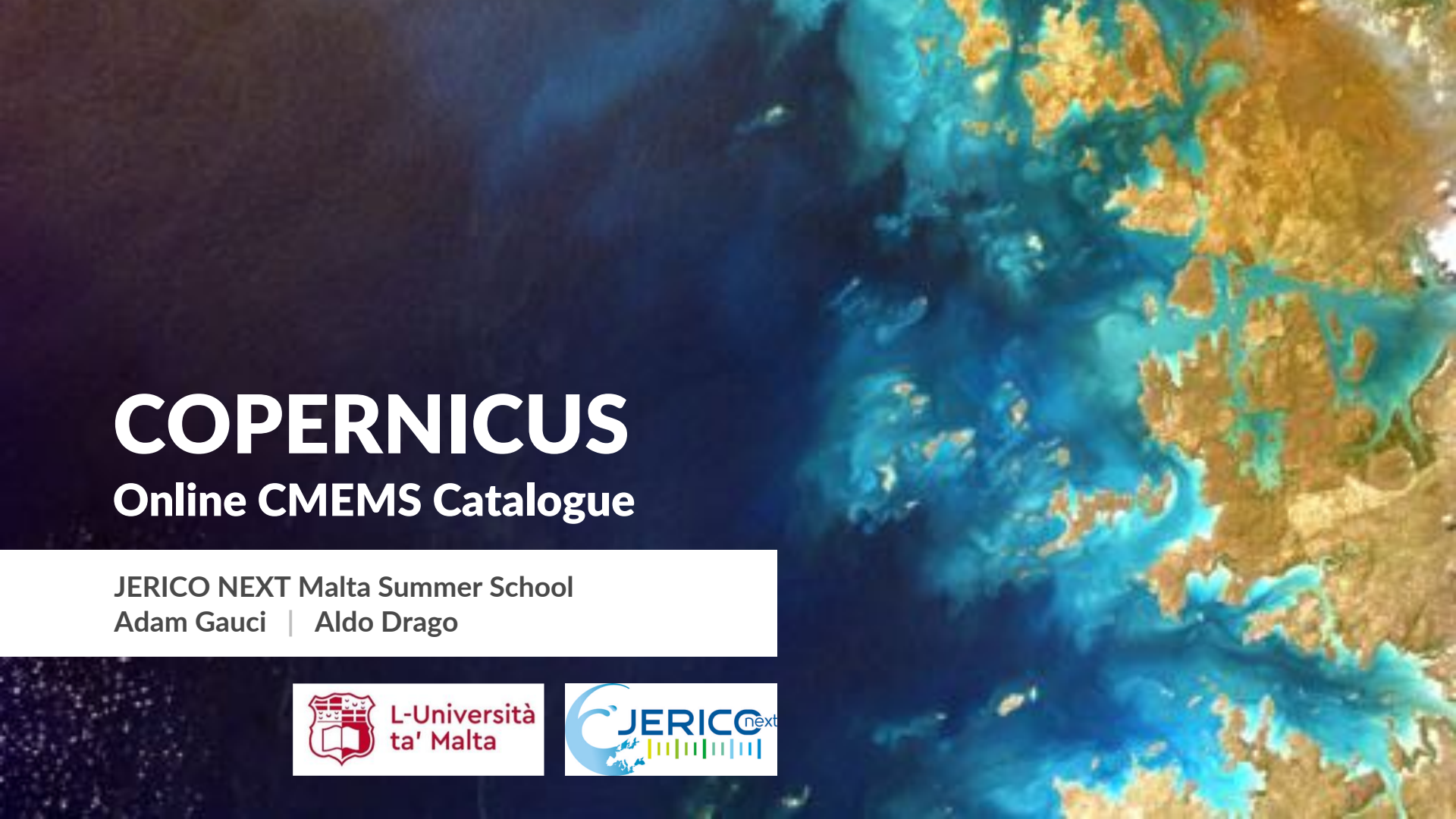


COPERNICUS

Online CMEMS Catalogue

JERICO NEXT Malta Summer School

Adam Gauci | Aldo Drago

L-Università ta' Malta

JERICO next

COPERNICUS MARINE ENVIRONEMT MONTITORING SERVICE (CMEMS)

- Integrated Service
- Open and Free
- Single Catalogue of Products
- Reliable
- Sustainable

CMEMS Access

marine.copernicus.eu

- Ocean Products
- Ocean Monitoring Indicators
- Ocean State Report

Portal

ABOUT US
MARKETS & BENEFITS
NEWS
SCIENCE & MONITORING
TRAINING & EDUCATION
SERVICES PORTFOLIO
ACCESS YOUR OCEAN INFORMATION
GETTING STARTED
SHORT-CUT TO SERVICES
REGISTER NOW!
SCIENTIFIC QUALITY
ONLINE TUTORIALS
COLLABORATIVE FORUM
OCEAN PRODUCTS
Ocean product catalogue, to download or visualize data accross more than 10 variables, including historic, current and forecasted data.
DATA
OCEAN MONITORING INDICATORS
Essential variables monitoring the health of the ocean
TRENDS
OCEAN
Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events
EXPERTISE
2018 06 JUL
LATEST NEWS FLASH
CMEMS-8131
WAVE_GLO_WAV_L3_SWH_NRT product upgraded on 2018-07-06
INFORMATION
ALL NEWS FLASH

Registration

USER REGISTRATION FORM

Section 1 - Registration

1.1 User details

*First Name

*Family Name

*Phone

*E-mail address

*Confirm your e-mail

1.2 Type of your organisation a single selection

- Business and private Company
- Public sector organisation (but "University", see here below)
- University
- Foundation, Association (non-profit organisation)
- Others (no organisation)

1.3 Organisation details

Thank you to accurately complete your organisation address: information provided is internally treated, useful to statistics and CMEMS invitation at forum/event.

*Organisation Name

*URL, Website

Catalogue

■ Ocean Products

YOUR SEARCH

Search by keyword

REGIONAL DOMAIN

All areas

PARAMETERS

TEMPORAL COVERAGE

From 1992-01-01 To 2018-07-18

If checked, the search results will only show products containing the whole selected time range

PRODUCT WITH DEPTH LEVEL

All Areas
Global Ocean
Arctic Ocean
Baltic Sea
European North-West Shelf Seas
Iberia-Biscay-Ireland Regional Seas
Mediterranean Sea
Black Sea

Found 160 ocean products matching your criteria.

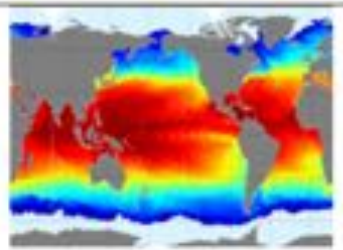
Export results

GLOBAL_ANALYSIS_FORECAST_PHY_001_024

GLOBAL OCEAN 1/12° PHYSICS ANALYSIS AND FORECAST UPDATED DAILY

GLO

Sub-setting



GLOBAL_ANALYSIS_FORECAST_BIO_001_014

GLOBAL OCEAN BIOGEOCHEMISTRY ANALYSIS AND WEEKLY FORECAST

MODEL

GLO

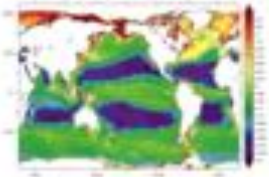
CHL PHYC O2 NO3 PO4 SI FE PP

0.5 degree x 0.5 degree (50 depth levels)

From 2012-01-01 to Present

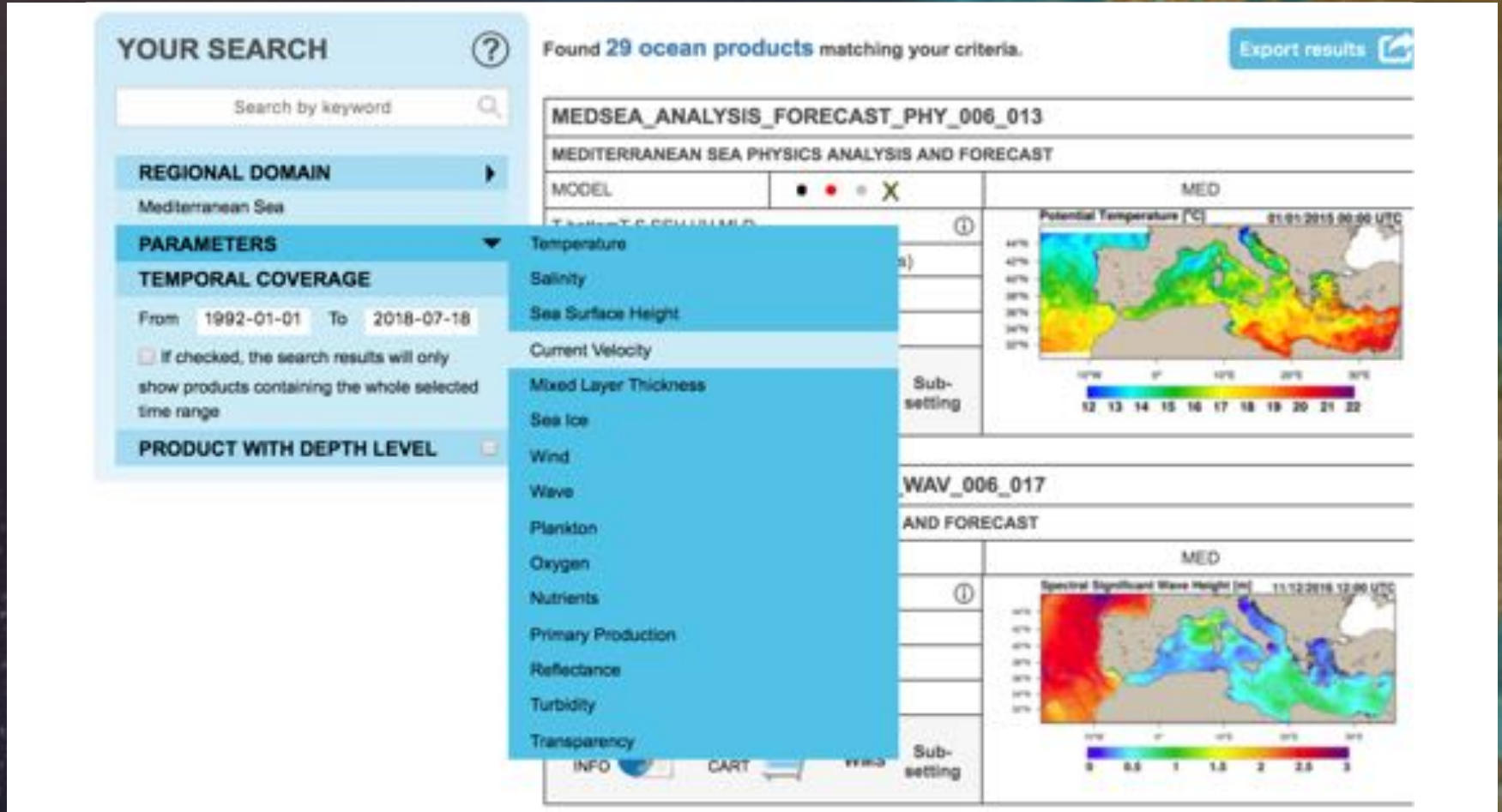
weekly-mean

MORE INFO ADD TO CART WMS Sub-setting



Catalogue

■ Ocean Products

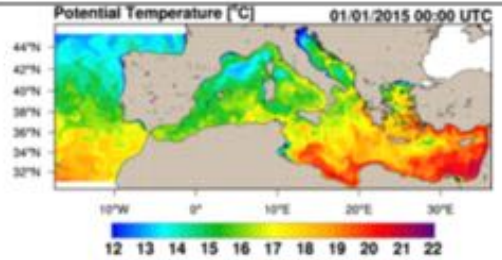


Catalogue

MEDSEA_ANALYSIS_FORECAST_PHY_006_013

MEDITERRANEAN SEA PHYSICS ANALYSIS AND FORECAST

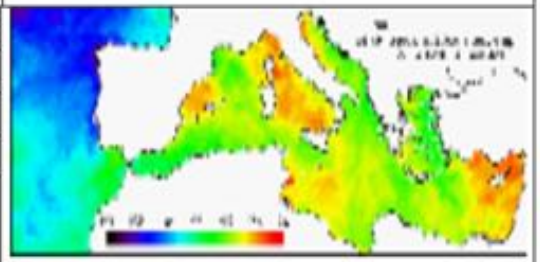
MODEL	● ● ● X	MED
T bottomT S SSH UV MLD ⓘ		
0.042 degree x 0.042 degree (141 depth levels)		
From 2016-01-01 to Present		
monthly-mean, daily-mean, hourly-mean		
MORE INFO ADD TO CART WMS Sub-setting		



SST_MED_SST_L4_NRT_OBSERVATIONS_010_004

MEDITERRANEAN SEA HIGH RESOLUTION AND ULTRA HIGH RESOLUTION SEA SURFACE TEMPERATURE ANALYSIS

OBSERVATION	L4	MED
SST ⓘ		
0.01 degree x 0.01 degree (Surface only)		
From 2016-01-01 to Present		
daily-mean		
MORE INFO ADD TO CART WMS Sub-setting		



Ocean Products

- Name of data product
- Description
- Spatial Extent
- Model / Observation
- Parameters
- Resolution
- Temporal Extent
- Temporal Resolution

Catalogue – More Information

■ Ocean Products

INFORMATION | DOCUMENTATION | SERVICES | NEWS FLASH

PRODUCT IDENTIFIER SST_MED_SST_L4_NRT_OBSERVATIONS_010_004

OVERVIEW

Short description:
For the Mediterranean Sea - The CNR MED Sea Surface Temperature provides daily gap-free maps (L4) at high (HR 0.0625°) and ultra-high (UHR 0.01°) spatial resolution over the Mediterranean Sea. The data are obtained from infra-red measurements collected by satellite radiometers and statistical interpolation.
Detailed description:
Remotely-sensed L4 Sea Surface Temperature (SST) datasets are operationally produced and distributed in near-real time by the Consiglio Nazionale delle Ricerche - Gruppo di Oceanografia da Satellite (CNR-GOS). These SST products are based on the night-time images collected by the infrared sensors mounted on different satellite platforms, and cover the Southern European Seas. The CNR-GOS processing chain includes several modules, from the data extraction and preliminary quality control, to cloudy pixel removal and satellite images collating/merging. A two-step algorithm finally allows to interpolate SST data at high (HR 0.0625°) and ultra-high (UHR 0.01°) spatial resolution, applying statistical techniques. These L4 data are also used to estimate the SST anomaly with respect to a pentad climatology. The basic design and the main algorithms used are described in the following papers.
References:
Buongiorno Nardelli B., C.Tronconi, A. Pisano, R.Santoleri, 2013: High and Ultra-High resolution processing of satellite Sea Surface Temperature data over Southern European Seas in the framework of MyOcean project, Rem. Sens. Env., 129, 1-16, doi:10.1016/j.rse.2012.10.012.
Parameters:
- Analysed sea surface temperature (analysed_sst,K,CF)
- Estimated error standard deviation of analysed_sst (analysis_error,K,CF)
- Sea surface temperature anomaly (C°)

Grid type or geographical projection: Equirectangular latitude longitude grid
Vertical coverage:surface
Update frequency: daily
Operational or historical time series? Operational
Files format:netcdf convention CF/COARDS 1.4. GHRSST GDS2.0 - L4 format
Guide to the product format:see GDS20r5.pdf downloadable from:https://www.ghrsst.org/documents/q/category/gds-documents/operational/. Click on GDS 2 release 5

GEOGRAPHICAL COVERAGE

Areas:
mediterranean-sea

OBSERVATION/MODELS	satellite-observation
PRODUCT TYPE	near-real-time
PROCESSING LEVEL	L4
DATA ASSIMILATION	Not Applicable
VARIABLES	sea_surface_temperature (SST)
SPATIAL RESOLUTION	0.01degree x 0.01degree
VERTICAL COVERAGE (NUMBER OF VERTICAL LEVEL)	Surface
COORDINATE REFERENCE SYSTEM	WGS 84 (EPSG 4326)
FEATURE TYPE	Grid
TEMPORAL COVERAGE	from 2016-01-01T00:00:00Z to Present
TEMPORAL RESOLUTION	daily-mean
UPDATE FREQUENCY	daily
PRODUCTION UNIT	SST-CNR-ROMA-IT

INFORMATION | DOCUMENTATION | SERVICES | NEWS FLASH

TITLE	ONLINE RESOURCE
PRODUCT USER MANUAL (CMEMS-SST-PUM-010-004-006-012-013)	http://marine.copernicus.eu/documents/PUM/CMEMS-SST-PUM-010-004-006-012-013.pdf
QUALITY INFORMATION DOCUMENT (CMEMS-OSI-QUID-010-004-006-012-013)	http://marine.copernicus.eu/documents/QUID/CMEMS-OSI-QUID-010-004-006-012-013.pdf

INFORMATION | DOCUMENTATION | SERVICES | NEWS FLASH

CSW	CSW GetRecordById
WMS	SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_a_V2 SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_c_V2 SST_MED_SSTA_L4_NRT_OBSERVATIONS_010_004_b SST_MED_SSTA_L4_NRT_OBSERVATIONS_010_004_d
SUBSETTER	SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_a_V2 SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_c_V2 SST_MED_SSTA_L4_NRT_OBSERVATIONS_010_004_b SST_MED_SSTA_L4_NRT_OBSERVATIONS_010_004_d
DIRECT GET FILE	N/A
SENSOR OBSERVATION SERVICE	N/A
FTP	SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_a_V2 SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_c_V2 SST_MED_SSTA_L4_NRT_OBSERVATIONS_010_004_b SST_MED_SSTA_L4_NRT_OBSERVATIONS_010_004_d

INFORMATION | DOCUMENTATION | SERVICES | NEWS FLASH

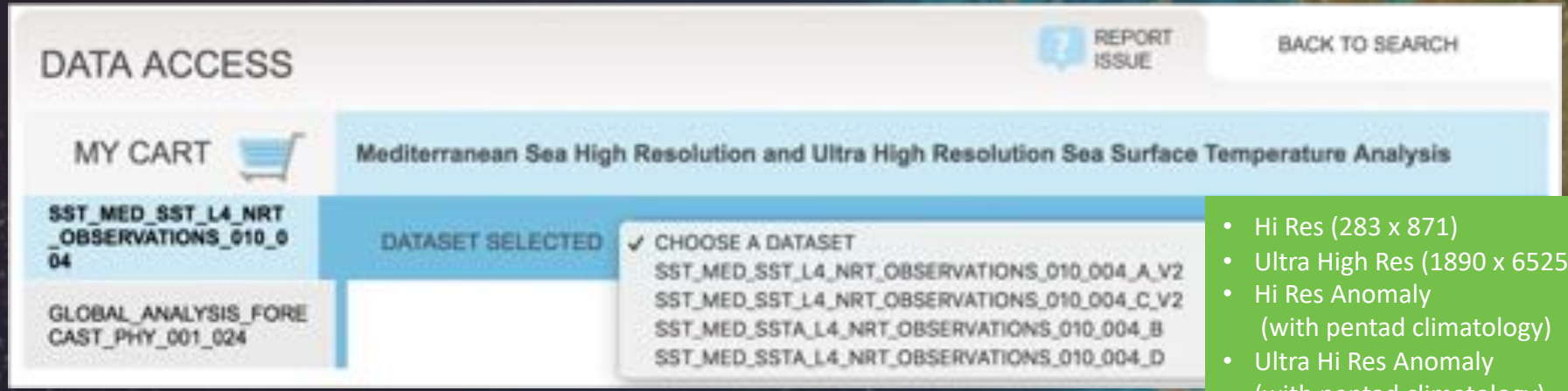
PRODUCT IDENTIFIER SST_MED_SST_L4_NRT_OBSERVATIONS_010_004

Color code:
Blue : *Improvements*
Orange : *Incident in progress / Upcoming maintenance*
Green : *Incident resolved / Maintenance completed*

2018-04-23	[CMEMS:7701] Central Authentication System unavailability	RESOLVED
2018-04-16	[CMEMS:7661] SST BS and MED NRT data of 2018-04-15 and 2018-04-16 are delayed	RESOLVED
2018-04-09	[CMEMS:7609] Cloud issue causing NearRealTime and FORECAST products	RESOLVED

Catalogue – Cart

■ Ocean Products



- Hi Res (283 x 871)
- Ultra High Res (1890 x 6525)
- Hi Res Anomaly (with pentad climatology)
- Ultra Hi Res Anomaly (with pentad climatology)

Catalogue – Cart

■ Ocean Products

DATASET FILTERS

GEOGRAPHICAL AREA

37

13

16

34

Intersection between product coverage and area defined by user.

Product coverage.

Reset geographical selection

TIME RANGE

(Default = Last date available)

START DATE search : 2018-07-08

2018-07-08
2018-07-07
2018-07-06
2018-07-05
2018-07-04
2018-07-03
2018-07-02

END DATE search : 2018-07-08

2018-07-08
2018-07-07
2018-07-06
2018-07-05
2018-07-04
2018-07-03
2018-07-02

DEPTH

(Default = Surface depth)

END DEPTH Choose a

VARIABLES

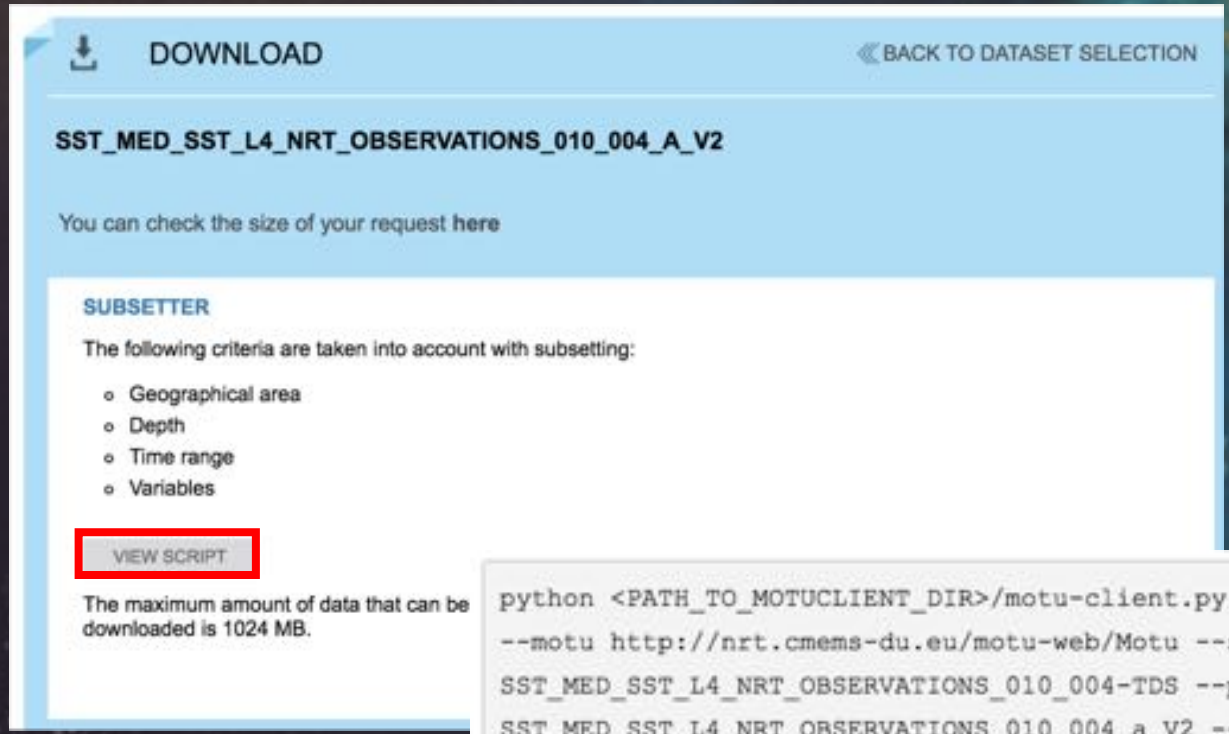
(Default = All variables) Uncheck All

DOWNLOAD	NAME	DESCRIPTION	STANDARD NAME	UNITS
☑	analysed_sst	analysed sea surface temperature	sea_surface_temperature	kelvin
☑	analysis_error	estimated error standard deviation of analysed_sst		kelvin

DATA ACCESS OPTION

Catalogue – Cart

■ Ocean Products




```
python <PATH_TO_MOTUCLIENT_DIR>/motu-client.py --user <USERNAME> --pwd <PASSWORD>
--motu http://nrt.cmems-du.eu/motu-web/Motu --service-id
SST_MED_SST_L4_NRT_OBSERVATIONS_010_004-TDS --product-id
SST_MED_SST_L4_NRT_OBSERVATIONS_010_004_a_V2 --longitude-min 13 --longitude-max 16
--latitude-min 34 --latitude-max 37 --date-min "2018-07-08" --date-max "2018-07-
08" --variable analysed_sst --variable analysis_error --out-dir <OUTPUT_DIR> --
out-name <OUTPUT_FILENAME>
```

NetCDF Viewer

■ Ocean Products

Sources

Create Plot | Combine Plot | Open Dataset | Remove | Remove All | Hide Info

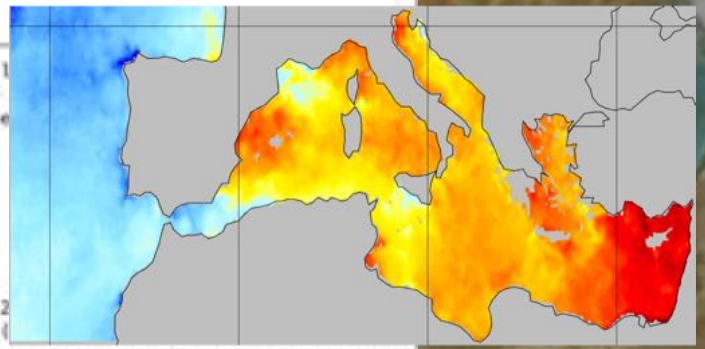
Datasets | Catalogs | Bookmarks

Name	Long Name	Type
SST_MED_SST_L4_NRT_OBSE...	SST_MED_SST_L4...	Local File
analysed_sst	analysed sea surf...	Geo2D
analysis_error	estimated error s...	Geo2D
lat	latitude	1D
lon	longitude	1D
time	reference time of ...	--
SST_MED_SST_L4_NRT_OBSE...	SST_MED_SST_L4...	Local File
analysed_sst	analysed sea surf...	Geo2D
analysis_error	estimated error s...	Geo2D
lat	latitude	1D
lon	longitude	1D
time	reference time of ...	--
SST_MED_SSTA_L4_NRT_OBS...	SST_MED_SSTA_L...	Local File
lat	latitude	1D
lon	longitude	1D
sst_anomaly	sea surface temp...	Geo2D
time	reference time of ...	--
SST_MED_SSTA_L4_NRT_OBS...	SST_MED_SSTA_L...	Local File
lat	latitude	1D
lon	longitude	1D
sst_anomaly	sea surface temp...	Geo2D
time	reference time of ...	--

Show: All variables

Variable "analysed_sst"

```
short analysed_sst(time=1, lat=253, l
  :long_name = "analysed sea surface
  :standard_name = "sea_surface_tempe
  :type = "foundation";
  :units = "kelvin";
  :_FillValue = -32768S; // short
  :add_offset = 273.15f; // float
  :scale_factor = 0.01f; // float
  :valid_min = -300S; // short
  :valid_max = 4500S; // short
  :source = "EUR-L2P-ATS_NR_2P,UPA-L2
  :comment = "Optimal interpolation
  :coordinates = "time lat lon ";
```



	-18.125	-18.062	-18.000	-17.938	-17.875	-17.812	-17.750	-17.688	Avg.
30.250	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
30.312	NaN	295.3	295.4	295.3	295.4	295.4	295.4	295.4	294.3
30.375	NaN	295.3	295.3	295.3	295.3	295.4	295.4	295.4	294.5
30.438	NaN	295.2	295.3	295.2	295.2	295.4	295.4	295.4	294.5
30.500	NaN	295.2	295.2	295.1	295.2	295.3	295.4	295.3	294.6
30.562	NaN	295.1	295.2	295.2	295.4	295.3	295.3	295.2	294.7
30.625	NaN	295.1	295.1	295.3	295.4	295.4	295.3	295.2	294.7
30.688	NaN	295.1	295.1	295.2	295.3	295.3	295.3	295.2	294.8
30.750	NaN	295.2	295.2	295.2	295.2	295.3	295.2	295.2	294.7
30.812	NaN	295.2	295.2	295.4	295.3	295.3	295.2	295.3	294.9
30.875	NaN	295.3	295.4	295.5	295.5	295.3	295.2	295.3	295.1
30.938	NaN	295.2	295.3	295.4	295.4	295.3	295.3	295.2	295.2
31.000	NaN	295.2	295.3	295.3	295.4	295.4	295.4	295.3	295.4
31.062	NaN	295.3	295.3	295.3	295.3	295.4	295.4	295.3	295.5
31.125	NaN	295.3	295.3	295.3	295.2	295.3	295.3	295.2	295.8
31.188	NaN	295.3	295.3	295.3	295.2	295.2	295.2	295.2	296.2
31.250	NaN	295.3	295.3	295.3	295.2	295.1	295.3	295.3	296.6
31.312	NaN	295.2	295.3	295.2	295.2	295.3	295.3	295.3	296.8
31.375	NaN	295.2	295.2	295.3	295.2	295.2	295.3	295.3	296.9
31.438	NaN	295.3	295.3	295.3	295.3	295.2	295.2	295.2	296.9

Monitoring Indicators

- Track oceanic changes in line with climate change.
- Ocean Monitoring Indicators (OMIs) are downloadable data sets covering the past 25 years.
- Used to monitor the oceanic trends in line with climate change.
- These include ocean warming, sea level rise and melting of sea ice.
- Allows users to track the vital health signs of the ocean over the past quarter of a century.

Sea Level Rise

Ocean Heat

Sea Ice Extent

Copernicus
Marine Service
Copernicus
MERCATOR OCEAN
Product Launch
Ocean Monitoring Indicators
Sea Level Rise
Ocean Heat
Sea Ice Extent
marine.copernicus.eu

Monitoring Indicators

OCEAN HEAT CONTENT

Ocean Heat Content Monitoring Indicator

Anomalies and trends
Time series and maps

Multi-product approach:
global reanalyses and
reprocessed observations

1993-2016

GLOBAL

NORTH WE

SEA LEVEL

Sea Level Ocean Monitoring Indicator

Averaged mean and
regional trends
Time series and maps

Satellite observations

1993-2017

GLOBAL OCEAN

ARCTIC OCEAN

ANTARCTIC OCEAN

BALTIC SEA

BLACK SEA

Global Mean Sea Level
Jan 1993-May 2017

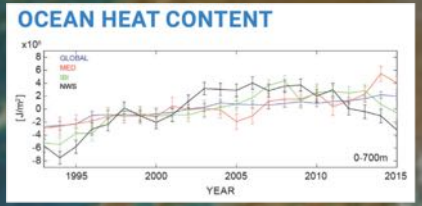
MORE INFO

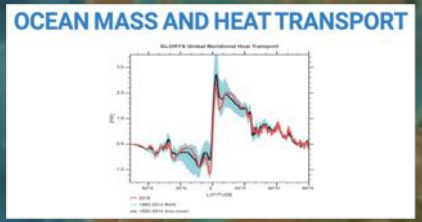
Regional Mean Sea Level
Trends
Jan 1993 to May 2017

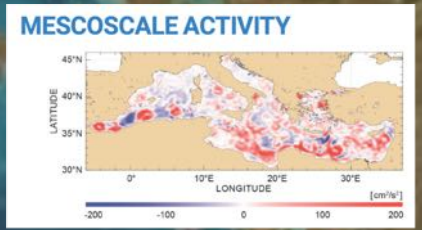
MORE INFO

Ocean State Report

- Written by 80 scientific experts from more than 25 institutions
- Annual reporting on the state and health of the Global Ocean and European Seas.
- Based on marine environment monitoring capabilities of CMEMS.







Thank you!

Let’s try this in the lab later today…