



DATA
TERRA



ODATIS

STAC

Exemple du catalogue CMEMS

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Introduction

1. Hiérarchie

- STAC Catalogue = CMEMS
- STAC Collection = CMEMS Product
- STAC Item = CMEMS Dataset / datacube (in most cases, dataset = datacube, but not in all: in-situ / static datasets could have multiple datacubes)
- STAC Asset = entry-point for the data (URLs for Serverless Native, Serverless ARCO time-series, Serverless ARCO geo-series, Serverless ARCO downsampled4, downsampled8...)

Introduction

2. Accès via Browser

Voici l'adresse du catalogue STAC CMEMS:

<https://s3.waw3-1.cloudferro.com/mdl-metadata/metadata/catalog.stac.json>

Il est possible de visualiser le catalogue via le browser suivant:

<https://radianteearth.github.io/stac-browser/#/?language=fr>

STAC Catalogue

STAC Catalogue =

<https://s3.waw3-1.cloudferro.com/mdl-metadata/metadata/catalog.stac.json>

The screenshot shows the Copernicus Marine Data Store interface. At the top, there's a header with 'Copernicus Marine Data Store', a 'Parcourir' button, and links for 'ob Source', 'Partager', and 'Langue: Français'. Below the header is a 'Description' section stating 'Data from the Copernicus Marine Data Store, in Analysis-Ready, Cloud-Optimised (ARCO) format.' A 'Catalogues' section shows '284' items with filters for 'Toutes', 'Liste', and sorting options. A search bar is present with the text 'Filtrer les catalogues par titre, description ou mots-clés'. Two catalog entries are highlighted with a red box:

- Antarctic Monthly Sea Ice Extent from Observations Reprocessing**
DEFINITION Sea Ice Extent (SIE) is defined as the area covered by sufficient sea ice, that is the area of ocean having more than 15% Sea Ice Concentration (SIC). SIC is the...
01/01/1978 00:00:00 UTC - 01/12/2022 00:00:00 UTC
- Mediterranean Sea- In-Situ Near Real Time Observations**
Mediterranean Sea - near real-time (NRT) in situ quality controlled observations, hourly updated and distributed by INSTAC within 24-48 hours from acquisition in average DOI...
28/01/2024 00:00:00 UTC - 10/10/2024 18:16:00 UTC

Ici on retrouve l'ensemble des Collections, c'est à dire l'ensemble des produits CMEMS.

Pour l'exemple on utilise le produit :
**OCEANCOLOUR_GL
O_BGC_L3_MY_009_
103**

STAC Collection

STAC Collection =

https://s3.waw3-1.cloudferro.com/mdl-metadata/metadata/OCEANCOLOUR_GLO_BGC_L3_MY_009_103/product.stac.json

Global Ocean Colour (Copernicus-GlobColour), Bio-Geo-Chemical, L3 (daily) Source Partager Langue: Français

dans Copernicus Marine Data Store En haut Parcourir

Description

For the **Global Ocean Satellite Observations**, ACRI-ST company (Sophia Antipolis, France) is providing **Bio-Geo-Chemical (BGC)** products based on the **Copernicus-GlobColour** processor.

- Upstreams: SeaWiFS, MODIS, MERIS, VIIRS-SNPP & JPSS1, OLCI-S3A & S3B for the "multi" products, and S3A & S3B only for the "olci" products.
- Variables: Chlorophyll-a (CHL), Phytoplankton Functional types and sizes (PFT), Suspended Matter (SPM), Secchi Transparency Depth (ZSD), Diffuse Attenuation (KD490), Particulate Backscattering (BBP), Absorption Coef. (CDM) and Reflectance (RRS).
- Temporal resolutions: daily.

catégorie

- oceanographic-geographical-features
- satellite-observation
- mass-concentration-of-chlorophyll-a-in-sea-water
- surface-ratio-of-upwelling-radiance-emerging-from-sea-water-to-downwelling-radiative-flux-in-air
- volume-attenuation-coefficient-of-downwelling-radiative-flux-in-sea-water
- secchi-depth-of-sea-water
- mass-concentration-of-diatoms-expressed-as-chlorophyll-in-sea-water
- mass-concentration-of-pico-phytoplankton-expressed-as-chlorophyll-in-sea-water
- volume-absorption-coefficient-of-radiative-flux-in-sea-water-due-to-dissolved-organic-matter-and-non-algal-particles
- volume-backscattering-coefficient-of-radiative-flux-in-sea-water-due-to-particles
- mass-concentration-of-dinophytes-expressed-as-chlorophyll-in-sea-water
- mass-concentration-of-nanophytes-expressed-as-chlorophyll-in-sea-water
- mass-concentration-of-mesozooplankton-and-macrozooplankton-expressed-as-chlorophyll-in-sea-water

Éléments 11

Ordre croissant Ordre décroissant

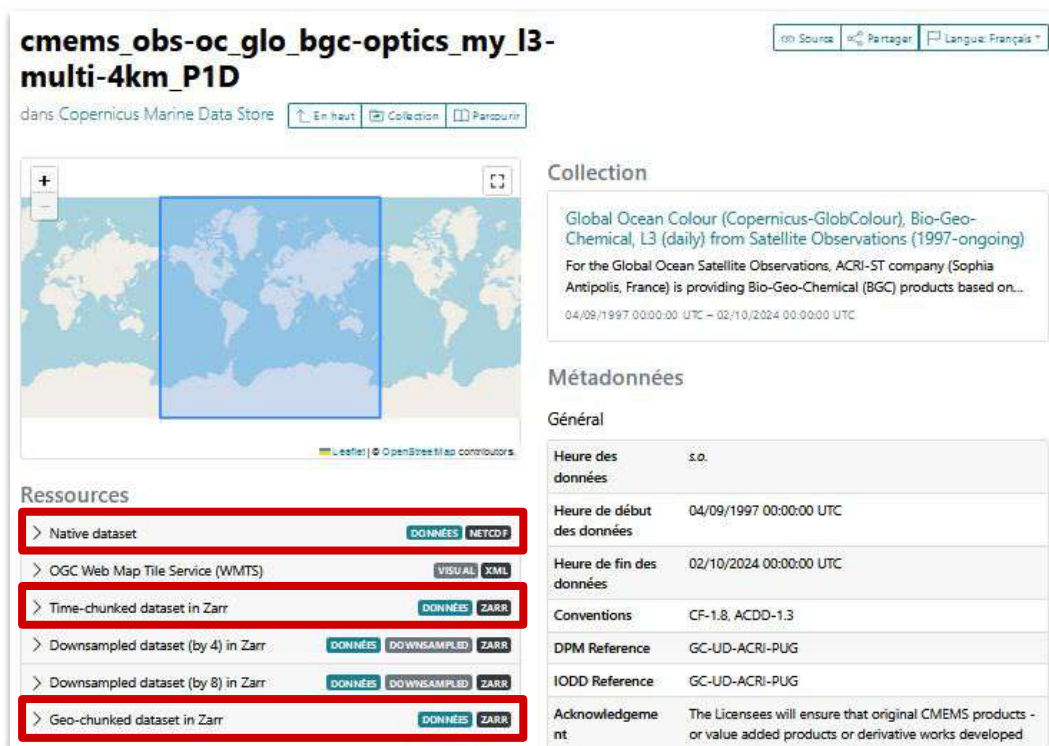
cmems_obs-oc_glo_bgc-optics_my_l3-multi-4km_P1D NetCDF Zarr 04/09/1997 00:00:00 UTC - 02/10/2024 00:00:00 UTC	cmems_obs-oc_glo_bgc-reflectance_my_l3-multi-4km_P1D NetCDF Zarr 04/09/1997 00:00:00 UTC - 02/10/2024 00:00:00 UTC
cmems_obs-oc_glo_bgc-plankton_my_l3-multi-4km_P1D NetCDF Zarr 04/09/1997 00:00:00 UTC - 02/10/2024 00:00:00 UTC	cmems_obs-oc_glo_bgc-reflectance_my_l3-olci-300m_P1D_202211 NetCDF 01/01/1970 00:00:00 UTC
cmems_obs-oc_glo_bgc-plankton_my_l3-multi-4km_P1D NetCDF Zarr 04/09/1997 00:00:00 UTC - 01/10/2024 00:00:00 UTC	cmems_obs-oc_glo_bgc-reflectance_my_l3-olci-4km_P1D NetCDF Zarr 25/04/2016 00:00:00 UTC - 02/10/2024 00:00:00 UTC

Ici on retrouve l'ensemble des Items, c'est à dire l'ensemble des datasets du produits CMEMS.

STAC Item

STAC Item =

https://s3.waw3-1.cloudferro.com/mdl-metadata/metadata/OCEANCOLOUR_GLO_BGC_L3_MY_009_103/cmems_obs-oc_glo_bgc-optics_my_l3-multi-4km_P1D_202311/dataset.stac.json



cmems_obs-oc_glo_bgc-optics_my_l3-multi-4km_P1D

dans Copernicus Marine Data Store

Collection

Global Ocean Colour (Copernicus-GlobColour), Bio-Geo-Chemical, L3 (daily) from Satellite Observations (1997-ongoing)

For the Global Ocean Satellite Observations, ACRI-ST company (Sophia Antipolis, France) is providing Bio-Geo-Chemical (BGC) products based on...

04/09/1997 00:00:00 UTC – 02/10/2024 00:00:00 UTC

Métadonnées

Général

Heure des données	s.o.
Heure de début des données	04/09/1997 00:00:00 UTC
Heure de fin des données	02/10/2024 00:00:00 UTC
Conventions	CF-1.8, ACDD-1.3
DPM Reference	GC-UD-ACRI-PUG
IODD Reference	GC-UD-ACRI-PUG
Acknowledgement	The Licensees will ensure that original CMEMS products - or value added products or derivative works developed

Ressources

> Native dataset	DONNÉES	NETCDF	
> OGC Web Map Tile Service (WMTS)	VISUAL	XML	
> Time-chunked dataset in Zarr	DONNÉES	ZARR	
> Downsampled dataset (by 4) in Zarr	DONNÉES	DOWNSAMPLED	ZARR
> Downsampled dataset (by 8) in Zarr	DONNÉES	DOWNSAMPLED	ZARR
> Geo-chunked dataset in Zarr	DONNÉES	ZARR	

Ici on retrouve l'ensemble des Assets, c'est à dire l'ensemble des endpoints / url vers les fichiers de données.

Par exemple :

- NetCDF,
- TimeChunked,
- GeoChunked
- ...

STAC Asset

STAC Asset =

https://s3.waw3-1.cloudferro.com/mdl-arco-time-042/arco/OCEANCOLOUR_GLO_BGC_L3_MY_009_103/cmems_obs-oc_glo_bgc-optics_my_l3-multi-4km_P1D_202311/timeChunked.zarr

L'asset est le niveau le plus fin, il correspond à un endpoint vers un des fichiers de données.

Copernicus Marine Toolbox

Le catalogue STAC est intégré dans le client Copernicus Marine Toolbox qui permet de parcourir le catalogue, puis grâce aux endpoints de faire du subsettings via les produits Zarr ou bien récupérer les fichiers NetCDF natif.

```
import copernicusmarine

copernicusmarine.login()

catalogue = copernicusmarine.describe(include_datasets=True)
dataset = catalogue['products'][1]['datasets'][0]

subset = copernicusmarine.subset(
    dataset_id="cmems_mod_glo_phy-cur_anfc_0.083deg_P1D-m",
    variables=["uo", "vo"],
    minimum_longitude=50,
    maximum_longitude=90,
    minimum_latitude=0,
    maximum_latitude=25,
    start_datetime="2022-01-01T00:00:00",
    end_datetime="2022-01-31T23:59:59",
    minimum_depth=0,
    maximum_depth=30,
    output_filename = "CMEMS_Indian_currents_Jan2022.nc",
    output_directory = "copernicus-data"
```



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Merci de votre attention



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