EMODnet
European Marine Observation and Data Network

Your gateway to marine data in Europe

EMODnet Physics
EMODnet Data Ingestion and Safe Keeping

EASME/EMFF/2016/006 - Operation, development and maintenance of a European Marine Observation and Data Network

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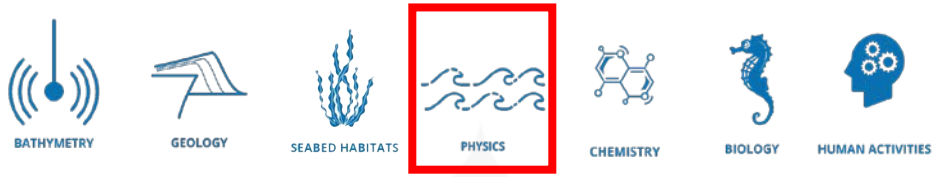
EMODnet

Launched in 2009 by DG MARE to unlock hidden and fragmented marine data resources

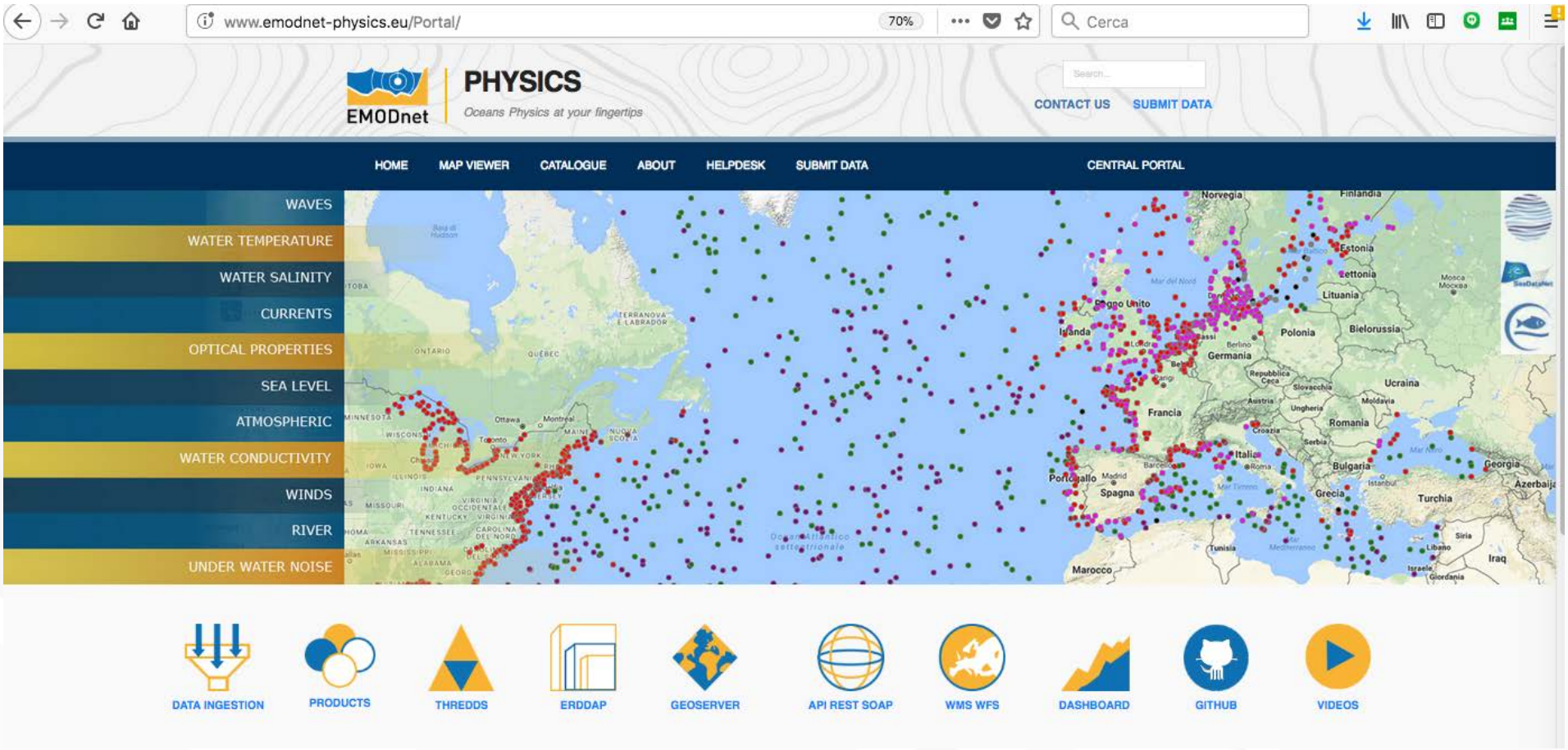


+ Data Ingestion Facility
+ Central Portal and Secretariat

Principles:

- **Collect once and use many** times
- Develop **data standards** across and within disciplines
- **Build on existing efforts** from data communities
- **Accompany data** with statements on data ownership, accuracy and precisions
- Make the data**, free and open**, avaialble to any user
- **Reduce fragmentation** and **facilitate the ingestion/connection** of new data sources and make available more data

EMODnet Physics



One portal, thousands of datasets, many products and services

In a nutshell

EMODnet
European Marine Observation and Data Network

Parameters
Temperature
Salinity
Waves
Currents
Sea Level
Optical properties
Wind
Atmospheric param.
Biogeochemical param.
Ice data
River inflow
Acoustic pollution (water noise)

Products
Data products • Sea Level • Temperature & Salinity • Currents at sea level • River runoff & TSM • Impulsive Noise • Ocean State • Ice coverage

Data age
Real Time (RT) data flow based on SOS SWE
Near real-time (NRT) data at in situ observatories at sea
Reprocessed NRT data
Archived data derived from further elaboration and validation

Services
Data portal
Monitoring & reporting tools
Catalogues
http & permaURLs
API and widgets
Ingestion and support tools

Different sources…

Credit: Dan Costa, SMHI, SOCIB, REDMAR

Different (data) routes

Parameters
Temperature
Salinity
Waves
Currents
Sea Level
Optical properties
Wind
Atmospheric param.
Biogeochemical param.
Ice data
River inflow
Acoustic pollution (water noise)

EuroGOOS

jcomm

CMEMS INSTAC
Global DAC
Thematic AC[1]

EMODnet PHYSICS

Regional Networks
IOOS
IMOS
IAPB
SOOS

Global Networks
ARGO
OceanSITES
DBCP
GOSHIP/GOSUD

Emerging Networks
OceanGliders (including EGO)
(Global) HFR

xAC functions:
- Acquisition
- Harmonization
  - QC (e.g. EuroGOOS DATA-MEQ WG)
  - Format
  - Vocs (SDN P01, P06, P09)
- Assessment & Validation

[1] when needed data flow were re-designed and «new» one designed e.g. Gliders, HFR, River inflow, Acoustic pollution,

One goal

A linked common infrastructure to serve many user

Real Time data sets

Repositories:
- SOS server

Platforms:
- Sensor Web Enabled

Time dimension:
- Real time

Metadata + Transport format:
- SensorML + O&M

Reprocessed data/Products

Repositories:
- SDN, CMEMS INSTAC, PSMSL, SONEL, GRDC, MEOP, …

Time dimension:
- Depending on products

Geo dimension:
- Depending on products

Metadata + Transport format:
- Netcdf (CF), OGC

Near Real Time data/operational data

Repositories:
- CMEMS INSTAC - EuroGOOS ROOS (5 regional assembly centres + 1)
- Institutes*
- GDAC/IOOS/IMOS**

Platforms:
- fixed mooring, ferrybox, tide gauge, drifting buoy, ARGO, profiling mooring, HF Radar, ships

Time dimension:
- Daily files, Monthly aggrg., Rep long term

Metadata + Transport format:
- Netcdf (CF convention), csv

Historical validated data sets

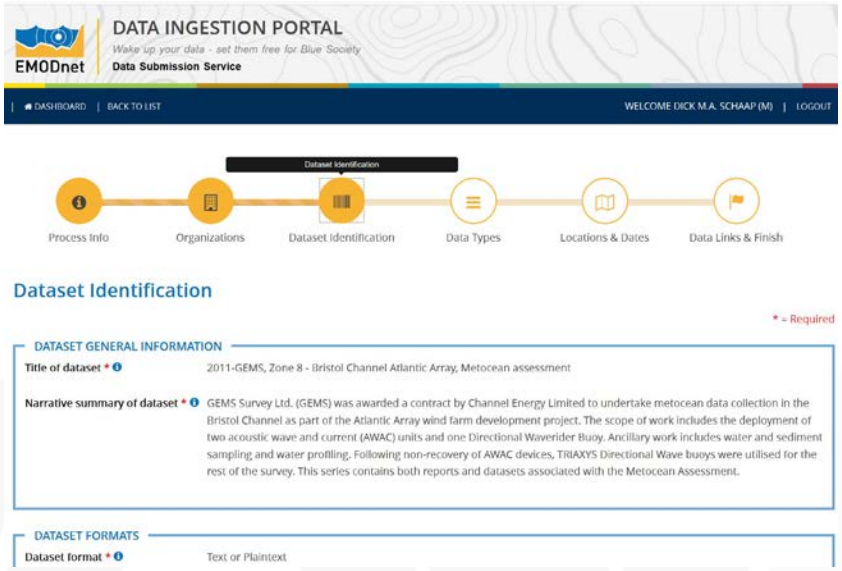
Repositories:
- CDI: centralized
- Datasets: NODC and SeaDataNet nodes (100 centres)

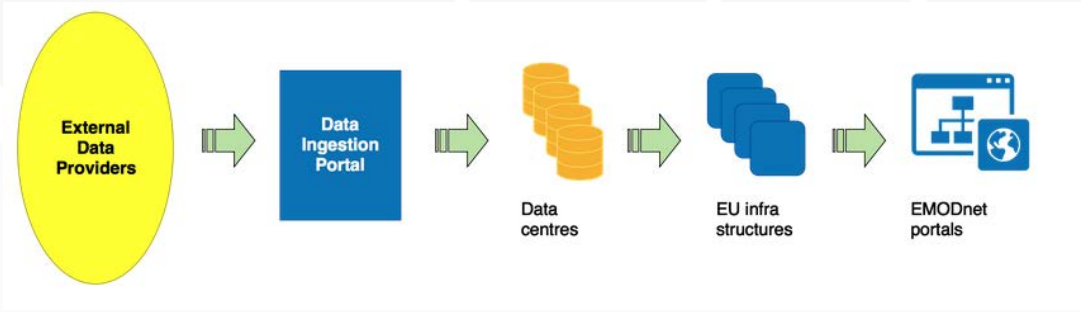
Platforms:
- fixed stations (mooring, tide gauge)

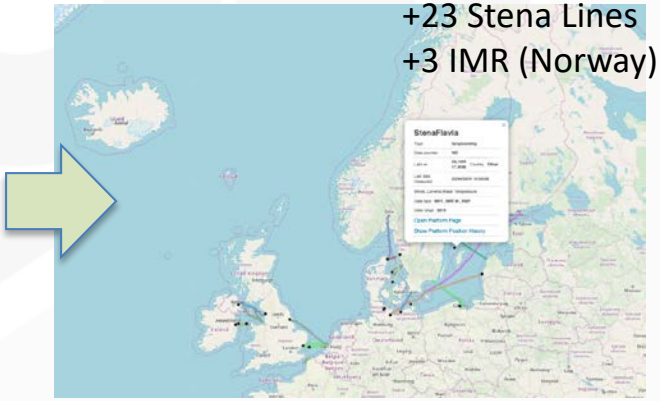
Time dimension:
- Depending on datasets (ranging from month to years)

Metadata + Transport format:
- CDI + ODV4/Netcdf (CF)

When it is not enough …

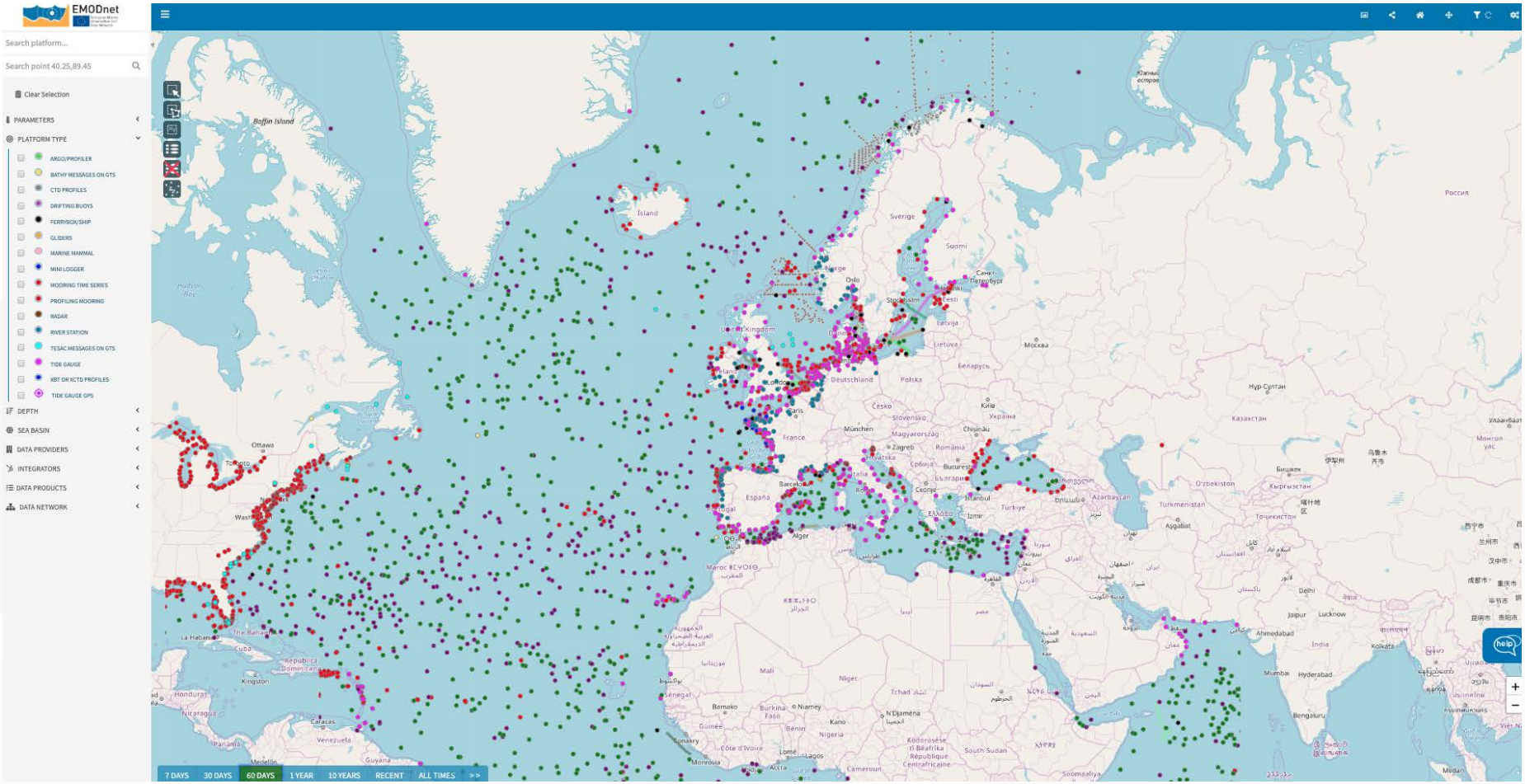




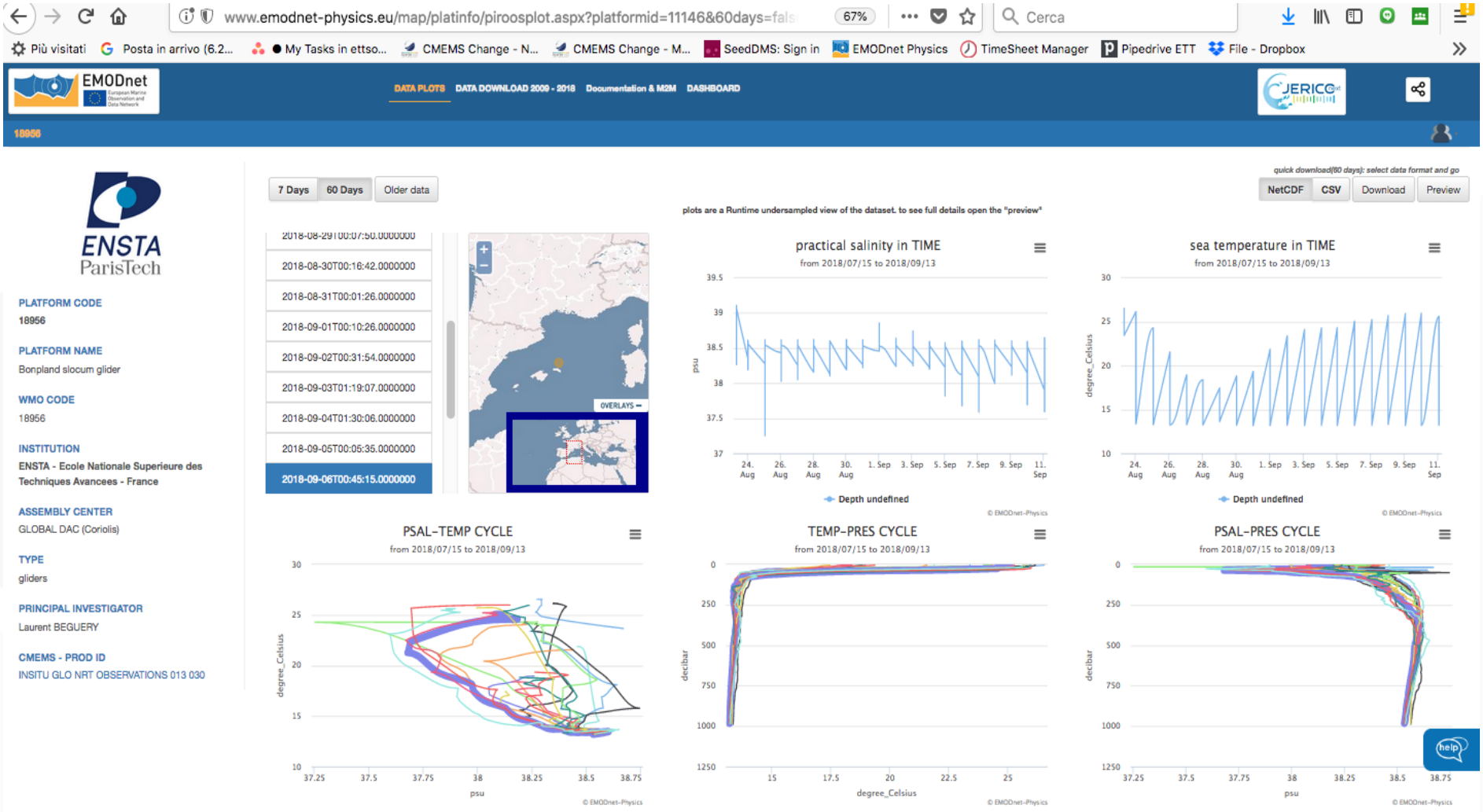


EMODnet
European Marine Observation and Data Network

/map



/map/glider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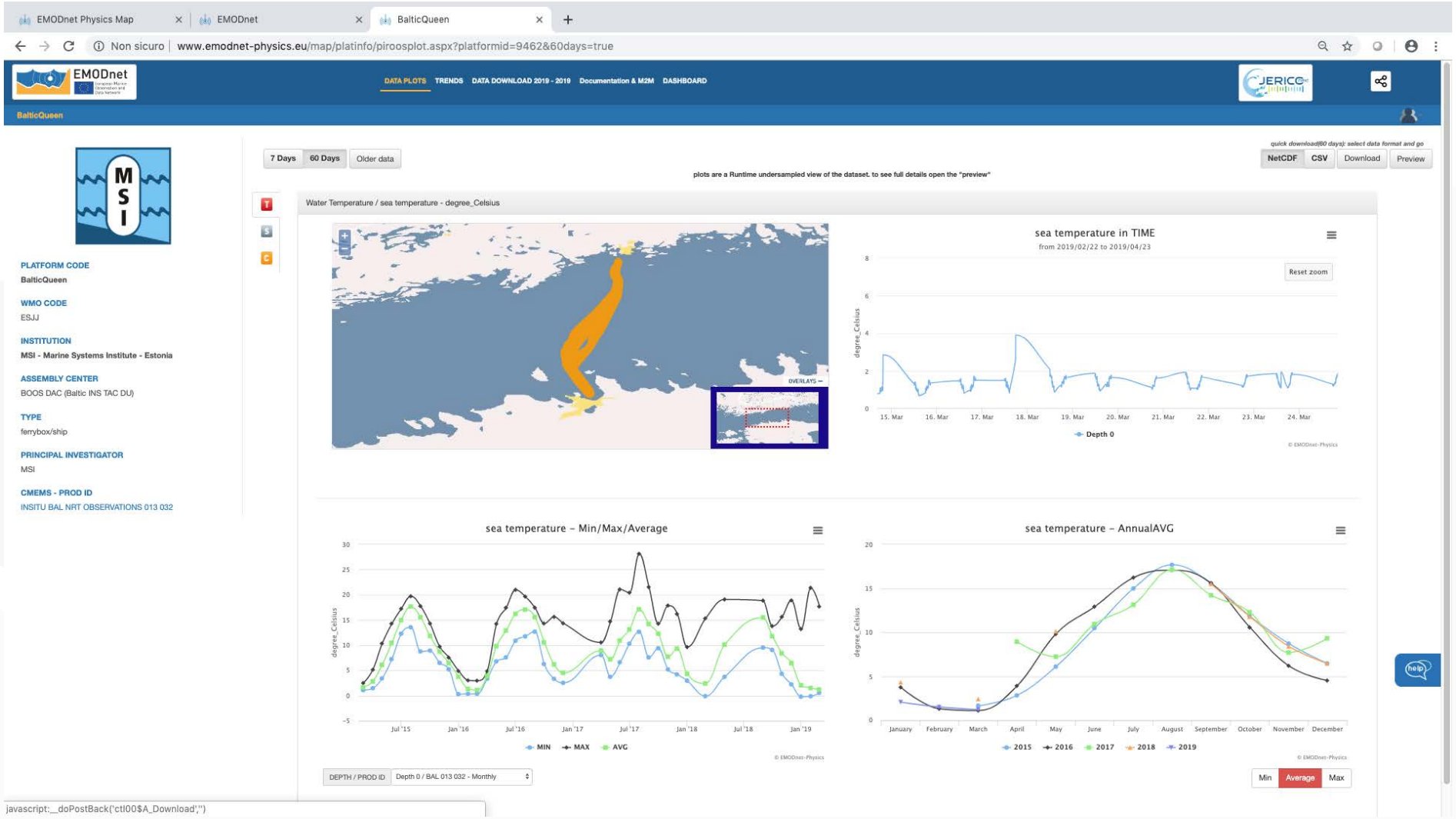
67%
Cerca
Più visitati
Posta in arrivo (6.2...
My Tasks in ettso...
CMEMS Change - N...
CMEMS Change - M...
SeedDMS: Sign in
EMODnet Physics
TimeSheet Manager
Pipedrive ETT
File - Dropbox
EMODnet
DATA PLOTS
DATA DOWNLOAD 2009 - 2018
Documentation & M2M
DASHBOARD
JERICO
18956
ENSTA ParisTech
PLATFORM CODE
18956
PLATFORM NAME
Bonpland slocum glider
WMO CODE
18956
INSTITUTION
ENSTA - Ecole Nationale Superieure des Techniques Avancees - France
ASSEMBLY CENTER
GLOBAL DAC (Coriolis)
TYPE
gliders
PRINCIPAL INVESTIGATOR
Laurent BEGUERY
CMEMS - PROD ID
INSITU GLO NRT OBSERVATIONS 013 030
7 Days
60 Days
Older data
2018-08-30T00:16:42.0000000
2018-08-31T00:01:26.0000000
2018-09-01T00:10:26.0000000
2018-09-02T00:31:54.0000000
2018-09-03T01:19:07.0000000
2018-09-04T01:30:06.0000000
2018-09-05T00:05:35.0000000
2018-09-06T00:45:15.0000000
OVERLAYS
plots are a Runtime undersampled view of the dataset. to see full details open the "preview"
quick download(60 days): select data format and go
NetCDF
CSV
Download
Preview
practical salinity in TIME
from 2018/07/15 to 2018/09/13
psu
Depth undefined
sea temperature in TIME
from 2018/07/15 to 2018/09/13
degree_Celsius
Depth undefined
PSAL-TEMP CYCLE
from 2018/07/15 to 2018/09/13
degree_Celsius
psu
TEMP-PRES CYCLE
from 2018/07/15 to 2018/09/13
decibar
degree_Celsius
PSAL-PRES CYCLE
from 2018/07/15 to 2018/09/13
decibar
psu
help

/map/FB


EMODnet Physics Map
EMODnet
BalticQueen
Non sicuro | www.emodnet-physics.eu/map/platinfo/piroosplot.aspx?platformid=9462&60days=true
DATA PLOTS
TRENDS
DATA DOWNLOAD 2019 - 2019
Documentation & M2M
DASHBOARD
BalticQueen
7 Days
60 Days
Older data
plots are a Runtime undersampled view of the dataset. to see full details open the "preview"
quick download(60 days): select data format and go
NetCDF
CSV
Download
Preview
Water Temperature / sea temperature - degree_Celsius
sea temperature in TIME
from 2019/02/22 to 2019/04/23
Reset zoom
degree_Celsius
Depth 0
sea temperature - Min/Max/Average
MIN
MAX
AVG
sea temperature - AnnualAVG
2015
2016
2017
2018
2019
PLATFORM CODE
BalticQueen
WMO CODE
ESJJ
INSTITUTION
MSI - Marine Systems Institute - Estonia
ASSEMBLY CENTER
BOOS DAC (Baltic INS TAC DU)
TYPE
ferrybox/ship
PRINCIPAL INVESTIGATOR
MSI
CMEMS - PROD ID
INSITU BAL NRT OBSERVATIONS 013 032
DEPTH / PROD ID
Depth 0 / BAL 013 032 - Monthly
Min
Average
Max
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EMODnet
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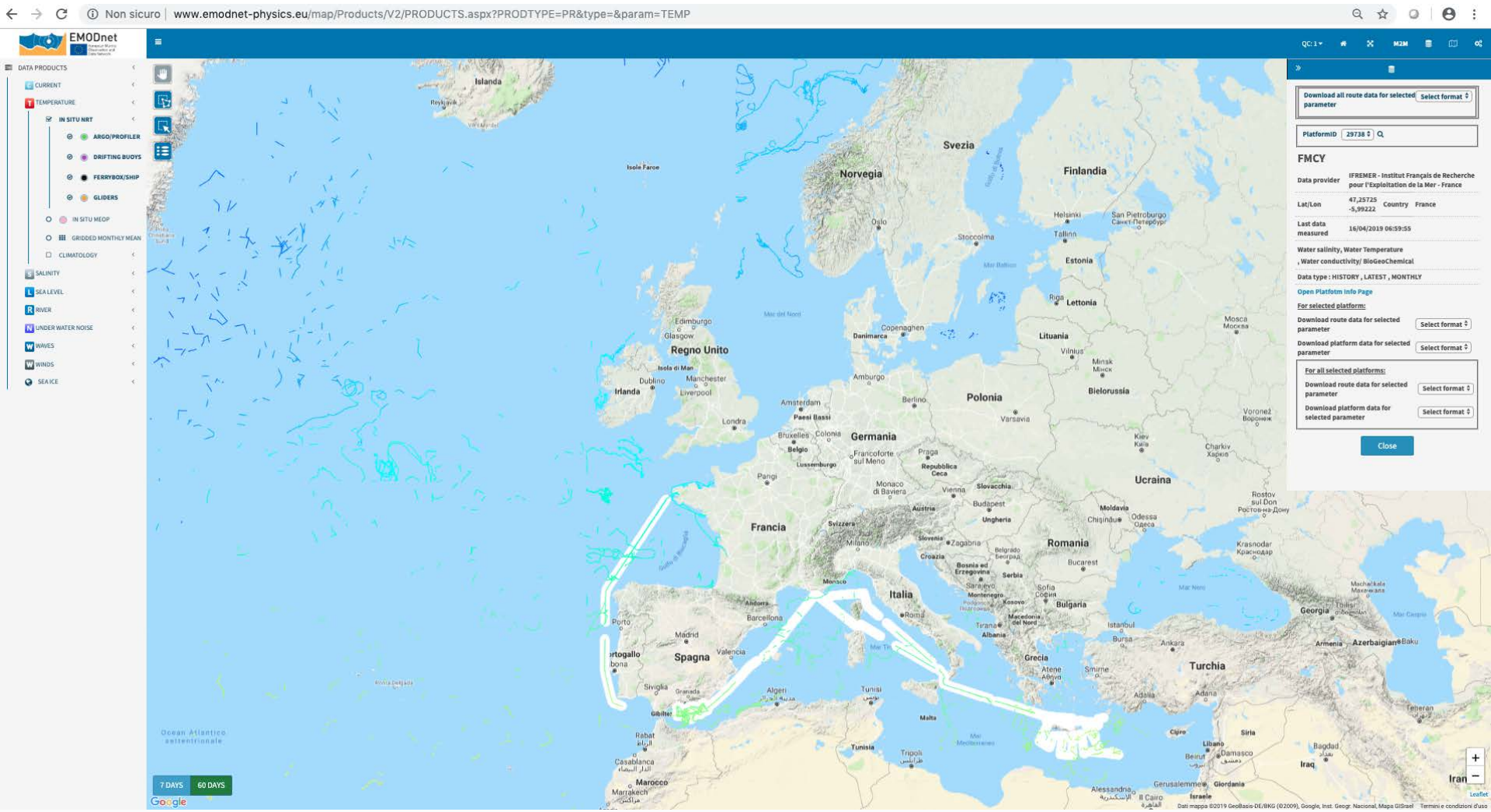
/products

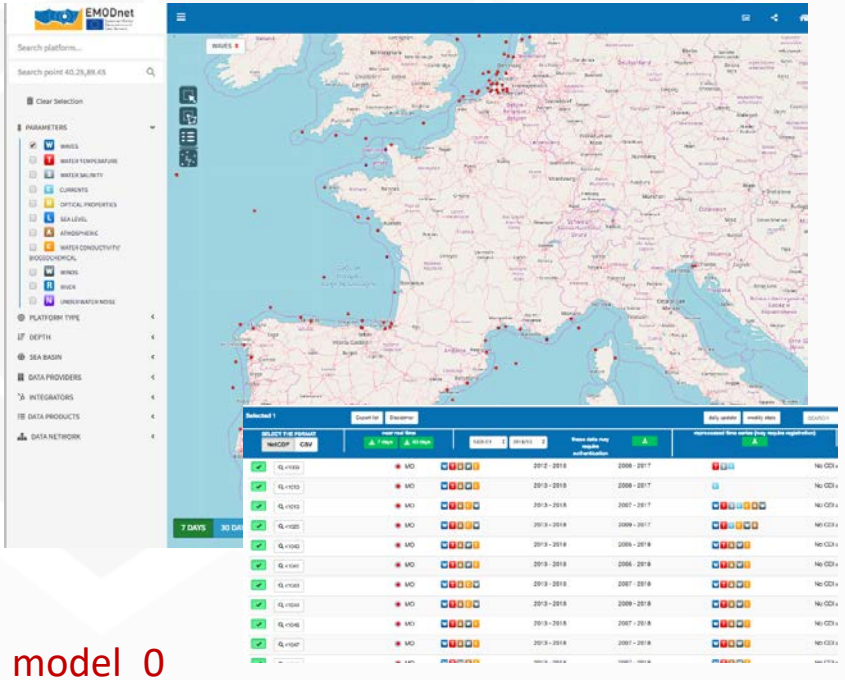


User: DHI and HyMOLAB

Mediterranean Wind Wave Model is a **met-ocean database** aimed at providing nearly 40 years of hourly time series of wind and wave conditions for the entire Mediterranean Sea.

EMODnet Physics data were and are used for calibration and continuous validation purposes

DHI is an international firm with its headquarters in Denmark, which specializes in delivering solutions to various water challenges.



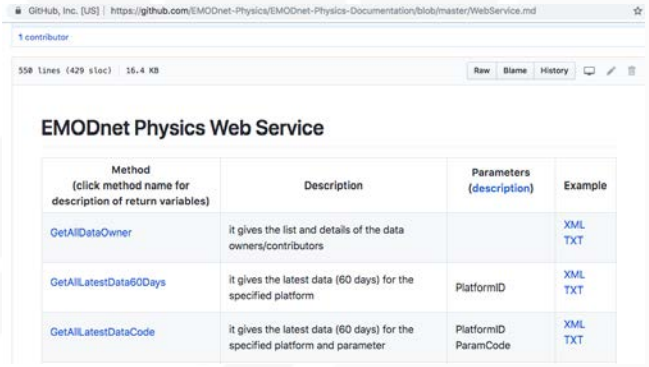
Service: webmap and platforms list download

http://www.emodnet.eu/mediterranean_wind_wave_model_0

User: LAMBDA

EMODnet Physics River data service supports the LAMBDA project to demonstrate the quality of modelling results produced by the watershed models.

The EMODnet Physics - River data service provides a unique one stop shop for operational near real time river data in a standardised format for several countries facilitating the access, download and validation of this kind of data



Service: API and web services

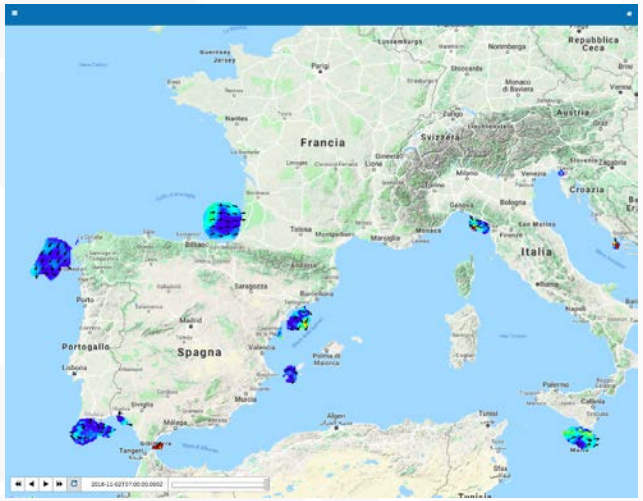
https://github.com/EMODnet-Physics/EMODnet-Physics-Documentation/blob/master/WebService.md

http://www.emodnet.eu/emodnet-cmems-together-build-framework-improving-land-boundary-conditions-cmems-regional-products

User: PM_TEN

Water-pollutants-dispersion studies are usually performed with numerical codes, which require both meteorological and marine **surface current inputs**. The inputs are usually provided by circulation models and/or by radar data analysis, **such as those available in the EMODnet Physics database.**

PM_TEN (Physical Methods and Technologies for Environmental Needs) is an Italian supporting assesssment on the analysis of air pollution, atmospheric impact and the effects of harbours and ships on urban air quality.



Service: THREDDS SERVER

- http://thredds.emodnet-physics.eu/thredds/catalog.html
- http://thredds.emodnet-physics.eu/thredds/HFRADARCatalog.html

http://www.emodnet.eu/capitalising-emodnet-radar-data-water-dispersion-studies

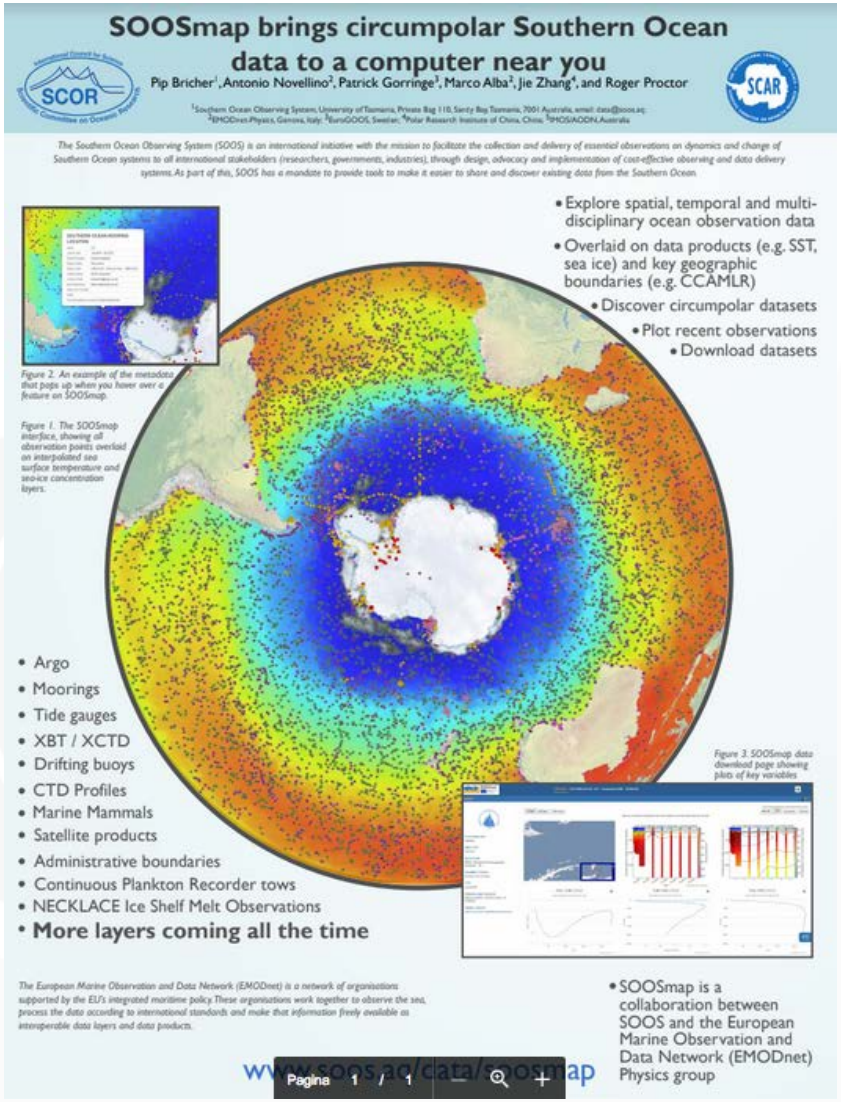
User: SOOS

SOOSmap builds on the data aggregation and sharing **infrastructure of EMODnet** to bring circumpolar datasets into a single web-based discovery portal.

Through SOOSmap, users can discover, plot, explore, and download datasets of relevance to biologists, ecologists, ice scientists, and physical oceanographers.

The use of EMODnet allows SOOS to develop the data-sharing tools it needs **without duplicating existing infrastructure** and without placing undue burden on its member organisations

Service: child portal
http://www.soos.aq



Back to the point

Different user, different interests, different products, …

- Data format (netcdf, odv, …), data organization (daily, transects, cruises, …)
- Data quality and Data quality flags (common integrated method, enable synch with other platforms)
- Parameters and data flow/ different users, different needs:
  - **Real Time, Near Real Time** (within 24 hours)
  - **Recovered** (full resolution),
  - **Delayed mode** after calibration and/or validation
- Findability, Accessibility, Interoperability and Reusability (**FAIR**) both for machines and for people
- **Open and free** data flow (we do not need one single DB, we need the data to be accessible!)

Node/TAC approach

- If the **data provider can set up the data flow**, the node/TAC has to link and include
- If the **data provider cannot setup the data flow**, the node/TAC applies functions and disseminate

Ocean physics at your fingertips

contacts@emodnet-physics.eu

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