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GHER_ULg

EMODnet
European Marine Observation and Data Network

LIÈGE université

Open Sea Lab Bootcamp Hackathon

Working with Diva gridded fields

How to get the prepared EMODnet Chemistry data?

Data access

EMODnet OpenSeaLab

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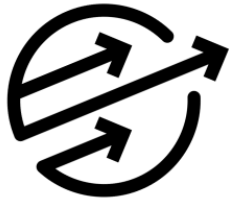
Overview

Selection

22nd of September to 23rd of October - Selection process opens. Apply via opensealab.eu

Explore the data

Explore the data and get familiar with the EMODnet environment. Check out the thematic portals and the data page on this site.

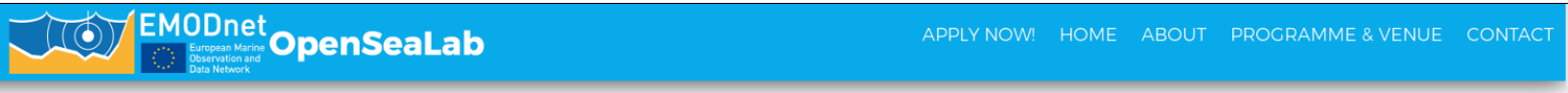


Competition

15th 16th & 17th November EMODnet Open Sea Lab Workshops & Open Data Competition

Programme & Venue

Data access



Data Services & Data Downloads

EMODnet - your gateway to marine data in Europe - holds a wealth of marine data. There are 8 thematic portals in a consortium made up of more than 160 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 essentially free of restrictions on use.

We understand that it may be a bit overwhelming to find your way around the data from EMODnet, so we tried to make it easier for you by listing the web services and providing some datasets for you to use during the Open Sea lab. Get inspired by exploring the data made available here. If there is a particular theme or dataset that you'd like to see listed here, don't hesitate to send us an email and we'll get back to you straight away.

Click here to access the data page. (This page is being continuously updated)

Competition

3 day Boot Camp

The bootcamp means three days of stimulation for those with big ideas and for those who develop and design very well! Each day from 9am til 6pm you can dive into a mind-boggling wealth of data and get started to create the next money making application, develop new solutions, conceive new business models or use cases based on one of the chosen themes for the Open Sea Lab data competition.

Marine data

Use, re-use and combine archived and near-real time open marine data and observations from the European Marine Observation and Data Network (EMODnet) , get support from different experts including marine data specialists, developers, experts in business modelling, pitching coaching etc.. and use their expertise to build or shape up your idea. Work together with your team and spend your time wisely. You will be amazed at how fast your progress will be with all the support that is on offer.

Data access

EMODnet European Marine Observation and Data Network

EMODnet European Marine Observation and Data Network OpenSeaLab

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Data & Web Services

From EMODnet

EMODNET BATHYMETRY | EMODNET GEOLOGY | EMODNET CHEMISTRY

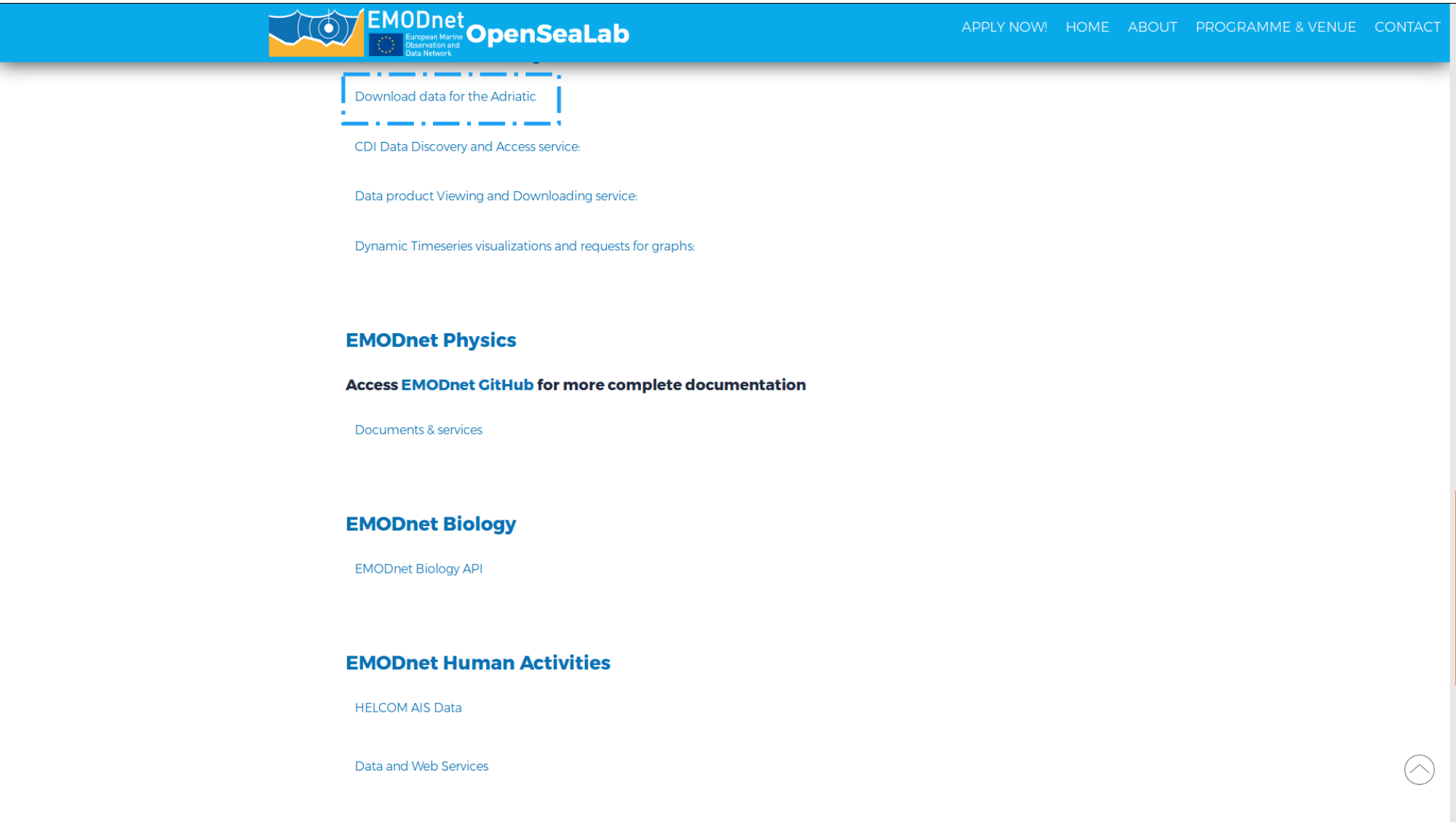
EMODNET PHYSICS | EMODNET BIOLOGY | EMODNET HUMAN ACTIVITIES | EMODNET SEABED HABITATS

From others

LIFEWATCH MARINE | OBIS | MARINE REGIONS | WORLD REGISTER OF MARINE SPECIES (TAXONOMY)

MARINE COPERNICUS | EUROPEAN DATA PORTAL

Data access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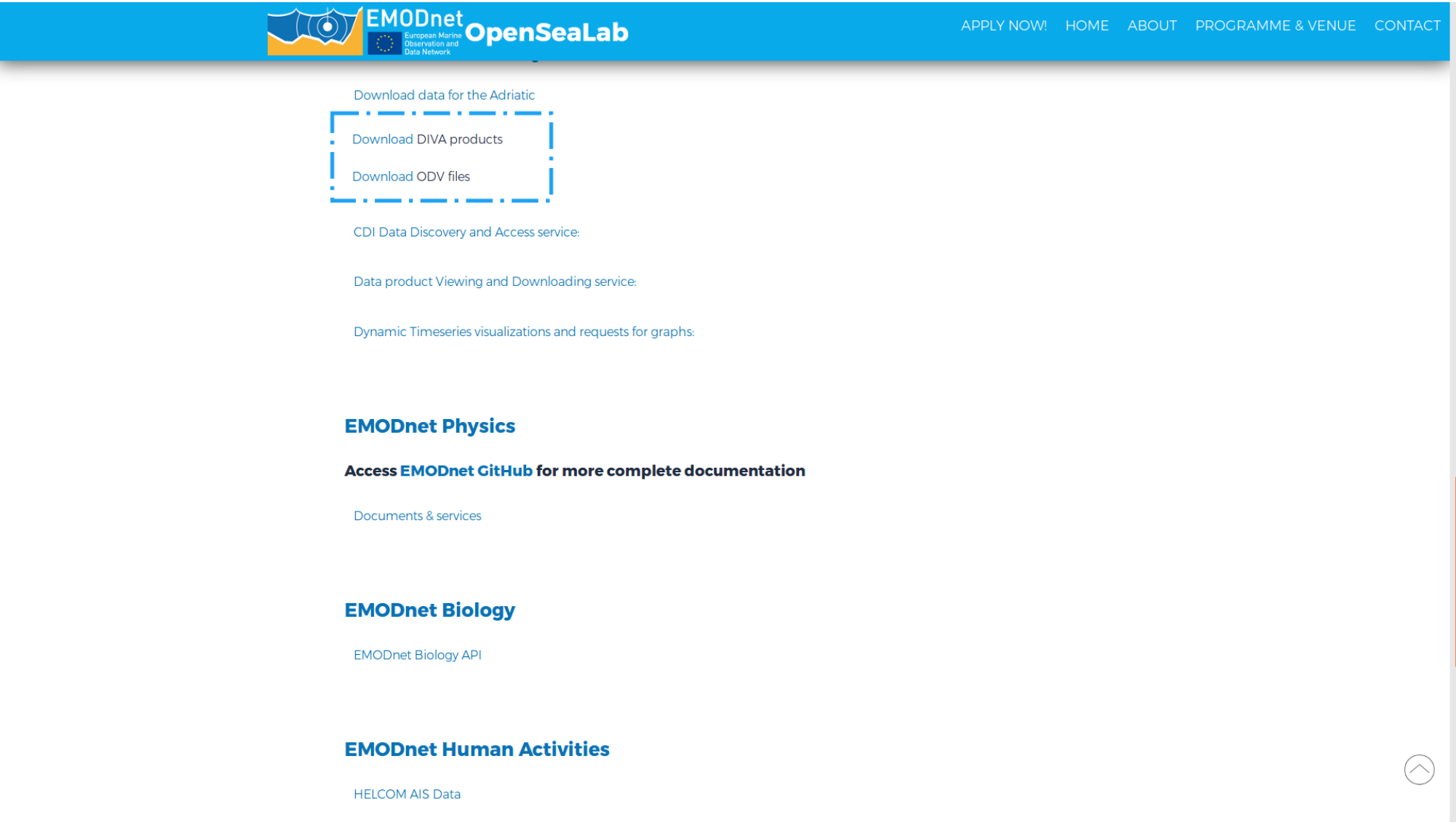
EMODnet Physics
Access EMODnet GitHub for more complete documentation
Documents & services
EMODnet Biology
EMODnet Biology API
EMODnet Human Activities
HELCOM AIS Data
Data and Web Services

Data access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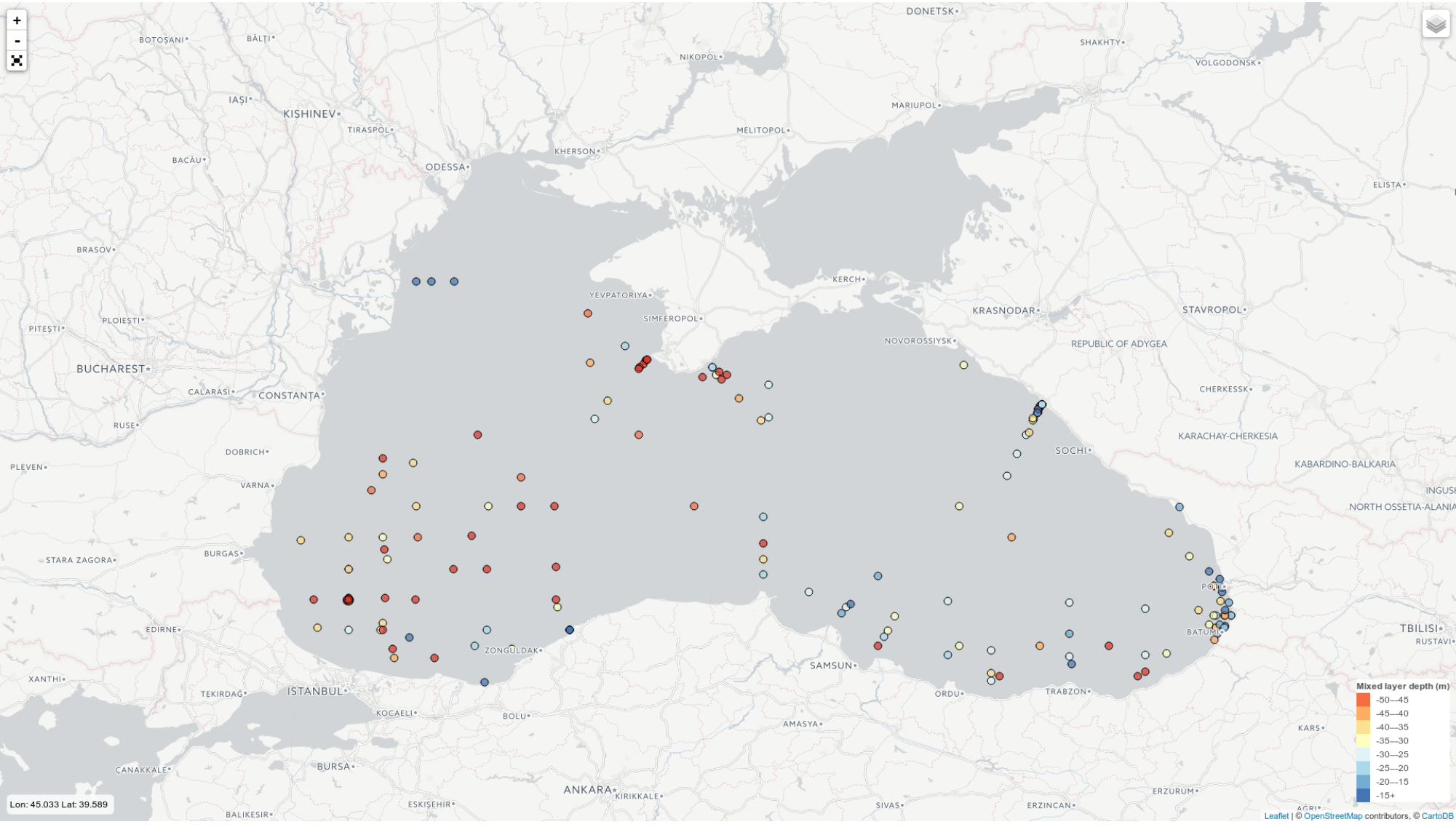
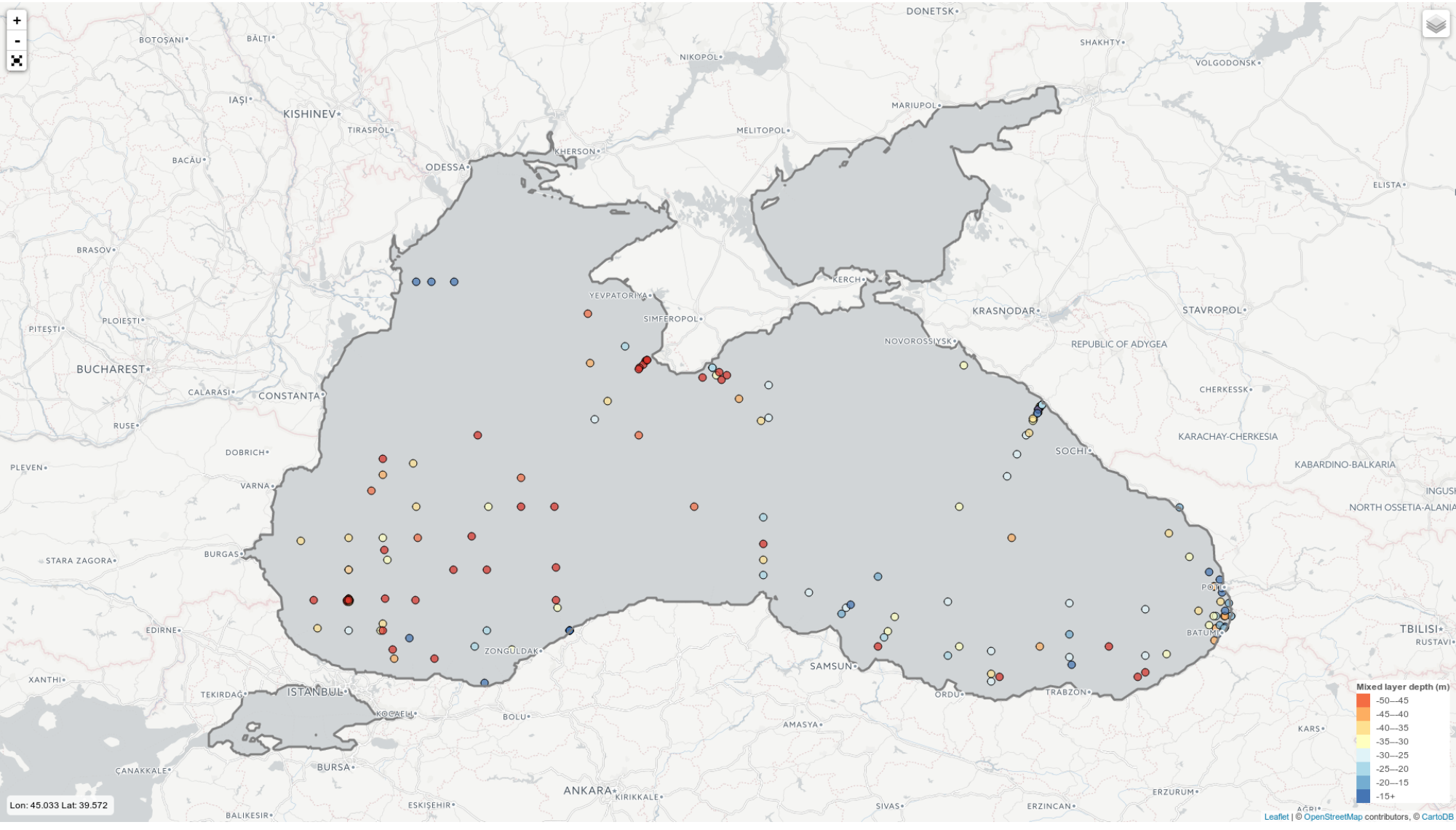
EMODnet Physics
Access EMODnet GitHub for more complete documentation
Documents & services
EMODnet Biology
EMODnet Biology API
EMODnet Human Activities
HELCOM AIS Data

What are the ”Diva products”?

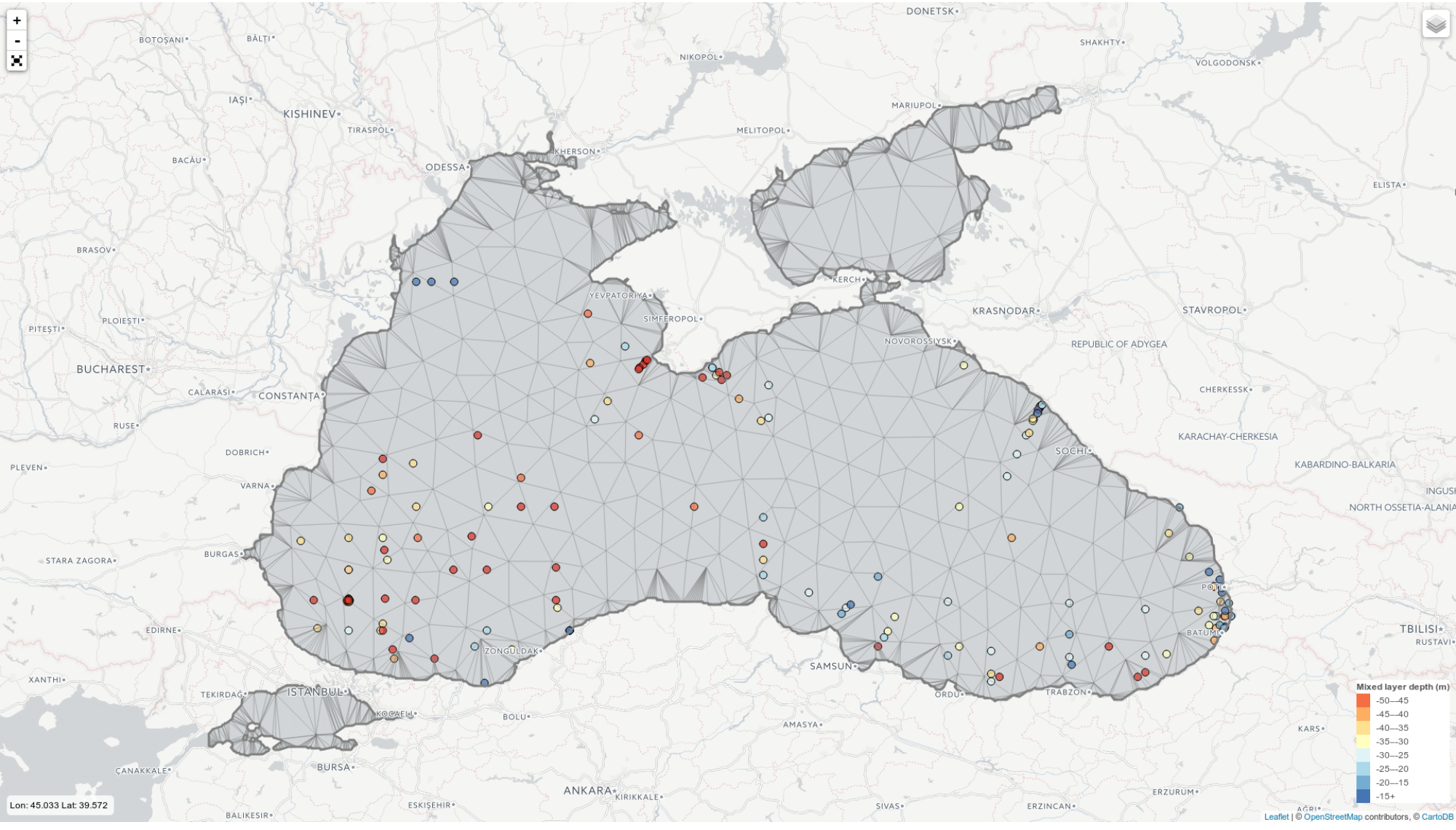
Diva: from in situ data to gridded fields



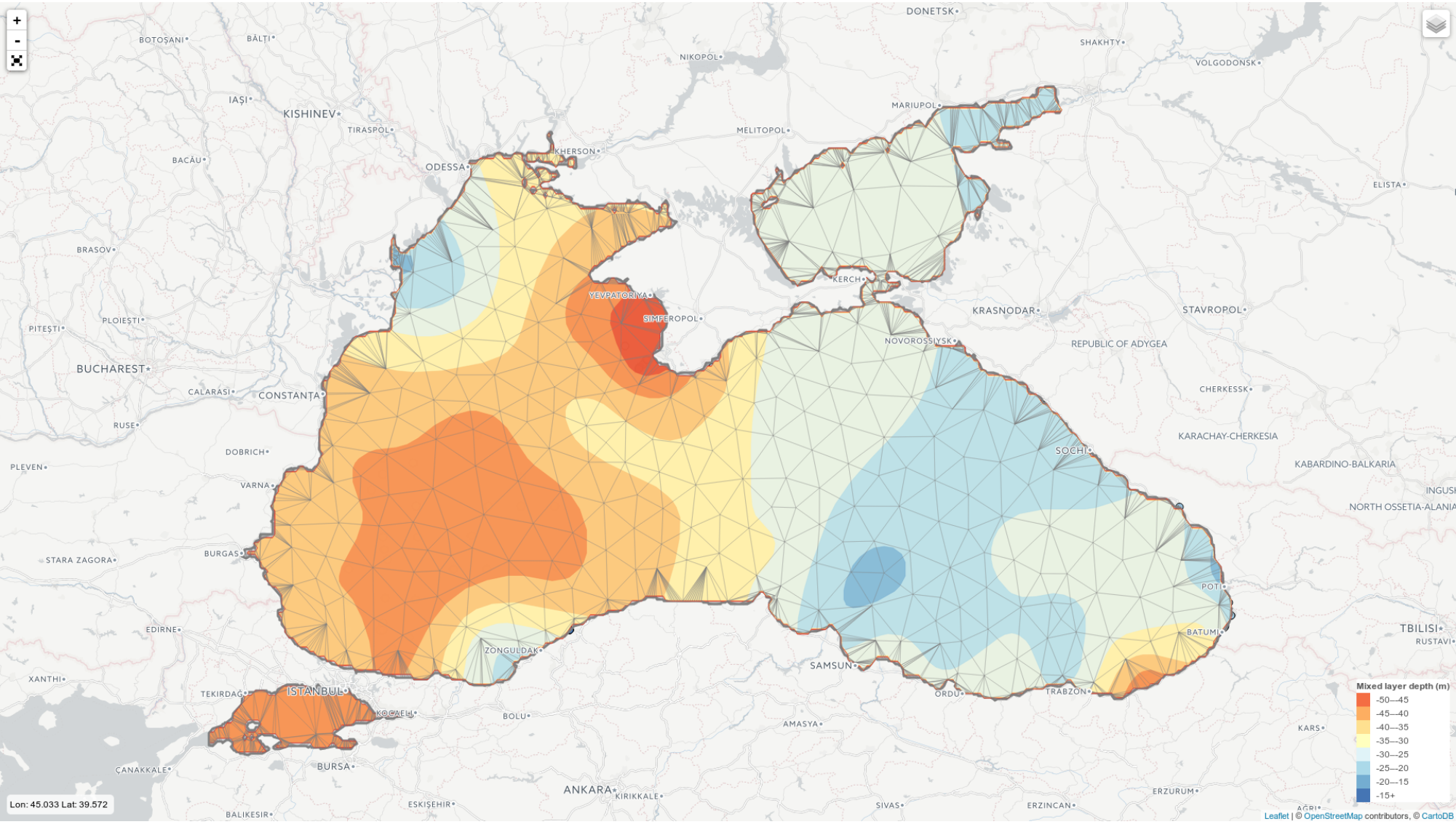
Diva: from in situ data to gridded fields



Diva: from in situ data to gridded fields



Diva: from in situ data to gridded fields



https://github.com/gher-ulg/DIVA

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What is the netCDF format of the files?

NetCDF

NetCDF = network Common Data Form (not format!)
= software libraries and self-describing, machine-independent data formats

NetCDF

Language	Library
python	https://github.com/Unidata/netcdf4-python
Fortran	https://github.com/Unidata/netcdf-fortran
C	https://github.com/Unidata/netcdf-c
Java	https://github.com/Unidata/thredds
JS	https://www.npmjs.com/package/netcdf4
GNU Octave	https://github.com/Alexander-Barth/octave-netcdf
julia	https://github.com/meggart/NetCDF.jl
Matlab	Native support since R2010b

NetCDF tools

ncdump : generates a text representation of a netCDF dataset on standard output

ncview : visual browser for netCDF files

nco (netCDF operators): toolkit to manipulate and analyze data stored in netCDF

What do you find inside the directory?

```
$ tree -L 3
.
 autumn
      Water_body_ammonium.4Danl.nc
      Water_body_chlorophyll-a.4Danl.nc
      Water_body_dissolved_oxygen_concentration.4Danl.nc
      Water_body_nitrate.4Danl.nc
      Water_body_nitrite.4Danl.nc
      Water_body_pH.4Danl.nc
      Water_body_phosphate.4Danl.nc
      Water_body_silicate.4Danl.nc
      Water_body_total_nitrogen.4Danl.nc
      Water_body_total_phosphorus.4Danl.nc
 spring
      Water_body_ammonium.4Danl.nc
      Water_body_chlorophyll-a.4Danl.nc
      Water_body_dissolved_oxygen_concentration.4Danl.nc
      Water_body_nitrate.4Danl.nc
  ...
 summer
    ...
```

Directory structure

1. One directory per season: winter = January-March
   spring = April-June
   summer = July-September
   automn = October-December
2. One file per variable: ammonium, chlorophyll, oxygen, nitrate, nitrite, pH, phosphate, silicate, nitrogen

More resources

https://github.com/gher-ulg/EMODnet-Chemistry

Reading, processing and plotting netCDF files:
Python code

Accessing EMODnet Chemistry product using OPeNDAP:
Julia code

Working with Web Map Service (WMS):
Julia code