}/Motu?action=${actionName}`

Download data – MOTU CLIENT

Specification of point retrieval



ODYSSEA



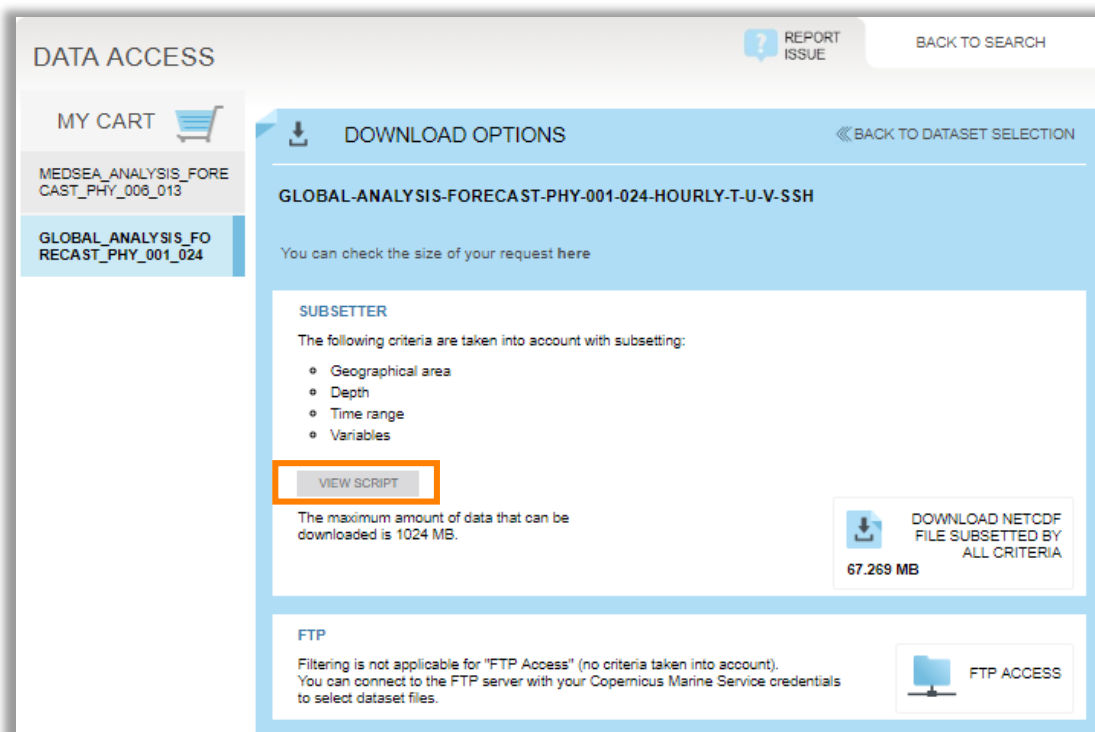
Schema displays a subset of a dataset variable as an array of 2 longitudes and 2 latitudes.

At each intersection, we have got 1 real value (10, 11, 12, 13) as defined in the gridded data.


As we can see, 4 areas are displayed and the nearest value from the requested location is returned.

Download data – MOTU CLIENT

Download script



DATA ACCESS [REPORT ISSUE](#) [BACK TO SEARCH](#)

MY CART 

MEDSEA_ANALYSIS_FORECAST_PHY_006_013

GLOBAL_ANALYSIS_FORECAST_PHY_001_024

DOWNLOAD OPTIONS [« BACK TO DATASET SELECTION](#)

GLOBAL-ANALYSIS-FORECAST-PHY-001-024-HOURLY-T-U-V-SSH

You can check the size of your request here


SUBSETTER

The following criteria are taken into account with subsetting:

- Geographical area
- Depth
- Time range
- Variables


[VIEW SCRIPT](#)

The maximum amount of data that can be downloaded is 1024 MB.

 **DOWNLOAD NETCDF FILE SUBSETTED BY ALL CRITERIA**
67.269 MB

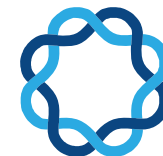
FTP

Filtering is not applicable for "FTP Access" (no criteria taken into account). You can connect to the FTP server with your Copernicus Marine Service credentials to select dataset files.

 **FTP ACCESS**

Download data – MOTU CLIENT

Download script



ODYSSEA

DATA ACCESS

REPORT
ISSUE

BACK TO SEARCH

MY CART



DOWNLOAD OPTIONS

« BACK TO DATASET SELECTION

MEDSEA_ANALYSIS_FORE

```
python -m motuclient --motu http://my.cmems-du.eu/motu-web/Motu --service-id  
MEDSEA_REANALYSIS_PHYS_006_004-TDS --product-id sv03-med-ingv-sal-rean-d --  
longitude-min -6 --longitude-max 36.25 --latitude-min 30.1875 --latitude-max  
45.9375 --date-min "2017-12-31 00:00:00" --date-max "2017-12-31 00:00:00" --  
depth-min 1.472 --depth-max 1.4722 --variable vosaline --out-dir  
<OUTPUT_DIRECTORY> --out-name <OUTPUT_FILENAME> --user <USERNAME> --pwd  
<PASSWORD>
```

FTP

Filtering is not applicable for "FTP Access" (no criteria taken into account).
You can connect to the FTP server with your Copernicus Marine Service credentials
to select dataset files.



FTP ACCESS

Download data – MOTU CLIENT

Download script



ODYSSEA

```
python <PATH TO MOTUCLIENT DIR>/motu-client.py --user <USERNAME> --pwd  
<PASSWORD> --motu http://nrt.cmems-du.eu/motu-web/Motu --service-id MEDSEA ANALYSIS  
FORECAST PHY 006 013-TDS --product-id sv04-med-ingv-tem-an-fc-h --longitude-min 23 --  
longitude-max 23.5 --latitude-min 40 --latitude-max 40.5 --date-min "2018-06-01 00:30:00" --  
date-max "2018-06-01 23:30:00" --depth-min 1.0181 --depth-max 5754.045 --variable thetao --  
out-dir <OUTPUT DIR> --out-name <OUTPUT FILENAME>
```

```
python <PATH TO MOTUCLIENT DIR>/motu-client.py  
--user <USERNAME>  
--pwd <PASSWORD>  
--motu http://nrt.cmems-du.eu/motu-web/Motu  
--service-id MEDSEA ANALYSIS FORECAST PHY 006 013-TDS  
--product-id sv04-med-ingv-tem-an-fc-h  
--longitude-min 23 --longitude-max 23.5 --latitude-min 40 --latitude-max 40.5  
--date-min "2019-08-01 00:30:00" --date-max "2019-08-01 23:30:00"  
--depth-min 1.0181 --depth-max 5754.045  
--variable thetao  
--out-dir <OUTPUT DIR> --out-name <OUTPUT FILENAME>
```

Download data – MOTU CLIENT

Download 1 point – surface – timeseries



```
import os

user = your username
pwd = your password
motu service id = 'http://nrt.cmems-du.eu/motu-web/Motu'
motu client = 'motu-client-python/motu-client.py'
service id = 'MEDSEA ANALYSIS FORECAST PHY 006 013-TDS'
product id = 'sv04-med-ingv-tem-an-fc-h'
variable = 'thetao'
out dir = os.path.join(os.getcwd(), 'Netcdf')
out name = 'thetao.nc'

-----

min lon = '23'
max lon = '23'
min lat = '40'
max lat = '40'
min depth = '1.0181'
max depth = '1.0184'
min date = '2019-08-01 00:00:00'
max date = '2019-08-10 00:00:00'

-----

cmd = 'python {motu client} --user {user} --pwd {pwd} --motu {motu service id} --service-id {service id}
--product-id {product id} --longitude-min {min lon} --longitude-max {max lon} --latitude-min {min lat} --
latitude-max {max lat} --date-min "{min date}" --date-max "{max date}" --depth-min {min depth} --depth-
max {max depth} -variable {variable} --out-dir "{out dir}" --out-name {out name}'.format(motu client,
user, pwd, motu service id, service id, product id, min lon, max lon, min lat, max lat, min date, max
date, min depth, max depth, variable, out dir, out name)
os.system(cmd)
```

Download data – MOTU CLIENT

Download 1 area – surface – timeseries



```
import os

user = your username
pwd = your password
motu service id = 'http://nrt.cmems-du.eu/motu-web/Motu'
motu client = 'motu-client-python/motu-client.py'
service id = 'MEDSEA ANALYSIS FORECAST PHY 006 013-TDS'
product id = 'sv04-med-ingv-tem-an-fc-h'
variable = 'thetao'
out dir = os.path.join(os.getcwd(), 'Netcdf')
out name = 'thetao.nc'
```

#You have to be registered on CMEMS platform
#You have to be registered on CMEMS platform
#may change due to different service id
#path of motu client python script
#may be the same for different parameters
#notice the last terms (tem, an, fc, h)
#may be more than one parameters
#directory to store the netcdf file
#name of netcdf file that is stored

```
min lon = '23.0'
max lon = '23.5'
min lat = '40.0'
max lat = '40.5'
min depth = '1.0181'
max depth = '1.0184'
min date = '2019-08-01 00:00:00'
max date = '2019-08-10 00:00:00'
```

define the coordinates of your area

#minimum longitude
#maximum longitude
#minimum latitude
#maximum latitude
#minimum depth
#minimum depth
#minimum date
#maximum date

```
cmd = 'python {motu client} --user {user} --pwd {pwd} --motu {motu service id} --service-id {service id} --product-id {product id} --longitude-min {min lon} --longitude-max {max lon} --latitude-min {min lat} --latitude-max {max lat} --date-min "{min date}" --date-max "{max date}" --depth-min {min depth} --depth-max {max depth} --variable {variable} --out-dir "{out dir}" --out-name {out name}'.format(motu client, user, pwd, motu service id, service id, product id, min lon, max lon, min lat, max lat, min date, max date, min depth, max depth, variable, out dir, out name)
os.system(cmd)
```

Download data – MOTU CLIENT

Download 1 point – profile – timeseries



```
import os

user = your username
pwd = your password
motu service id = 'http://nrt.cmems-du.eu/motu-web/Motu'
motu client = 'motu-client-python/motu-client.py'
service id = 'MEDSEA ANALYSIS FORECAST PHY 006 013-TDS'
product id = 'sv04-med-ingv-tem-an-fc-h'
variable = 'thetao'
out dir = os.path.join(os.getcwd(), 'Netcdf')
out name = 'thetao.nc'

-----

min lon = '23'
max lon = '23'
min lat = '40'
max lat = '40'
min depth = '1.0181'
max depth = '5754.045'
min date = '2019-08-01 00:00:00'
max date = '2019-08-10 00:00:00'

-----

cmd = 'python {motu client} --user {user} --pwd {pwd} --motu {motu service id} --service-id {service id}
--product-id {product id} --longitude-min {min lon} --longitude-max {max lon} --latitude-min {min lat} --
latitude-max {max lat} --date-min "{min date}" --date-max "{max date}" --depth-min {min depth} --depth-
max {max depth} --variable {variable} --out-dir "{out dir}" --out-name {out name}'.format(motu client,
user, pwd, motu service id, service id, product id, min lon, max lon, min lat, max lat, min date, max
date, min depth, max depth, variable, out dir, out name)
os.system(cmd)
```

```
#You have to be registered on CMEMS platform
#You have to be registered on CMEMS platform
#may change due to different service id
#path of motu client python script
#may be the same for different parameters
#notice the last terms (tem, an, fc, h)
#may be more than one parameters
#directory to store the netcdf file
#name of netcdf file that is stored
```

```
#minimum longitude
#maximum longitude
#minimum latitude
#maximum latitude
#minimum depth
#minimum depth
#minimum date
#maximum date
```

define the minimum and maximum depth
that you want to retrieve

Download data – MOTU CLIENT

Download 1 area – surface – 1 time



```
import os

user = your username
pwd = your password
motu service id = 'http://nrt.cmems-du.eu/motu-web/Motu'
motu client = 'motu-client-python/motu-client.py'
service id = 'MEDSEA ANALYSIS FORECAST PHY 006 013-TDS'
product id = 'sv04-med-ingv-tem-an-fc-h'
variable = 'thetao'
out dir = os.path.join(os.getcwd(), 'Netcdf')
out name = 'thetao.nc'

-----

min lon = '23.0'
max lon = '23.5'
min lat = '40.0'
max lat = '40.5'
min depth = '1.0181'
max depth = '1.0184'
min date = '2019-08-01 00:00:00'
max date = '2019-08-01 00:00:00'

-----

cmd = 'python {motu client} --user {user} --pwd {pwd} --motu {motu service id} --service-id {service id}
--product-id {product id} --longitude-min {min lon} --longitude-max {max lon} --latitude-min {min lat} --
latitude-max {max lat} --date-min "{min date}" --date-max "{max date}" --depth-min {min depth} --depth-
max {max depth} --variable {variable} --out-dir "{out dir}" --out-name {out name}'.format(motu client,
user, pwd, motu service id, service id, product id, min lon, max lon, min lat, max lat, min date, max
date, min depth, max depth, variable, out dir, out name)
os.system(cmd)
```

```
#You have to be registered on CMEMS platform
#You have to be registered on CMEMS platform
#may change due to different service id
#path of motu client python script
#may be the same for different parameters
#notice the last terms (tem, an, fc, h)
#may be more than one parameters
#directory to store the netcdf file
#name of netcdf file that is stored
```

```
#minimum longitude
#maximum longitude
#minimum latitude
#maximum latitude
#minimum depth
#minimum depth
#minimum date
#maximum date
```

define the new
time coordinates

What is a netCDF file



ODYSSEA

Variables

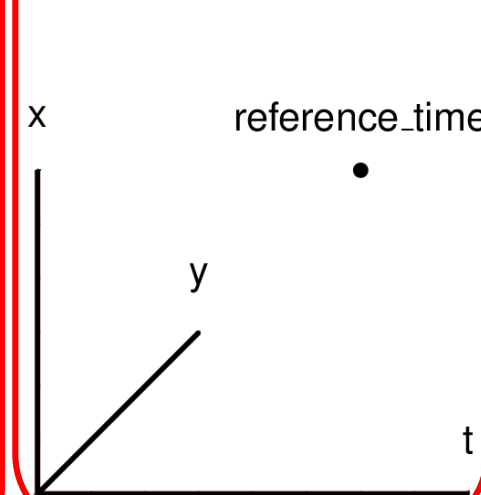
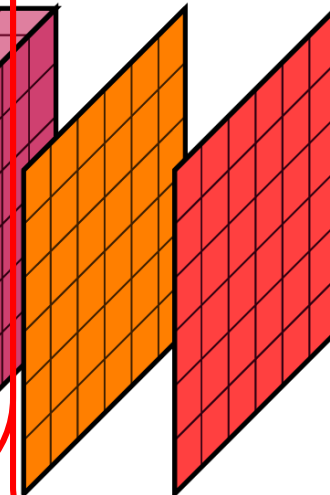
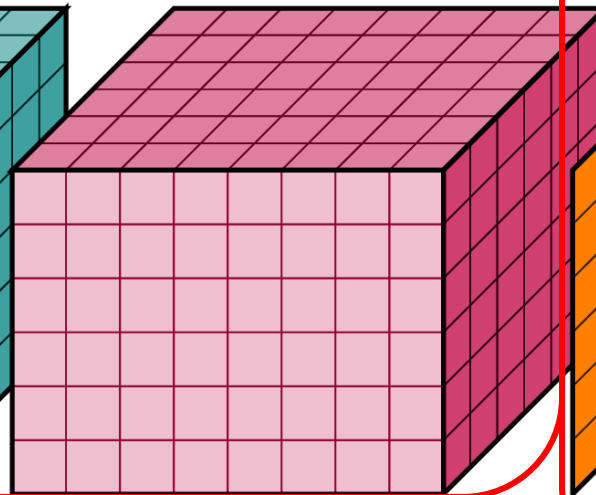
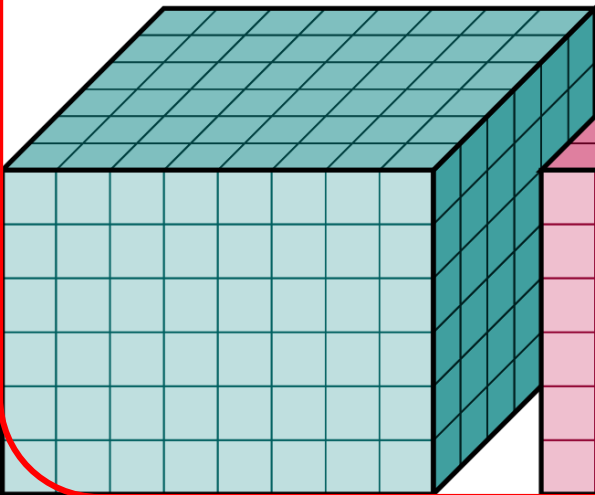
Spatial
Information

Time

temperature

salinity

latitude longitude



Exercise



ODYSSEA

- Download salinity data for a region close to Alonissos island all layers for the dates: 5 days after today and 10 years ago the same date

Which CMEMS products are you using?

Alonissos Island coordinates:

Latitude = 39.1499994

Longitude = 23.833333



ODYSSEA

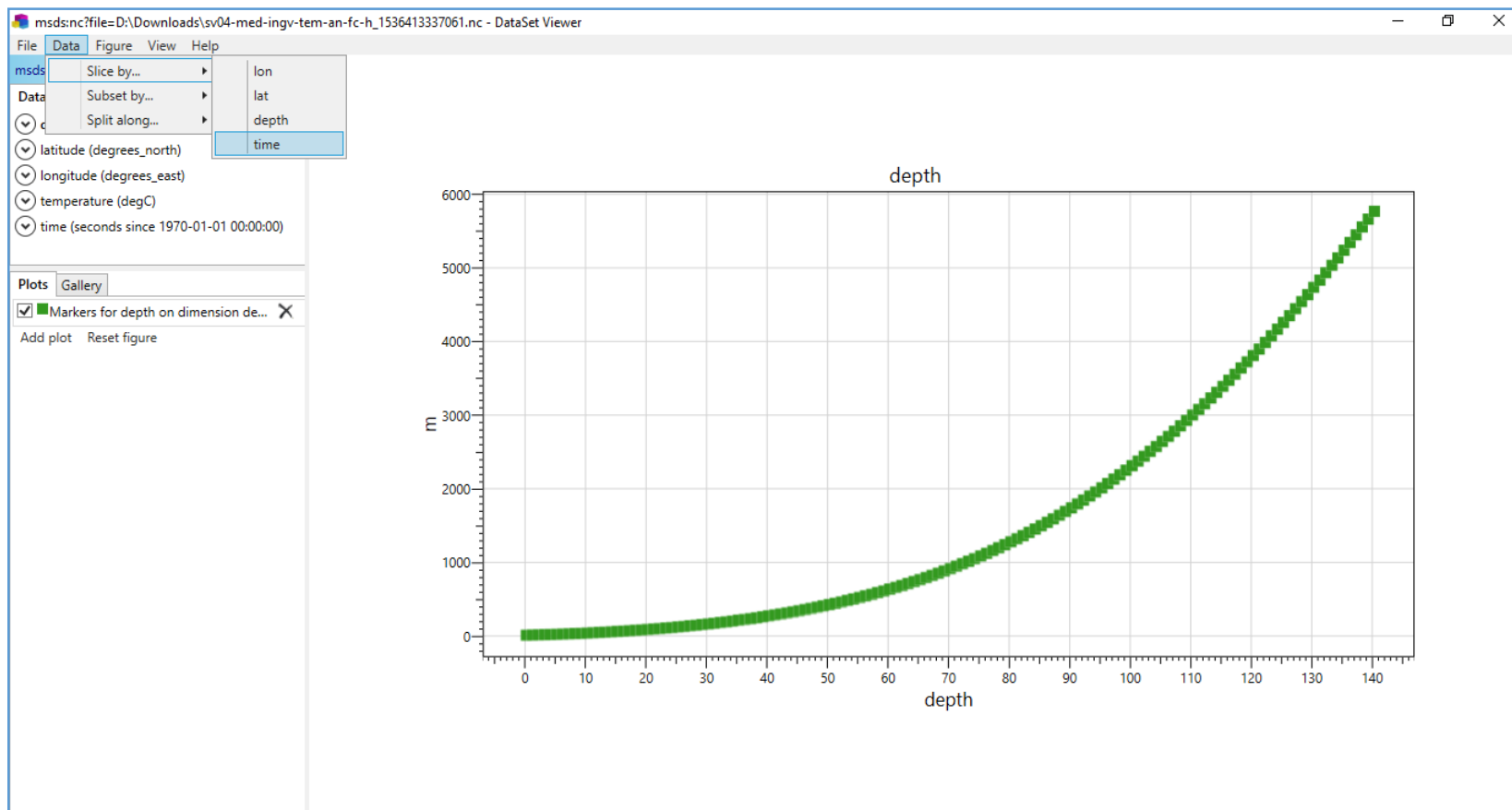
How to view retrieved CMEMS parameters and data locally (on PC)

View data – Scientific Viewer

Plot surface data



ODYSSEA

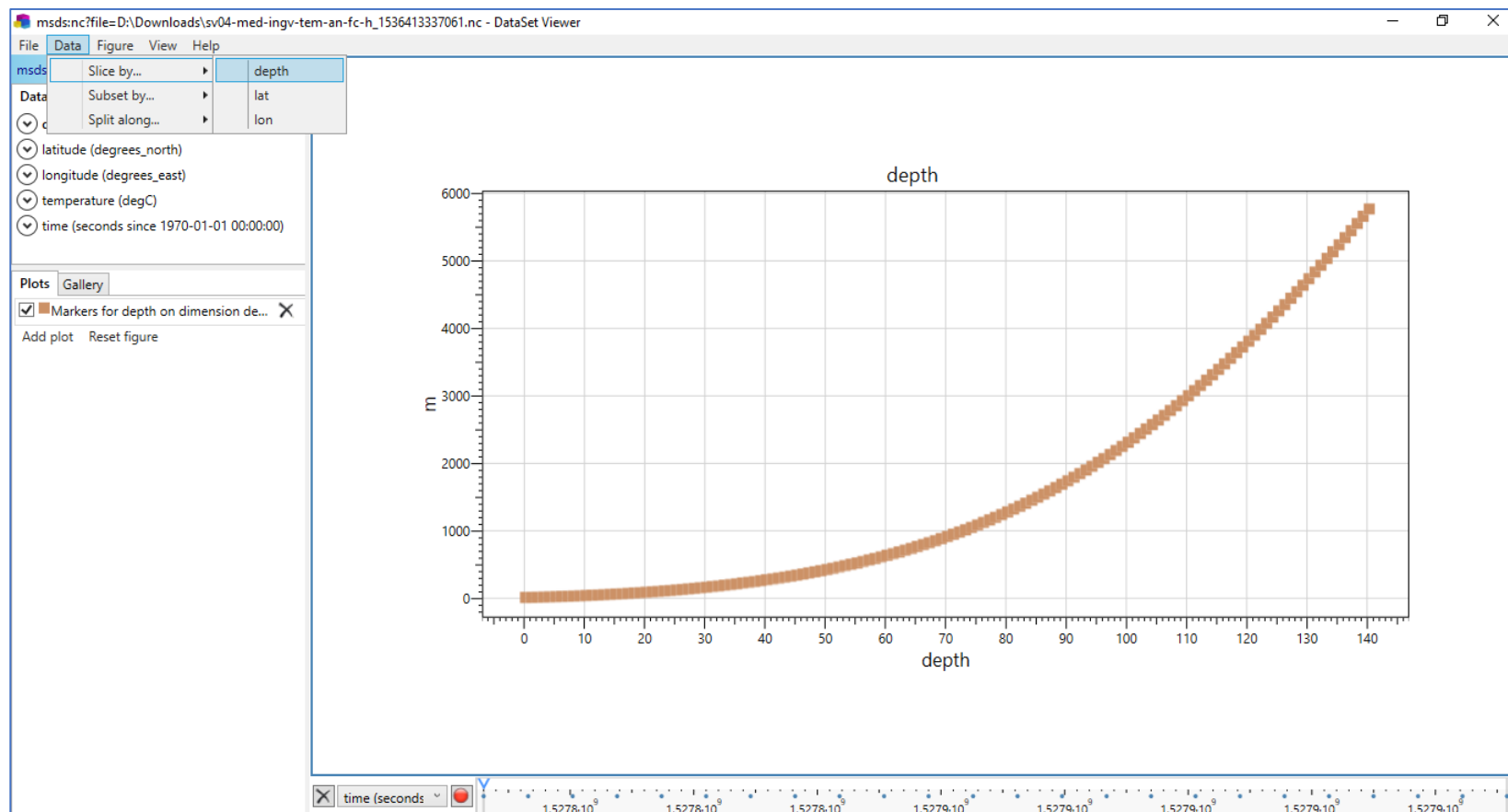


View data – Scientific Viewer

Plot surface data



ODYSSEA

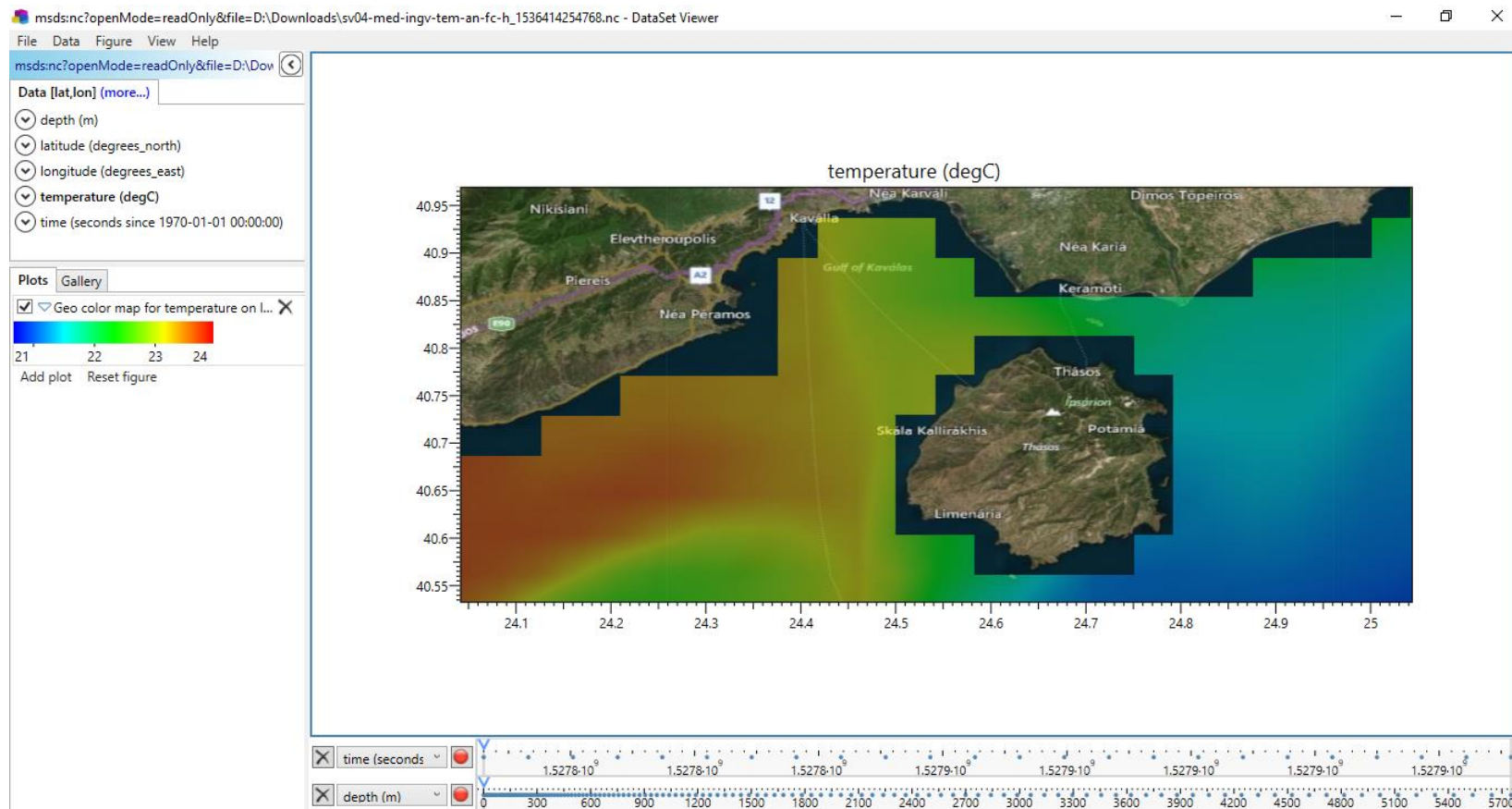


View data – Scientific Viewer

Plot surface data



ODYSSEA

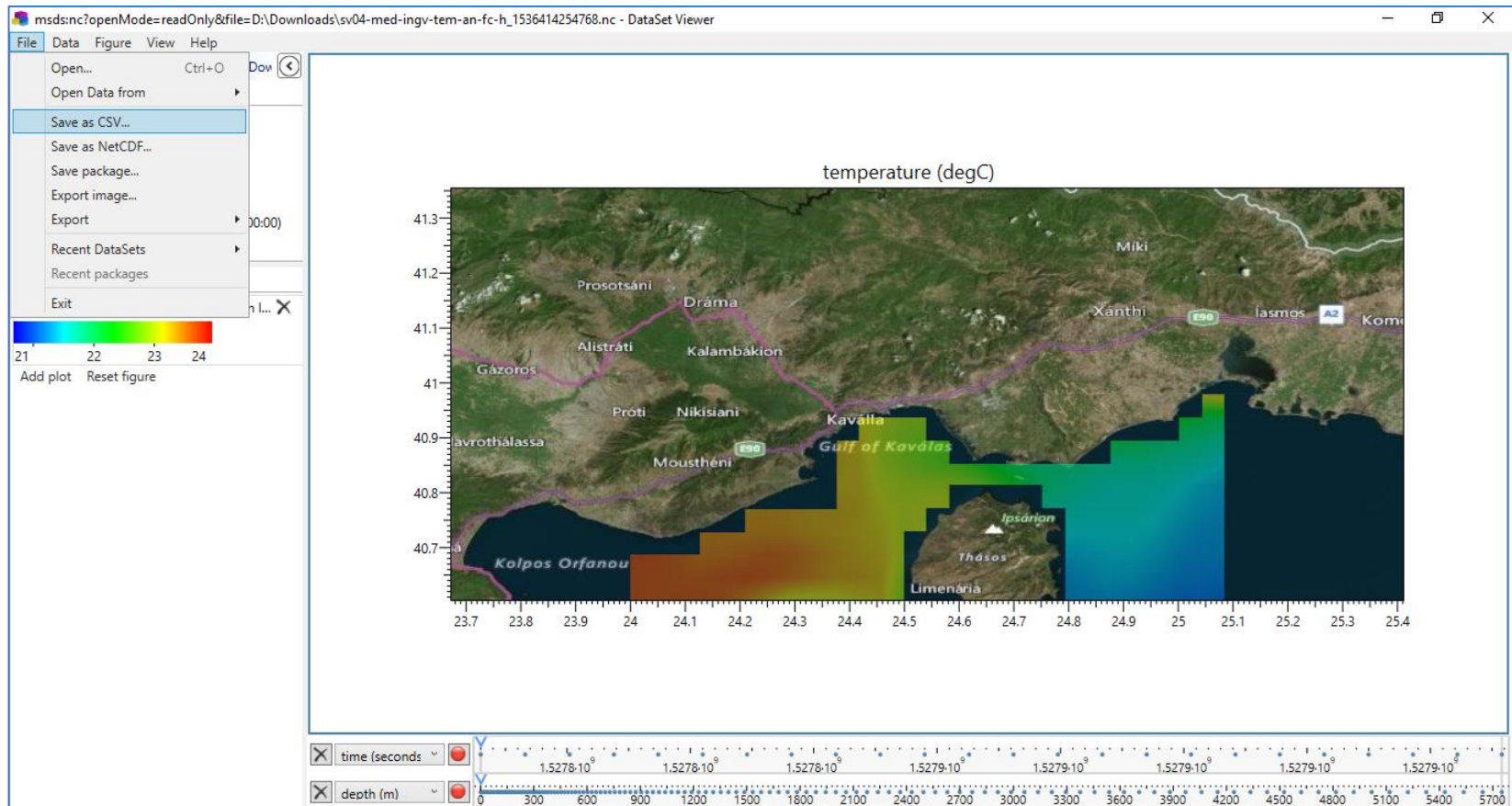


View data – Scientific Viewer

Export surface data to csv file



ODYSSEA

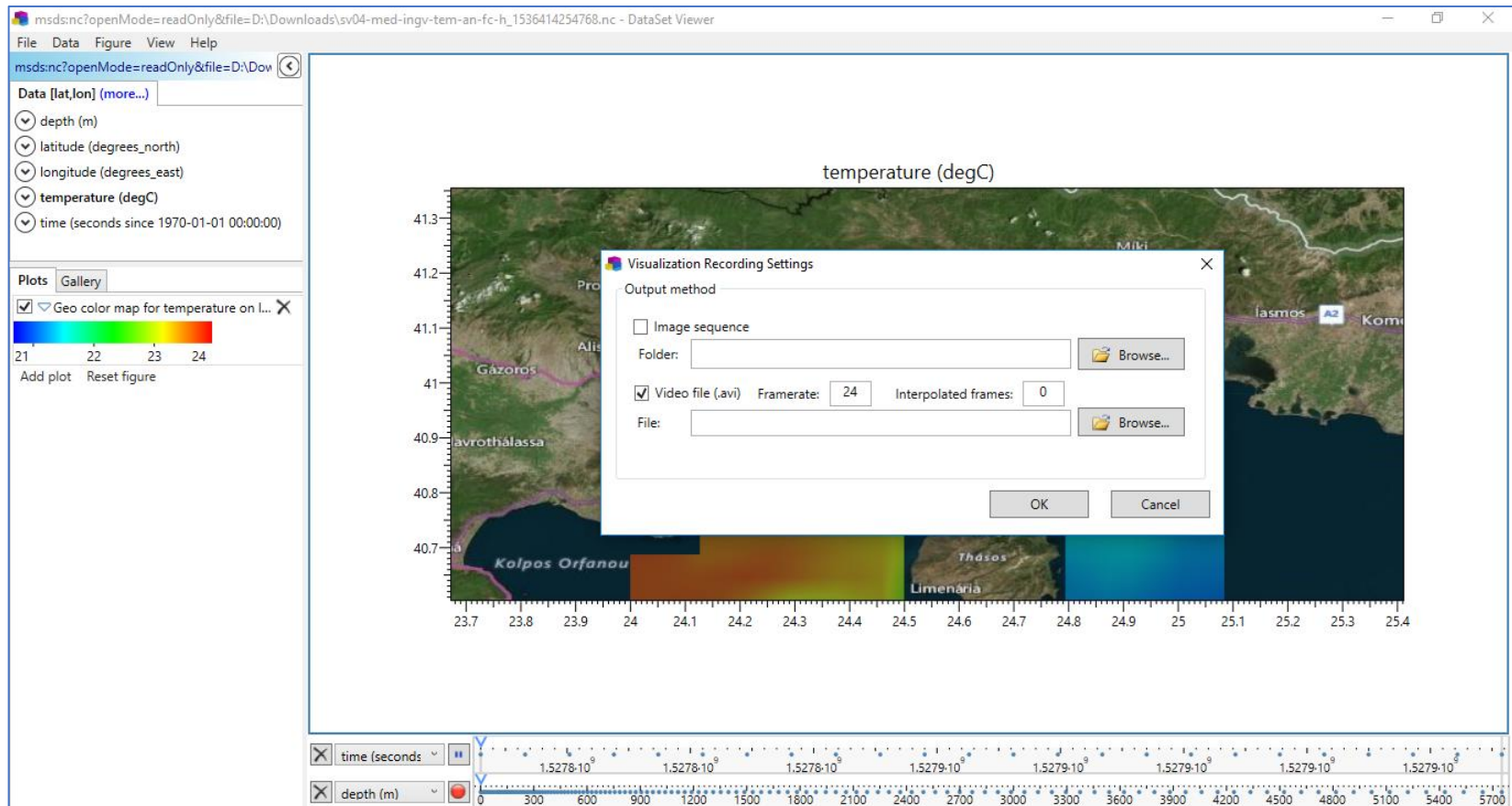


View data – Scientific Viewer

Export plot in video file



ODYSSEA

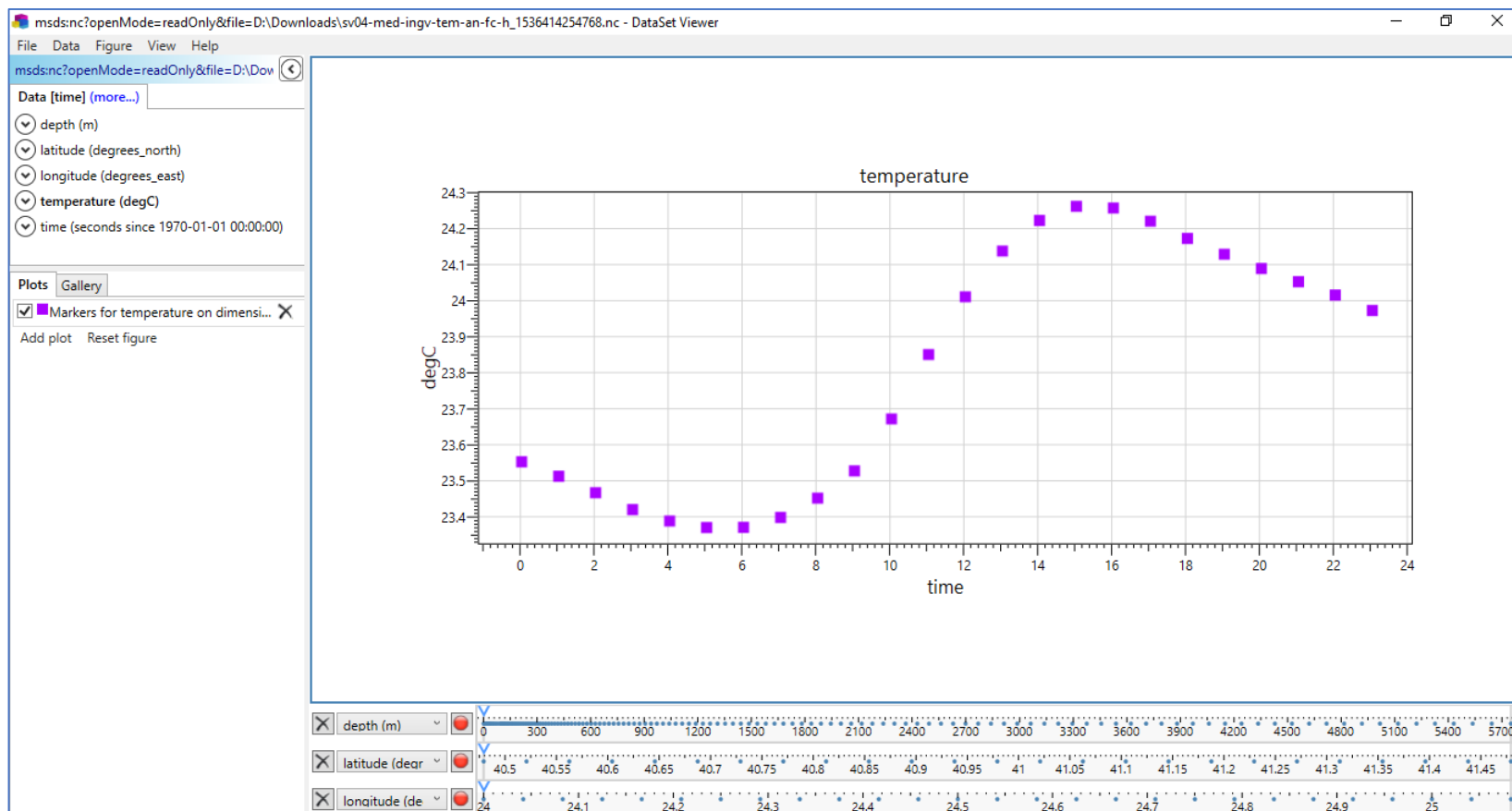


View data – Scientific Viewer

Plot timeseries



ODYSSEA

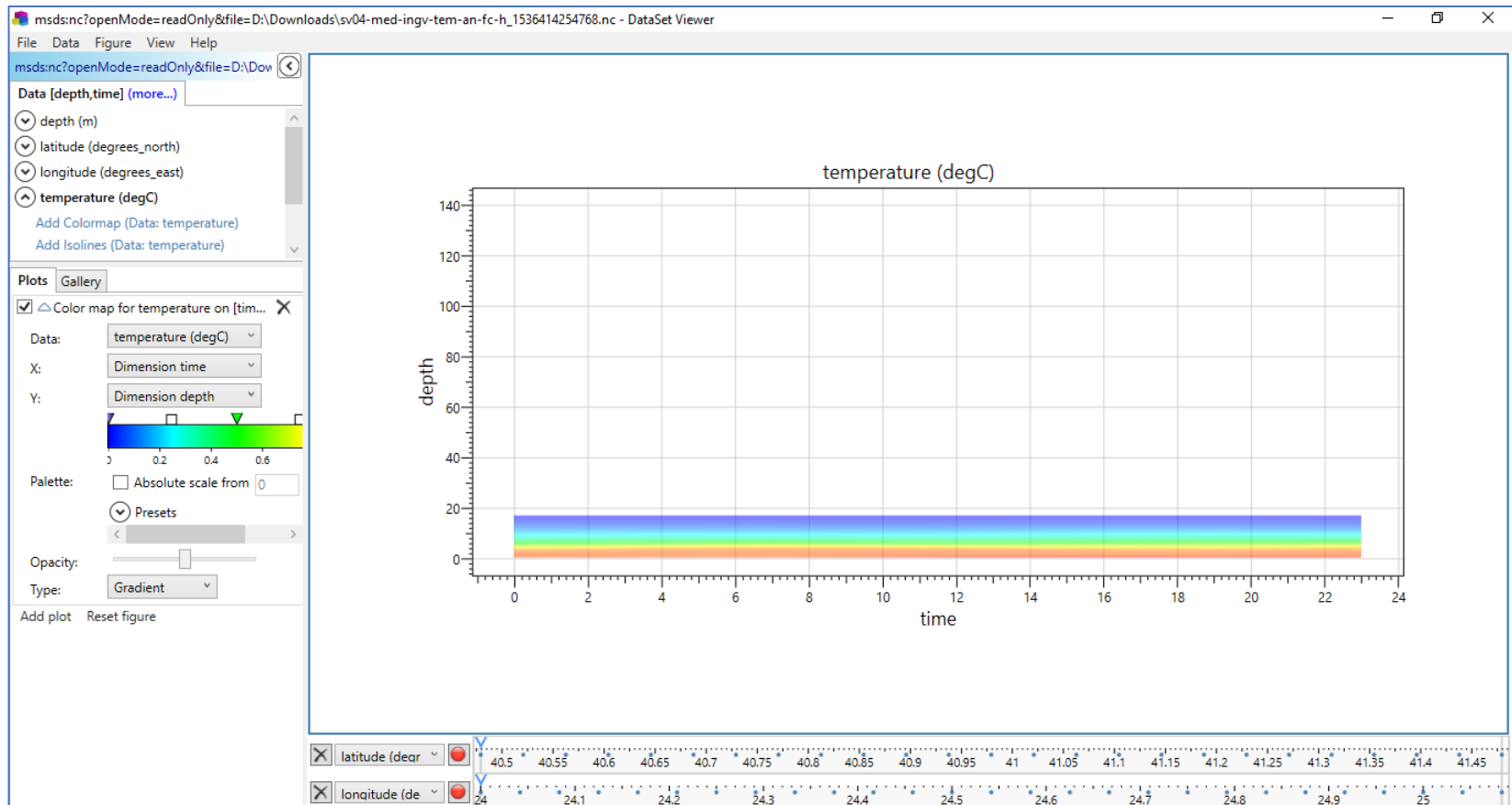


View data – Scientific Viewer

Plot profile data



ODYSSEA



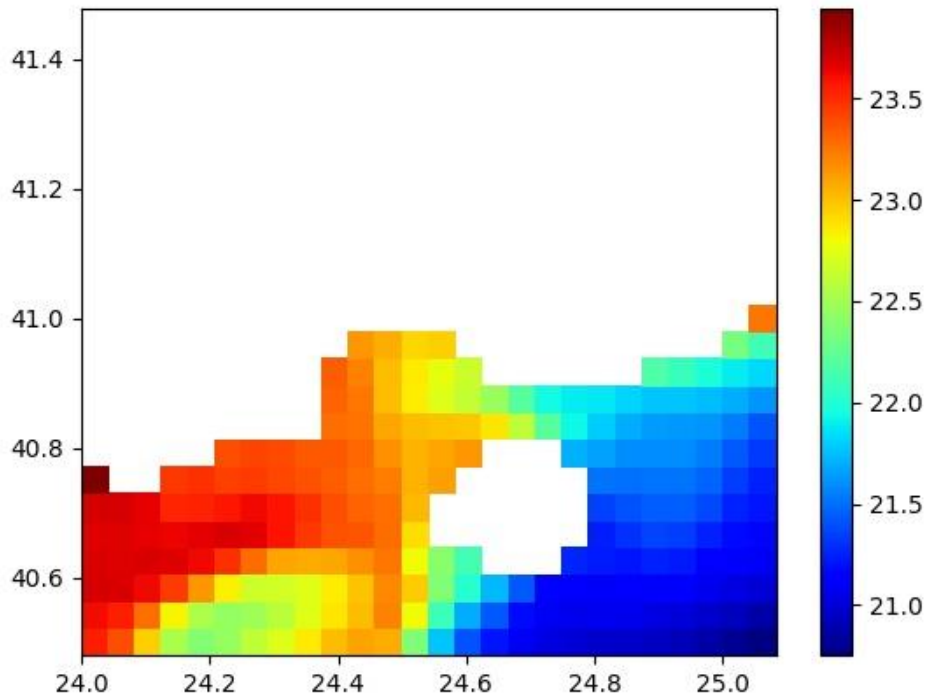
View data – python

Plot surface data – Water Temperature

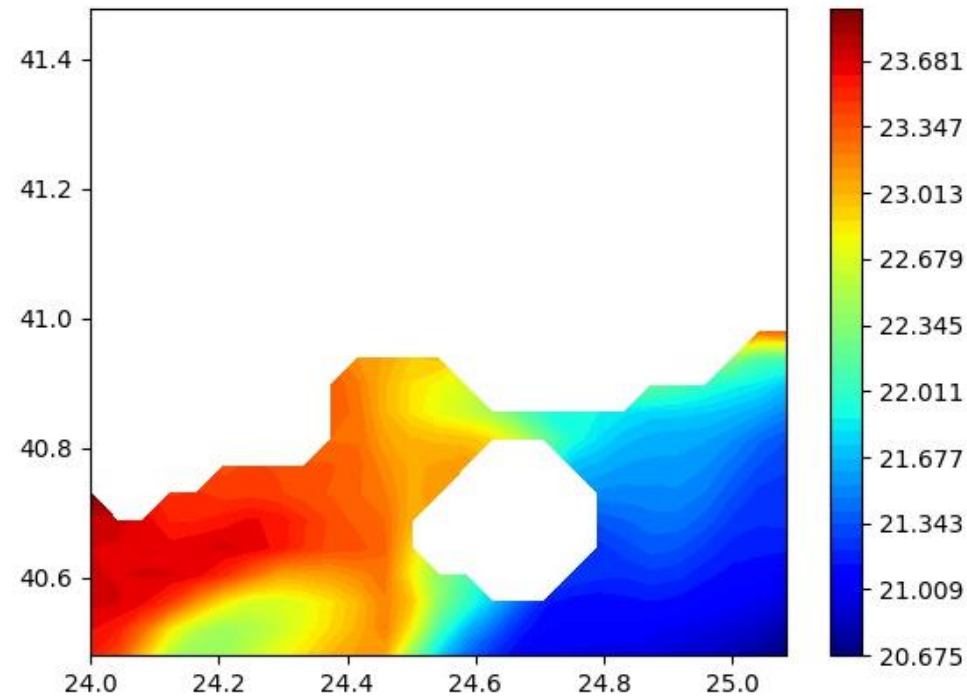


ODYSSEA

pcolormesh



contourf



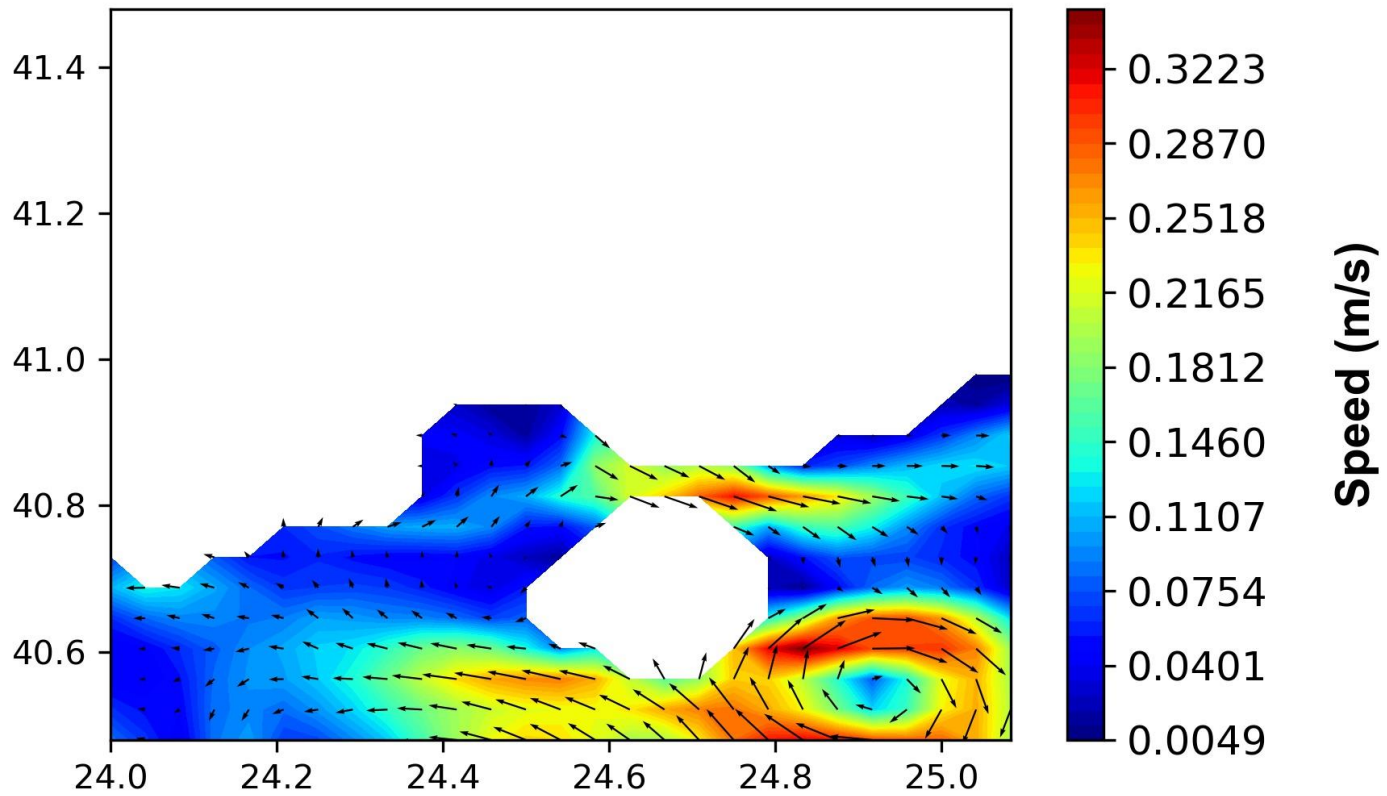
View data – python

Plot surface data – Currents



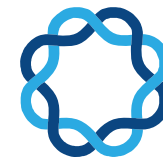
ODYSSEA

Sea currents on 2018-09-12 11:30:00



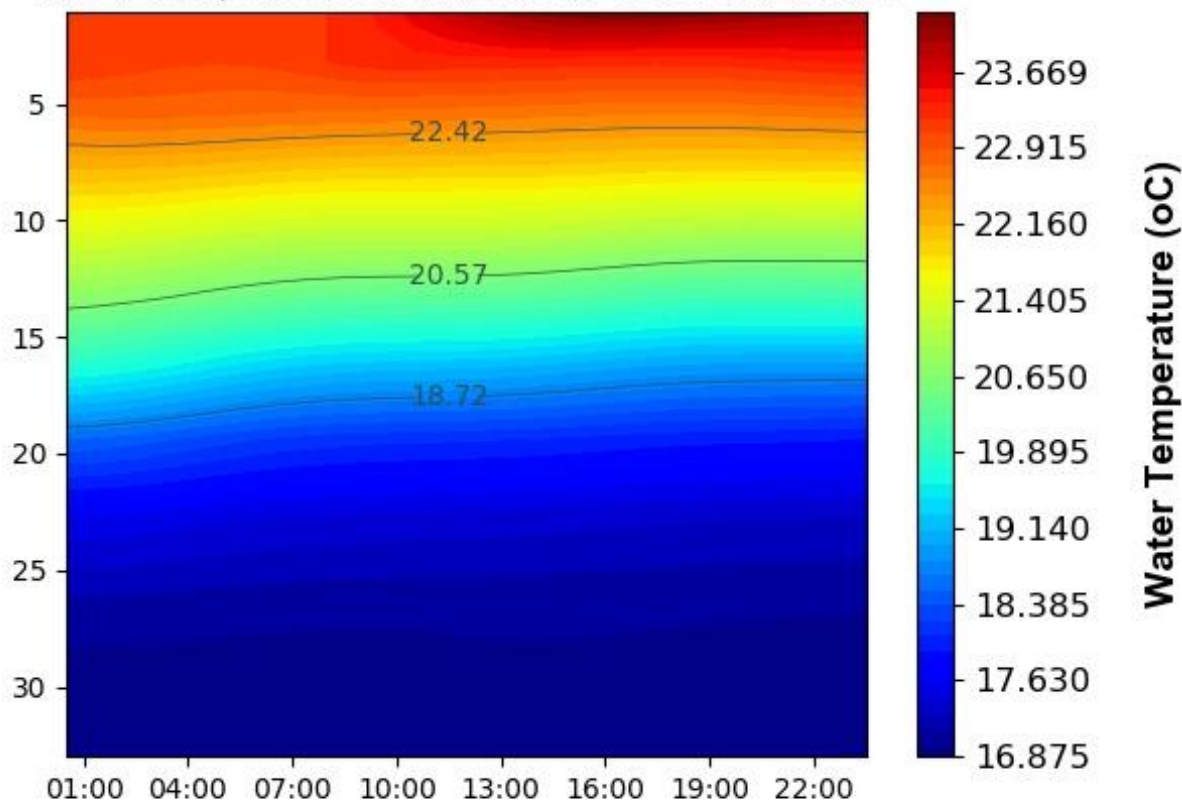
View data – python

Plot Profile data – Water Temperature



ODYSSEA

Water Temperature Profile on lat=40.90-lon=24.42

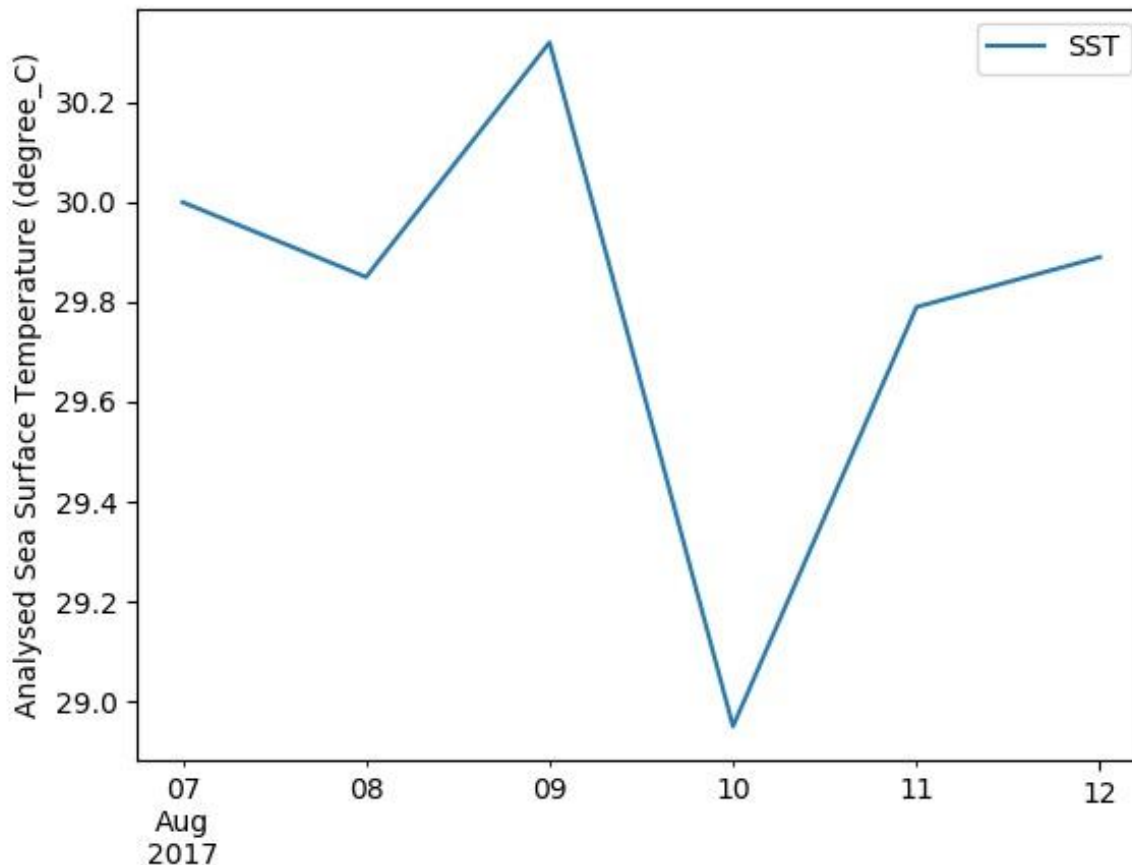


View data – python

Plot timeseries – Water Temperature



ODYSSEA





ODYSSEA

What is EMODnet



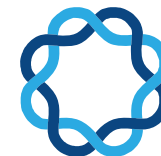
- The **European Marine Observation and Data Network** (EMODnet) consists of more than 150 organisations assembling marine data, products and metadata to make these fragmented resources more available to public and private users relying on quality-assured, standardised and harmonised marine data which are interoperable and free of restrictions on use.
- EMODnet has created a gateway to a range of data archives managed by local, national, regional and international organisations. **Through these gateways, users have access to standardized observations**, data quality indicators and processed data products, such as basin-scale maps. These data products are free to access and use.
- EMODnet **comes** where Copernicus **fails**



ODYSSEA

EMODnet Data Portals

EMODnet



ODYSSEA



CENTRAL PORTAL

Your gateway to marine data in Europe



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The European Marine Observation and Data Network (EMODnet)

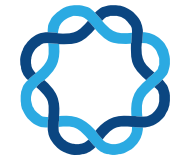
The European Marine Observation and Data Network (EMODnet) consists of more than 150 organisations assembling marine data, products and metadata to make these fragmented resources more available to public and private users relying on quality-assured, standardised and harmonised marine data which are interoperable and free of restrictions on use. EMODnet is currently in its third development phase with the target to be fully deployed by 2020.



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Accept

EMODnet Data Portals



ODYSSEA

EMODnet provides access to European marine data across **7 discipline-based theme-portals**:

BATHYMETRY
Data on bathymetry (water depth), coastlines, and geographical location of underwater features; wrecks.

GEOLOGY
Data on seabed substrate, sea-floor geology, coastal behaviour, geological events, and minerals.

SEABED HABITATS
Data on modelled seabed habitats based on seabed substrate, energy, biological zone, and salinity.

PHYSICS
Data on salinity, temperature, waves, currents, sea-level, light attenuation, and FerryBoxes.

BIOLOGY
Data on temporal and spatial distribution of species abundance and biomass from several taxa.

CHEMISTRY
Data on marine litter and the concentration of nutrients, organic matter, pesticides, heavy metals, radionuclides and antifoulants in water, sediment and biota.

COASTAL MAPPING
Data on coastal areas, across the five disciplines: bathymetry and seabed mapping.

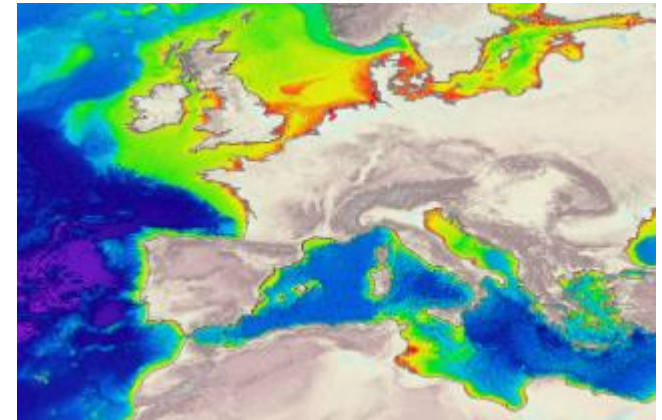
HUMAN ACTIVITIES
Data on the intensity and spatial extent of human activities at sea.

EMODnet Bathymetry Portal

The **EMODnet Bathymetry portal** provides a range of services and functionalities to users for **viewing and downloading bathymetry data** products and for identifying and requesting access to the survey data sets that are used as basis input for the Digital Terrain Models.

Available Data

1. Minimum, maximum, average and standard deviation of cell water depth
2. Number of values used for interpolation of cell water depth



EMODnet Bathymetry Portal



BATHYMETRY

Understanding the topography of the European seas
Bathymetry Viewing and Download service

Mean depth full coverage



Legend

Retrieve depth



Depth profile



Downloads



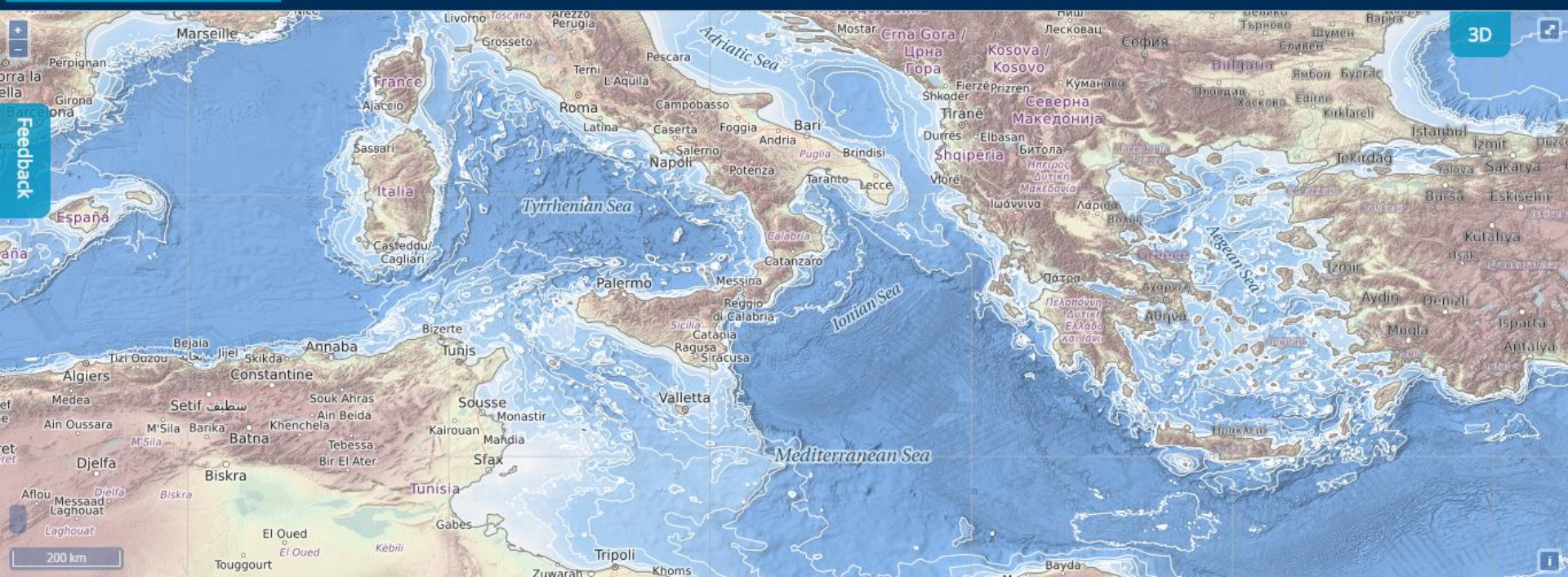
Measure distance



Settings



Help



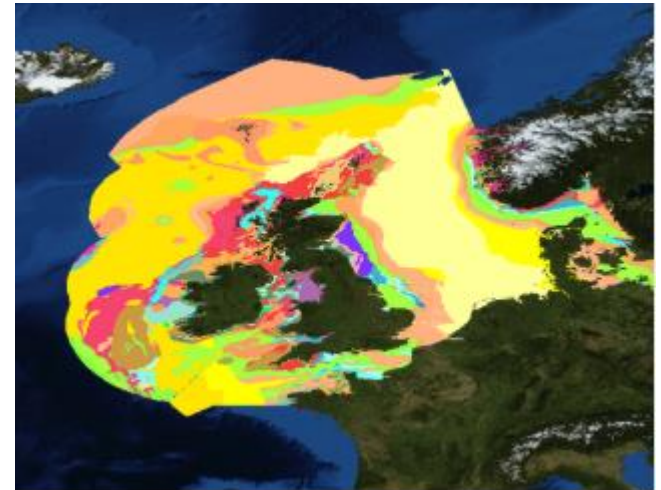
EMODnet Geology Portal

The **EMODnet Geology portal** provide free access to:

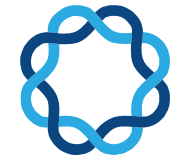
- i. **geological data** and metadata held by various organisations in Europe based on international standards and
- ii. geological data products compiled at a scale of 1:250,000.

Available Data

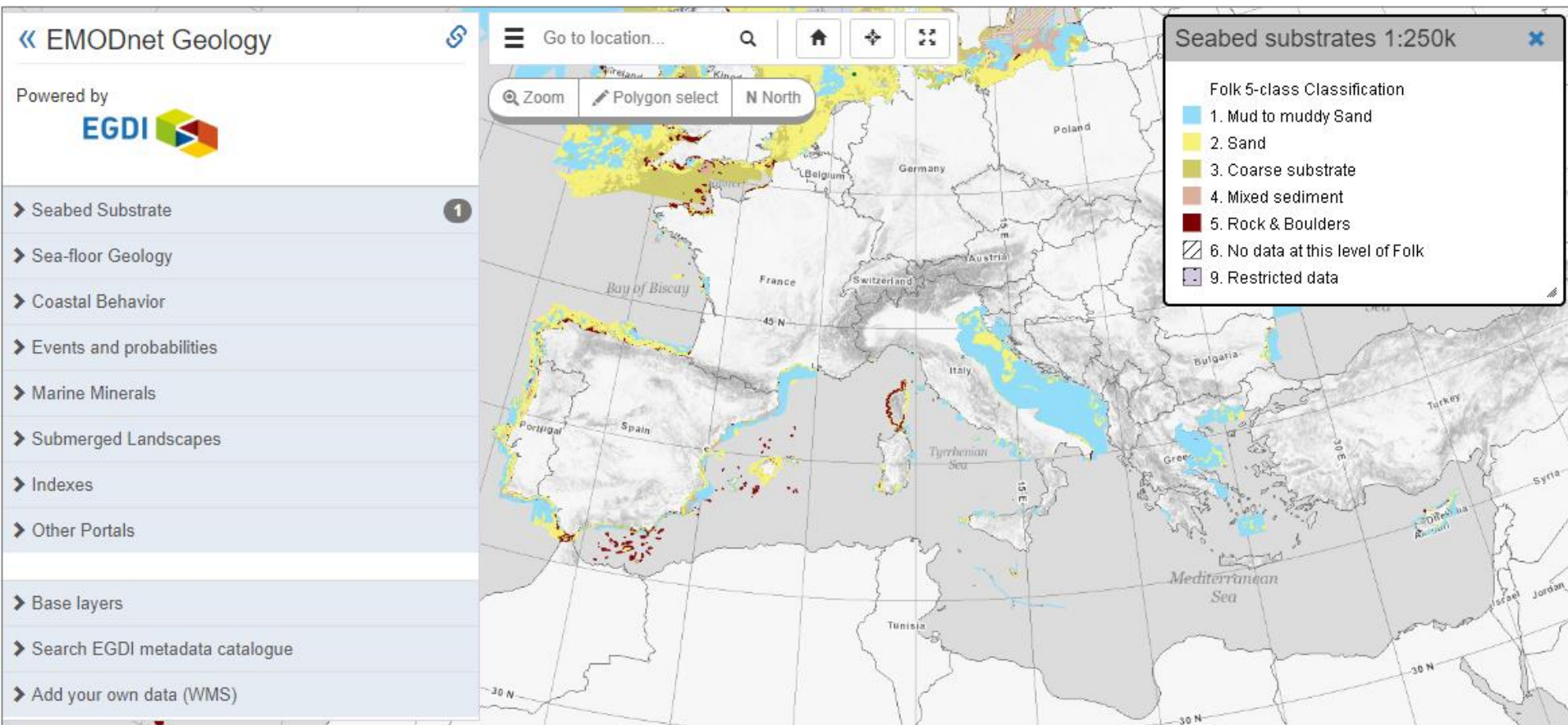
1. Seabed substrate
2. Sediment accumulation rate
3. Sea-floor geology
4. Seabed lithology
5. Stratigraphy
6. Coastline migration
7. Aggregate resources
8. Geological events
9. Submerged landscapes



EMODnet Geology Portal



ODYSSEA



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Seabed Habitats Portal

The **EMODnet Seabed Habitats portal** provides a single access point to **European seabed habitat data** and products by assembling individual point datasets, maps and models from various sources. Data are published as interoperable data products for assessing the environmental state of ecosystems and sea basins.

Furthermore, it continues to update the EMODnet broad-scale seabed habitat map for Europe, known as EUSeaMap.



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Seabed Habitats Portal



Available Data

1. Habitats – various classification systems
2. Broad-scale physical habitat map for Europe
3. Broad-scale habitat map regional case studies
4. Detailed habitat maps from surveys
5. Individual habitat modelling outputs
6. Habitat point data
7. Depth
8. Seabed substrate
9. Broad scale Biological Zone
10. Oceanographic variables
11. Light at seabed
12. Energy at seabed due to waves & current
13. Wave Exposure Index (Baltic)
14. Halocline probability (Baltic)
15. Salinity regime (Baltic)
16. Oxygen regime (Black Sea)
17. Confidence assessments

EMODnet Seabed Habitats Portal



SEABED HABITATS

[Seabed Habitats home](#)

[MAP VIEWER HELP](#)

[SEARCH METADATA](#)

[METADATA CATALOGUE](#)

[DOWNLOAD DATA](#)

[TERMS OF USE](#)

ALL LAYERS



- ▶ EMODnet broad-scale seabed habitat map for Europe (EUSeaMap) 0
- ▶ Environmental variables that influence habitat type 0
- ▶ Individual habitat maps from surveys 0
- ▶ Modelled maps of specific habitats 1
- ▶ Survey sample points 0
- ▶ Composite data products 0
- ▶ Boundaries 0
- ▶ External Layers 0

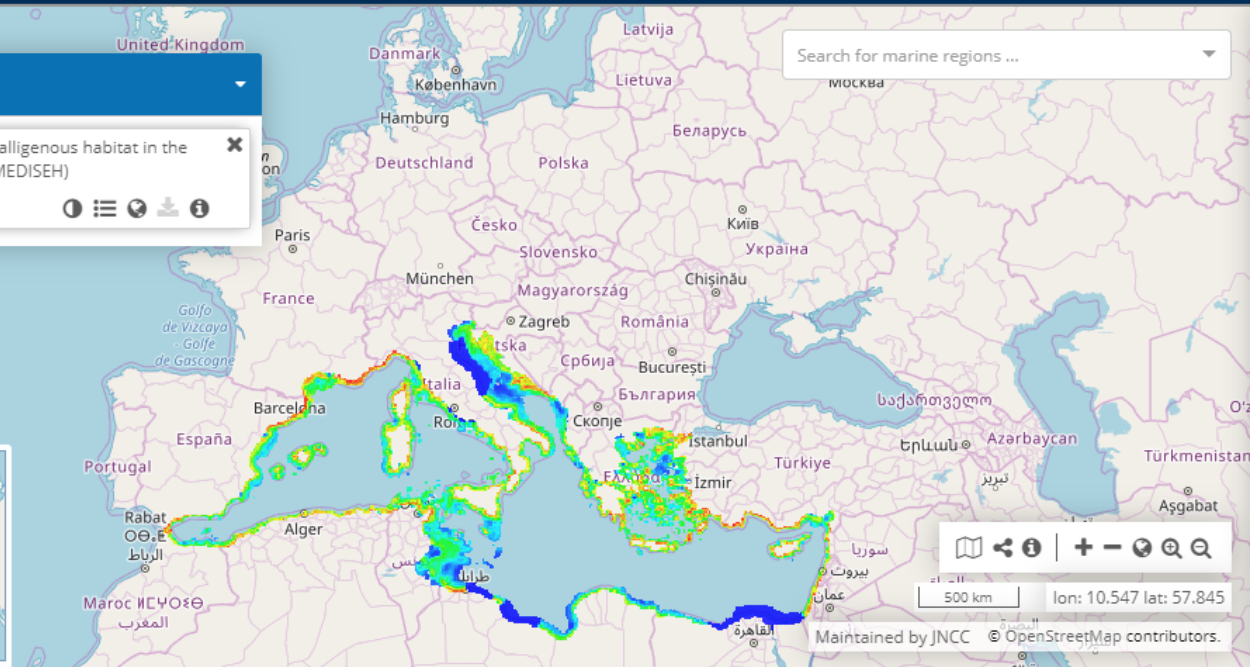
Add external layers +



ACTIVE LAYERS

Probability of coralligenous habitat in the Mediterranean (MEDISEH)

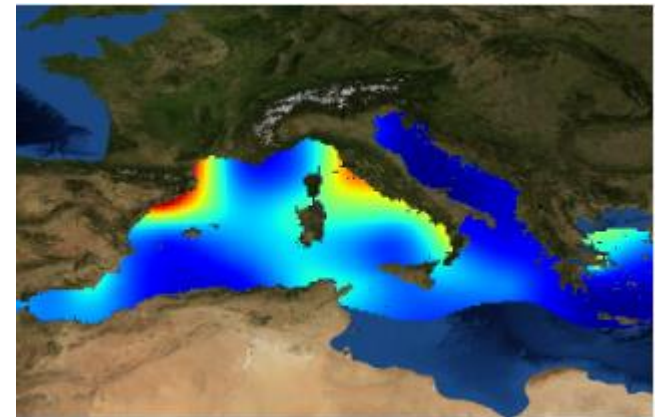
Information icons: help, list, refresh, download, info



EMODnet Chemistry Portal



The **EMODnet Chemistry portal** provides easy access to **marine chemical data**, standardised harmonized validated data collections and reliable data products, highly relevant to assess ecosystem status according to the Marine Strategy Framework Directive, based upon inputs gathered and collated from national monitoring efforts and activities from research institutes in all European coastal states.



Available Data

Pesticides & Biocides

1. DDT
2. PCB

Antifoulants

3. TBT
4. TPT

Pharmaceuticals

5. Oxytetracycline
6. Heavy Metals
7. Mercury
8. Cadmium
9. Lead

Hydrocarbons

10. Anthracene

11. Fluoranthene

Radionuclides

12. Cs¹³⁷
13. Pu²³⁹

Fertilizers

14. Nitrogen (Din, TN)
15. Phosphorus (DIP, TP)

Acidity

16. pH
17. pCO₂
18. alkalinity

Dissolved Gasses

19. O₂
20. CO₂

Plastics

21. Polyethylene
22. Polypropylene

Marine Litter

23. Beach litter (nets, bottles etc.)
24. Seafloor litter (i.e. litter collected by fish trawl surveys)
25. Micro litter (microplastics)

Chlorophyll

Silicates

Organic Matter


EMODnet Chemistry Portal








CHEMISTRY

























Data & products on marine water quality


CDI Data Discovery and Access Service - Extended search



 Datasets 0 [Proceed to check out](#) [Reset basket](#)

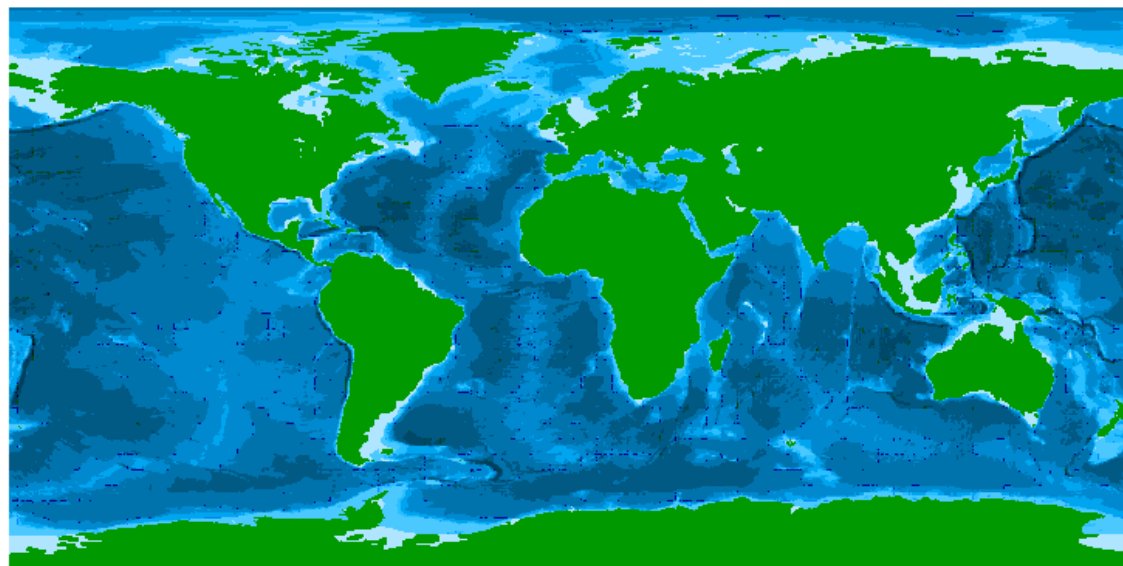
Layer control  



- CDI entry Points 
- CDI entry Tracks 
- CDI entry Areas 

- Grid Lines   
- Regional sea   
- Regional sea labels   
- Main sea   
- Main sea labels   
- Bathymetry   
- Blue Marble   
- World   

Lat/long 

Upper-left  Lower-right 



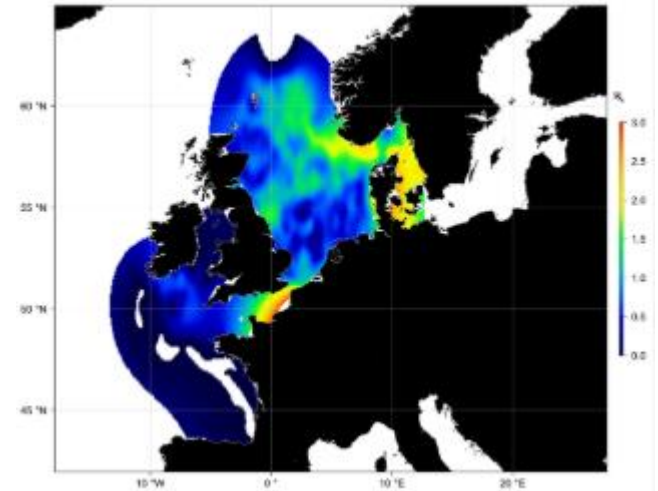
- Enlarge map 
- Help 
- Position 
- Index 
- 
- 
- 
- 

EMODnet Biology Portal



The **EMODnet Biology portal** provides free access to data on **temporal and spatial distribution of marine species and species traits** from all European regional seas.

It is built upon the World Register of Marine Species and the European Ocean Biogeographic Information System.



Available Data

1. Biomass
2. Abundance

Species groups

- phytoplankton
- zooplankton
- angiosperms
- macro-algae
- invertebrate bottom fauna
- birds
- mammals
- reptiles
- fish

EMODnet Biology Portal



BIOLOGY

Dive into data on Europe's marine life.

Search ...
CONTACT US
SUBMIT DATA

[About](#)

[Data & data product access](#)

[Atlas of Marine Life](#)

[News & events](#)

[Terms and Conditions](#)

[Get involved!](#)

[Helpdesk](#)

Search

Active layers

All Layers

Search for species names or datasets:

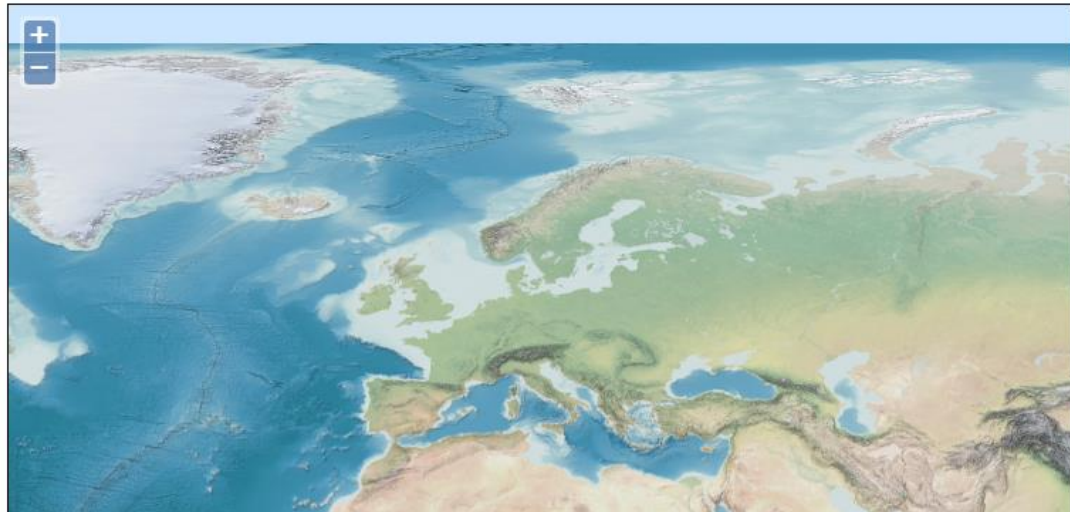
Or

Select from available species lists:

A manual is available [here](#).

For questions or feedback, please use [this form](#).

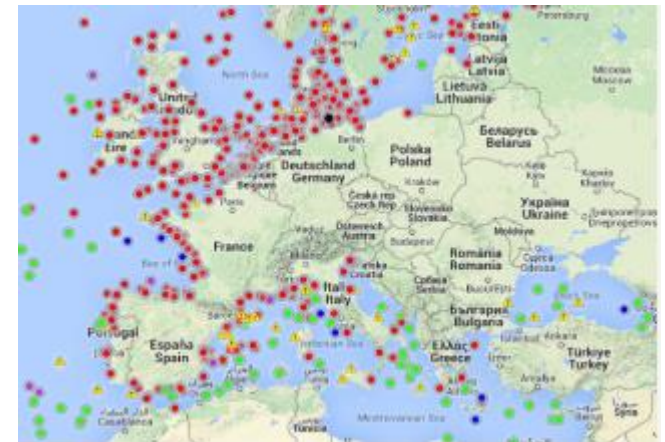
Lat: 27.98 Lon:16.46



EMODnet Physics Portal



The **EMODnet Physics portal** provides access to **archived and near real-time data on physical conditions** in Europe's seas and oceans. These data are provided by measurement stations and ferryboxes.



EMODnet

Physics Portal

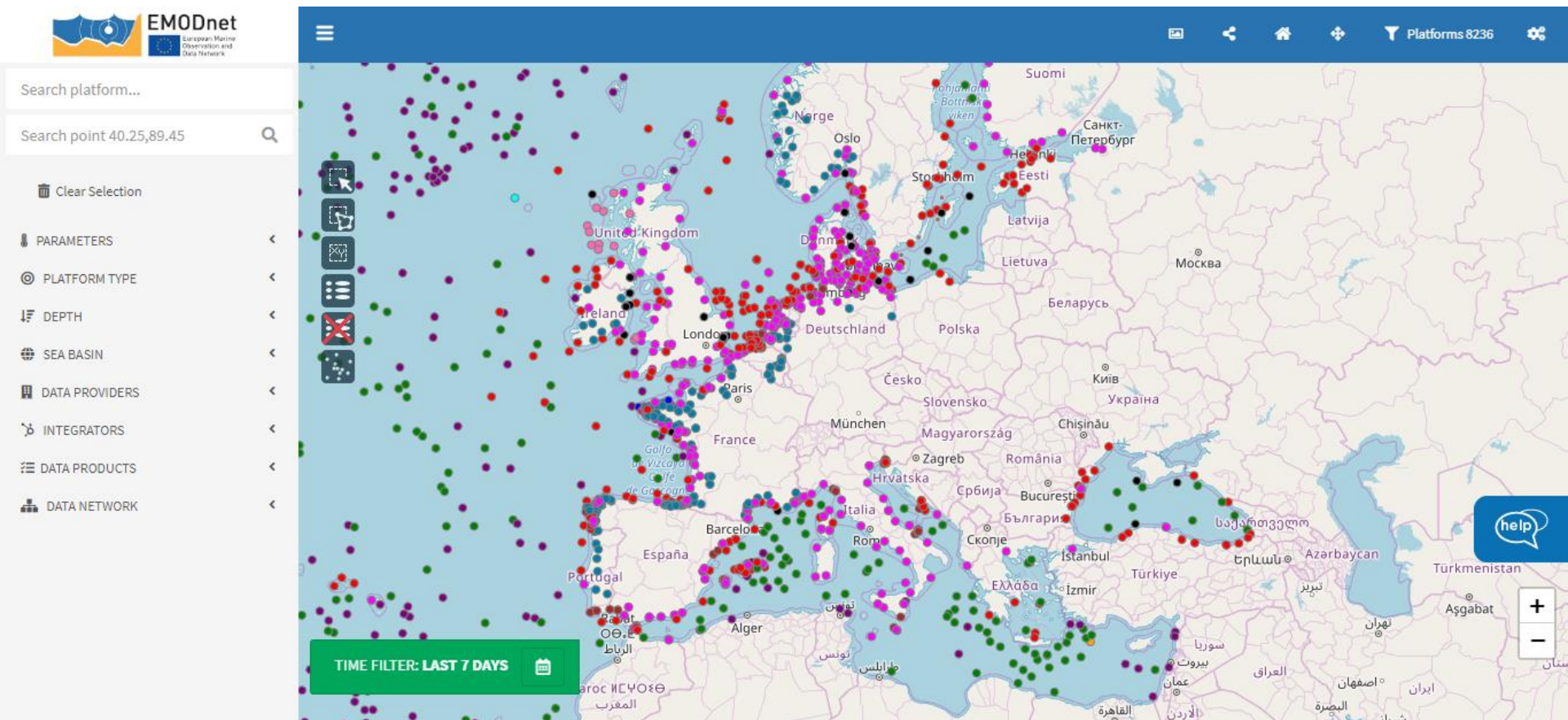


ODYSSEA

Available Data

1. Sea water temperature
2. Sea water salinity or density
3. Sea water currents
4. Sea level
5. Waves and winds (speed & direction)
6. Water clarity (light attenuation)
7. Atmospheric parameters at sea level
8. Underwater noise
9. River data

EMODnet Physics Portal



EMODnet

Human Activities Portal

The **EMODnet Human Activities portal** provides access to **existing marine data on activities carried out in EU waters**, by building a single-entry point for geographic information on 14 different themes.

The portal makes available information such as geographical position, spatial extent of a series of activities related to the sea, their temporal variation, time when data was provided, and attributes to indicate the intensity of each activity.



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Human Activities Portal



Available Data

1. Aggregate Extraction
2. Aquaculture
3. Cultural Heritage
4. Dredging
5. Environment
6. Fisheries
7. Hydrocarbon Extraction
8. Main Ports
9. Ocean Energy Facilities
10. Other Forms of Area Management/Designation
11. Pipelines and Cables
12. Waste Disposal
13. Wind Farms

EMODnet

Human Activities Portal



HUMAN ACTIVITIES

Making use of our oceans

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[HOME](#)

[ABOUT](#)

[DATA SERVICES](#)

[PUBLICATIONS](#)

[BLOG](#)

[HELPDESK](#)

[CENTRAL PORTAL](#)

[Home](#) » [Data Services](#) » [View Data](#)

The screenshot displays the EMODnet Human Activities Portal interface. On the left, there is a 'Layers' panel with a list of data categories, each with a checkbox: Aggregate Extraction, Algae Production, Aquaculture, Cables, Cultural Heritage, Dredging, Environment, Fisheries, Hydrocarbon Extraction, Main Ports, Nuclear Power Plants, Ocean Energy Facilities, Other Forms of Area Management/Designation, and Pipelines. A 'Database Under Construction' warning is visible at the top of this panel. The main area is a satellite map of the North Atlantic and Baltic regions, with labels for 'Νορβηγική Θάλασσα', 'Βαλτική Θάλασσα', 'Βόρεια Θάλασσα', 'Ισλανδία', 'Νορβηγία', 'Σουηδία', 'Φινλανδία', 'Εσθονία', and 'Λετονία'. At the top right of the map area, there is a search bar and navigation icons. In the bottom right corner, there is an 'EMODnet LIVE Chat' button.

EMODnet Portals



Feedback



HUMAN ACTIVITIES

Making use of our oceans

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[HELPDESK](#)

[CENTRAL PORTAL](#)

[Home](#) » [Data Services](#) » [View Data](#)

Database Under Construction

- Aggregate Extraction
- Algae Production
- Aquaculture
- Cables
- Cultural Heritage
- Dredging
- Environment
- Fisheries
- Hydrocarbon Extraction
- Main Ports
- Nuclear Power Plants
- Ocean Energy Facilities
- Other Forms of Area Management/Designation
- Pipelines

Search:

EMODnet LIVE Chat

**No Homogeneity
between portals and
on retrieval of data**



ODYSSEA

PRACTICAL

Accessing EMODnet Bathymetry data

EMODnet

Bathymetry Portal – Download data



Bathymetry data can be retrieved with 2 ways:

1. Through the **Bathymetry Viewing and Download service** in Bathymetry EMODnet Portal
2. Through **OGC WMS and WCS services** which can be found at the following URLs:

WMS: <https://ows.emodnet-bathymetry.eu/wms>

WFS: <https://ows.emodnet-bathymetry.eu/wfs>

WMTS: <https://tiles.emodnet-bathymetry.eu>

WCS: <https://ows.emodnet-bathymetry.eu/wcs>

EMODnet Bathymetry Portal – Download data



The screenshot displays the EMODnet Bathymetry Portal interface. At the top left is the EMODnet logo and the text "BATHYMETRY Understanding the topography of the European seas Bathymetry Viewing and Download service". Below this is a navigation bar with options like "Mean depth full coverage", "Legend", "Retrieve depth", and "Depth profile". The main area is a bathymetric map of the Mediterranean region, showing depth contours and geographical labels. On the right side, there are controls for "Dataset type" (DTM Tiles, High resolution areas, Area of interest) and "DTM version" (2016, 2018). A yellow button prompts the user to "Select your area(s) on the map".

EMODnet Bathymetry Portal – Download data



The screenshot displays the EMODnet Bathymetry Portal interface. At the top left, the EMODnet logo is accompanied by the text "BATHYMETRY" and the tagline "Understanding the topography of the European seas". Below this, it identifies the service as "Bathymetry Viewing and Download service".

The main navigation bar includes a dropdown menu for "Mean depth full coverage", a "Legend" icon, a "Retrieve depth" icon, and a "Depth profile" icon. On the right side of the navigation bar, there are links for "Downloads", "Measure distance", "Settings", and "Help".

The central map area shows a bathymetric view of the Mediterranean Sea region, with depth contours and a 3D view toggle. Several orange-outlined areas are marked on the map, indicating regions of interest. The map includes labels for various countries and cities, such as Italy, Greece, and Turkey.

On the right side of the map, there is a "Dataset type" section with three buttons: "DTM Tiles", "High resolution areas", and "Area of interest". Below these buttons is a yellow instruction box that reads "Select your area(s) on the map".

EMODnet Bathymetry Portal – Download data



BATHYMETRY
Understanding the topography of the European seas
Bathymetry Viewing and Download service

EMODnet

Mean depth full coverage Legend Retrieve depth Depth profile Downloads Measure distance Settings Help

3D

Area of interest

Dataset type

DTM Tiles High resolution areas Area of interest

Select your area by drawing a lat-lon box on the map

Product selection

Tile	DTMProduct format
Area of interest 2018	⚠ Area of interest too large!

EMODnet Bathymetry Portal – Download data



BATHYMETRY
Understanding the topography of the European seas
Bathymetry Viewing and Download service

Mean depth full coverage Legend Retrieve depth Depth profile Downloads Measure distance Settings Help

Dataset type
DTM Tiles | High resolution areas | Area of interest

Select your area by drawing a lat-lon box on the map

Product selection

Tile	DTM Product format
Area of interest 2018	<input type="text" value="Select product format..."/>
	ESRI ASCII
	32 bit float GeoTiff
	RGB GeoTiff

EMODnet Bathymetry Portal – Download data



BATHYMETRY
Understanding the topography of the European seas
Bathymetry Viewing and Download service

Mean depth full coverage Legend Retrieve depth Depth profile Downloads Measure distance Settings Help

Product selection

Tile	DTM	Product format
Area of interest	2018	32 bit float GeoTiff

Complete the order form. After submission you will receive an email with the download links.
Registered in Marine-ID? then authenticate to pre-fill part of the form

Authenticate via Marine-ID

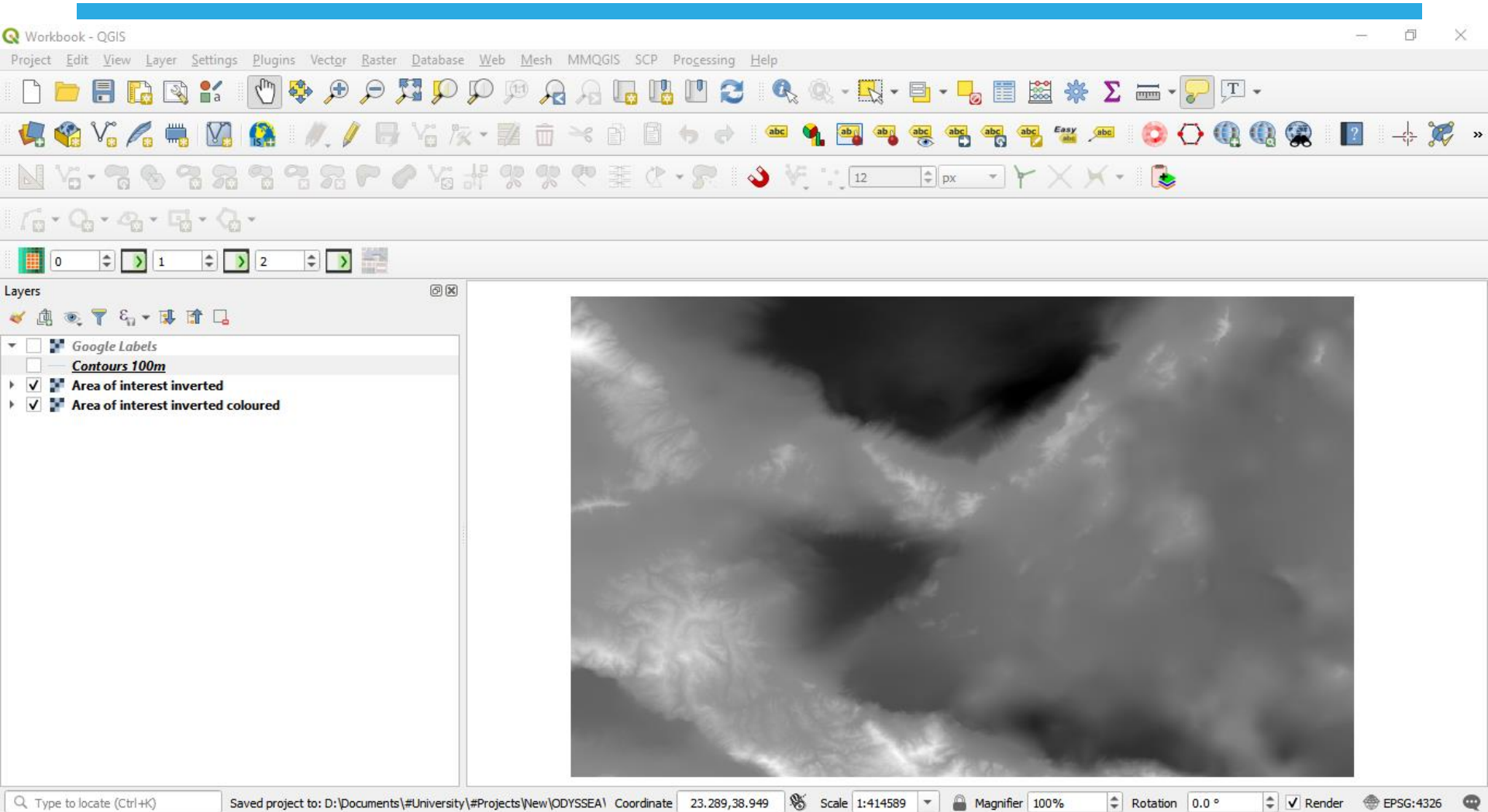
Name

Email

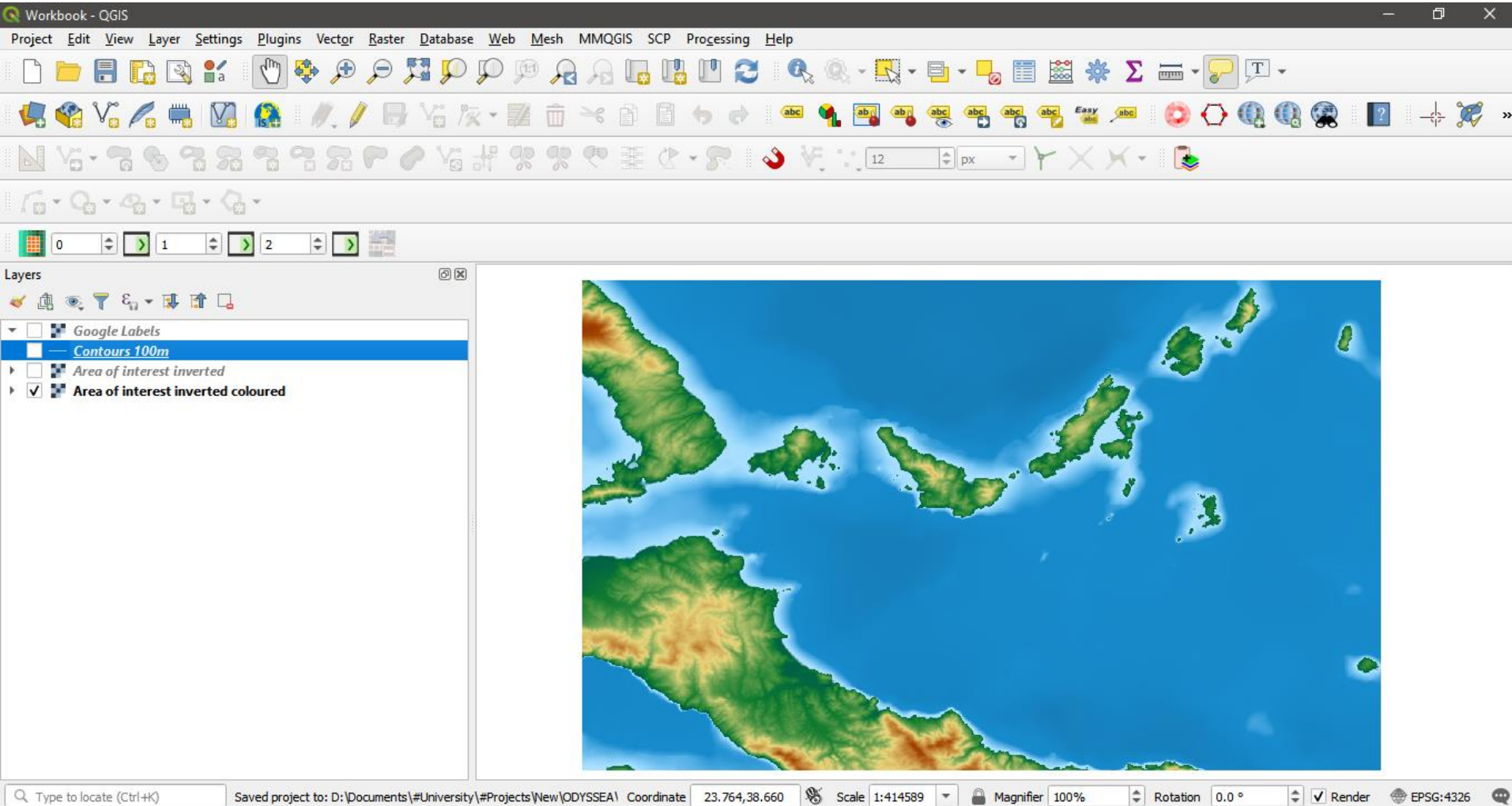
Country

Organisation

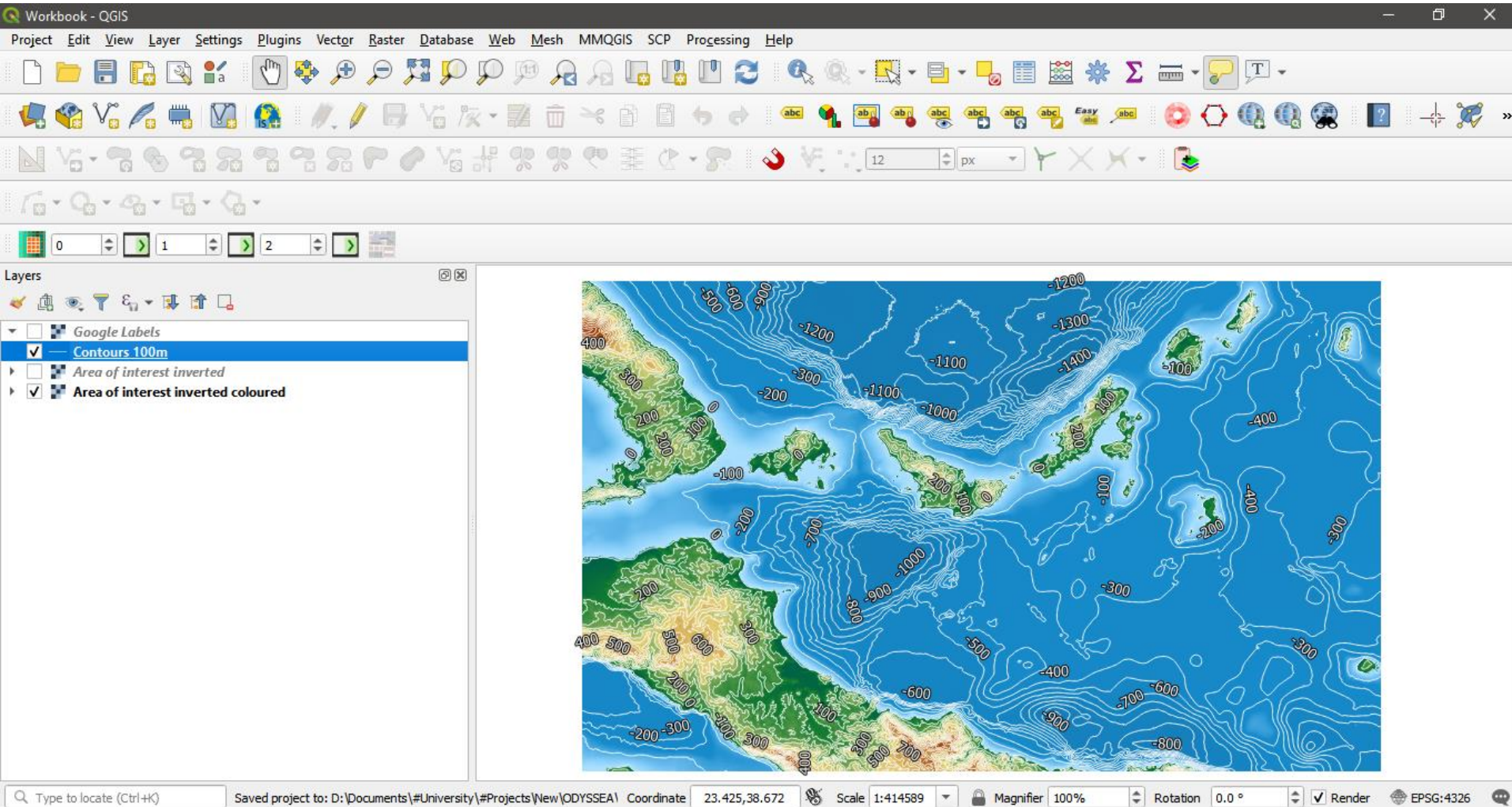
EMODnet Bathymetry Portal – Visualize data



EMODnet Bathymetry Portal – Visualize data



EMODnet Bathymetry Portal – Visualize data



Exercise



ODYSSEA

- Download and visualize bathymetry data of your area of interest



**Creating products and knowledge
for the Mediterranean**



**ΔΗΜΟΚΡΙΤΕΙΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΡΑΚΗΣ** | **DEMOCRITUS
UNIVERSITY
OF THRACE**

THANK-YOU

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727277