

# In-Situ products overview

## #MarineData4SouthAmerica

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Puertos del Estado



GOBIERNO DE ESPAÑA

MINISTERIO DE TRANSPORTES Y MOVILIDAD SOSTENIBLE

Puertos del Estado



*On behalf of the Copernicus Marine In Situ Component team*



Copernicus Marine Service



PROGRAMME OF THE EUROPEAN UNION



MERCATOR OCEAN INTERNATIONAL



nLogin

# In-Situ data

One of the marks of human civilisation is the desire to observe and record the environment around us

In-situ ocean observations are crucial for understanding the ocean, improving the quality of models and forecasts, validating satellite data...

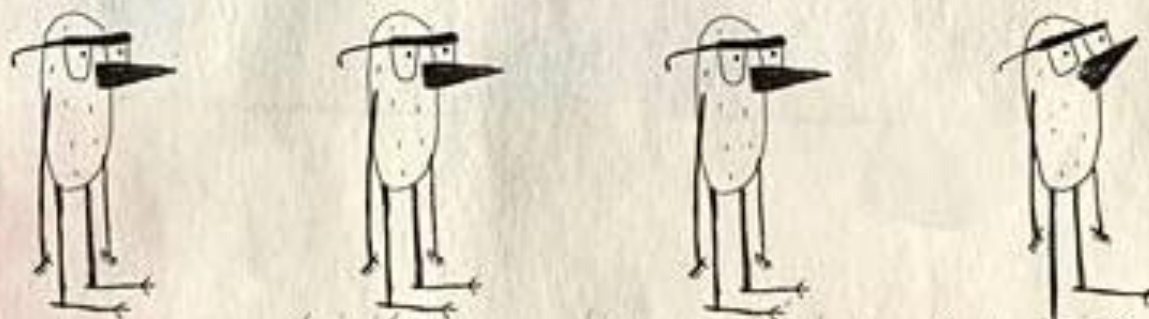
**The field truth that is closest to reality**



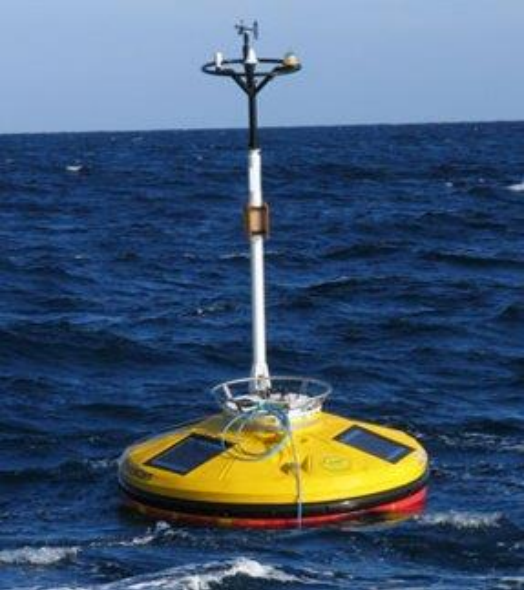
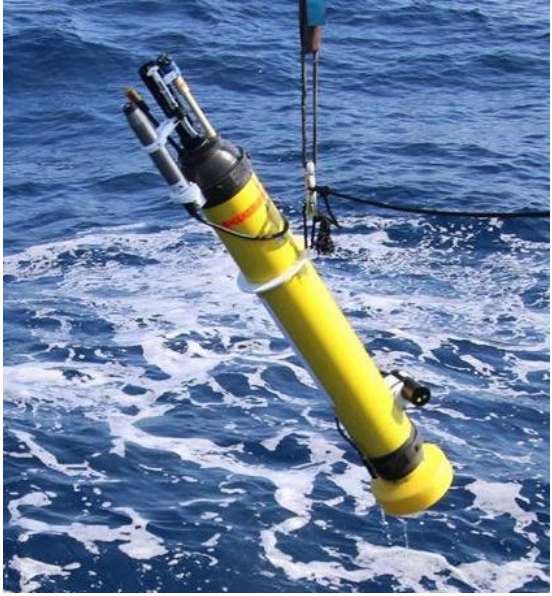
# In-Situ Component

She was **PINK** and everyone else was white.

In-Situ Products are the  
"pink monster" in  
Copernicus Marine



# In-Situ stations



# In-Situ organisation



**Management & Operations**  
7 Regions

**Scientific Expertise**  
Cross Cutting

**System Evolution**

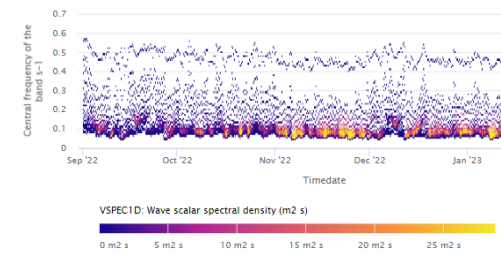
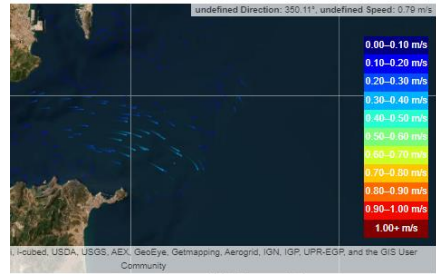
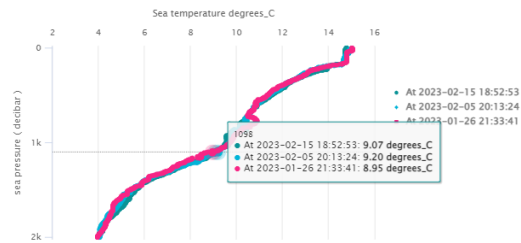
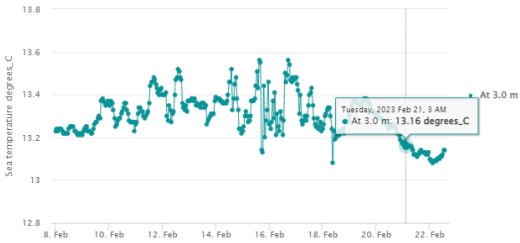


Consiglio Nazionale delle Ricerche

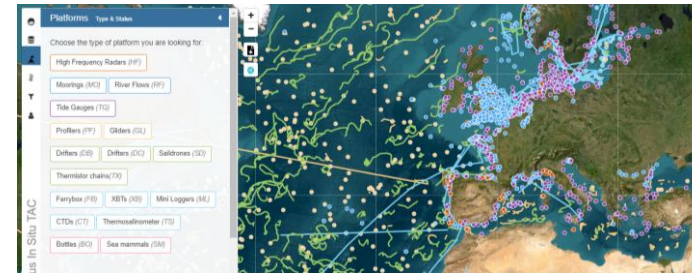


# In-Situ products

- Not homogeneous: time series, profiles, grids (HF radars), wave spectra, trajectories.



- Own site:
  - Web site
  - Viewer
  - KPIs



- Files by platform

Nombre de archivo	Tamaño d...	Tipo de arc...	Última modific...	Permisos	Propietario/...
IR_TS_MO_AMETSBerthWaveBuoy_20230123.nc	55.048	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp
IR_TS_MO_Barcelona-coast-buoy_20230123.nc	82.375	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp
IR_TS_MO_Bilbao-station_20230123.nc	88.903	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp
IR_TS_MO_Ceuta-coast-buoy_20230123.nc	82.360	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp
IR_TS_MO_Donostia-buoy_20230123.nc	127.896	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp
IR_TS_MO_Gijon-coast-buoy_20230123.nc	82.360	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp
IR_TS_MO_LasPalmas-coast-buoy_20230123.nc	82.378	Archivo NC	26/01/2023 1:2...	-rw-rw-r--	ftp ftp

\* Exceptions:

- Objective Analysis (OA)
- EasyCORA and CORA (SST MY)



# In-Situ products

Product family	MY (Multi-year)	MY-NRT (Near-real-time)
Update	Every 6 months	Every hour
Scope	Global	Global and regional
Quality Mode	Delayed mode	Delayed mode + Real Time (when delayed mode is not available)
Target	One variable	One or more variables
Products	INSITU_GLO_BGC_CARBON_DISCRETE_MY_013_050 INSITU_GLO_BGC_DISCRETE_MY_013_046 INSITU_GLO_PHY_SSH_DISCRETE_MY_013_053 INSITU_GLO_PHY_TS_DISCRETE_MY_013_001 INSITU_GLO_PHY_TS_OA_MY_013_052 INSITU_GLO_PHY_UV_DISCRETE_MY_013_044 INSITU_GLO_WAV_DISCRETE_MY_013_045	INSITU_ARC_PHYBGCWAV_DISCRETE_MYNRT_013_031 INSITU_BAL_PHYBGCWAV_DISCRETE_MYNRT_013_032 INSITU_BLK_PHYBGCWAV_DISCRETE_MYNRT_013_034 INSITU_IBI_PHYBGCWAV_DISCRETE_MYNRT_013_033 INSITU_MED_PHYBGCWAV_DISCRETE_MYNRT_013_035 INSITU_NWS_PHYBGCWAV_DISCRETE_MYNRT_013_036 <b>INSITU_GLO_PHYBGCWAV_DISCRETE_MYNRT_013_030</b> INSITU_GLO_PHY_TS_OA_NRT_013_002 INSITU_GLO_PHY_UV_DISCRETE_NRT_013_048

Documents associated with each product:

- **PUM** Product User Manual
- **QuID** Quality Information Document

Other documents (In Situ TAC): Format Manual, Parameters List, Useful Code...

<http://www.marineinsitu.eu/documentation/>

# In-Situ access

**Servicio de Vigilancia Marina Copernicus**  
 Proporcion de datos y servicios marinos gratuitos y abiertos para facilitar la aplicación de la política marina, apoyar el crecimiento azul y la innovación científica.

**Acesso a los datos**

- OCEANO PRODUCTOS**  
 Un catalogo sólido de datos del océano para descargar o ver datos que incluyen hindcast, nowcast y previsiones.
- OCEANO INFORME DEL ESTADO**  
 Extenso análisis anual sobre el estado de los océanos a lo largo de casi 20 años y eventos anuales graves/notables.
- OCEANO INDICADORES DE MONITORIZACIÓN**  
 Variables esenciales de la monitorización de la salud del océano del último cuarto de siglo.
- OCEANO VISUALIZACIÓN**  
 Sumergirse en nuestros océanos digitales en 4D a través de nuestras 3 herramientas de visualización para usuarios principiantes, intermedios y avanzados.

**Copernicus Marine Data Store**  
**Global Ocean- In-Situ Near-Real-Time Observations**  
 INSITU\_GLO\_PHYBGCWAV\_DISCRET...\_013\_030  
 In-situ  
 Global  
 Since 1 Jan 1990, instantaneous  
 Oxygen, plankton, salinity, sea surface height, temperature, velocity, wave

**View product**

**SOURCE**  
 Numerical models 17  
 In-situ observations 56  
 Satellite observations 18

**Global Ocean- In-Situ Near-Real-Time Observations**

**Data access**

**Global observ**  
 24-48 h mainly EGO) at

**Use cases**  
 Global Turbulence Array  
 Supporting European ocean acidosis and pH indicator  
 Research for Oceanographic systems implementation

**Classification**  
 Full name: Global Ocean- In-Situ Near-Real-Time Observations  
 Product ID: INSITU\_GLO\_PHYBGCWAV\_DISCRET\_MNRT\_013\_030  
 Source: Global Ocean - Lat-90° to 90° - Lon-180° to 180°  
 Temporal extent: Since 1 Jan 1990  
 Temporal resolution: Instantaneous  
 Processing variables:  
 Level 2: Direction of surface current (U10 - Mean concentration of chlorophyll a in sea water (Chl10 - Mean of depth-weighted chlorophyll concentration (COC) - Sea surface wind from direction (UWD10 - Sea surface wind mean period (SWP10 - Sea surface wave significant height (SWH10 - Sea water spectral density (S - Sea water speed (U10 - Sea temperature (T10 - Water surface height above reference datum (SSH10 - Tides)) - Profile - Point  
 Base metadata: Conservation & preservation - Climate & Environment - Policy & Governance - Science Information - External metadata & API/URL - Coastal services - Information - Natural resources & energy - Trade & marine navigation  
 Data-investigation/manager: NAOCDA  
 Normat: NAOCDA  
 Originating centre: (Internal) France  
 Last metadata update: 2016-06-06 10:22:22

**File browser**  
 / INSITU\_GLO\_PHYBGCWAV\_DISCRETE\_MNRT\_013\_030 / cmems\_obs-ins\_glo\_phybgcwav\_mnrt\_na\_irr / latest

Select all Clear all Download

- 20240115
- 20240116
- 20240117
- 20240118
- 20240119
- 20240120
- 20240121
- 20240122
- 20240123
- 20240124
- 20240125
- 20240126
- 20240127
- 20240128
- 20240129
- 20240130
- 20240131
- 20240201
- 20240202
- 20240203
- 20240204
- 20240205

**Add layer to map**

**Latest collection**  
 This layer cannot be shown on the map, but you can use the download tool to access the data you need.

Browse the files directly or use other download services.

**Browse files**

cmems\_obs-mob glo bgc-nut-car mynrt irr | 202303  
 This layer cannot be shown on the map, but you can use the download tool to access the data you need.

Show deprecated services\*

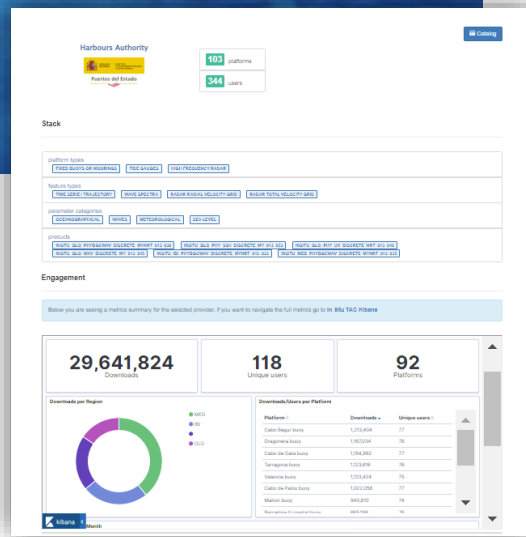
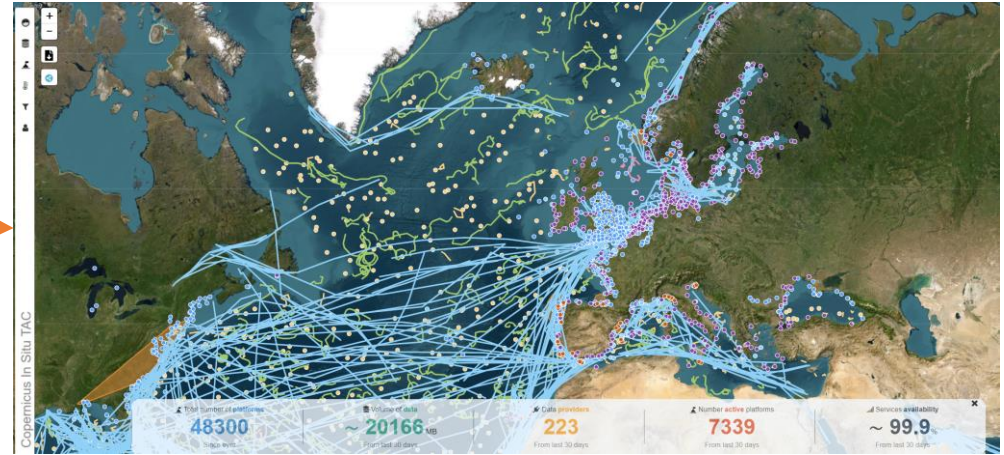
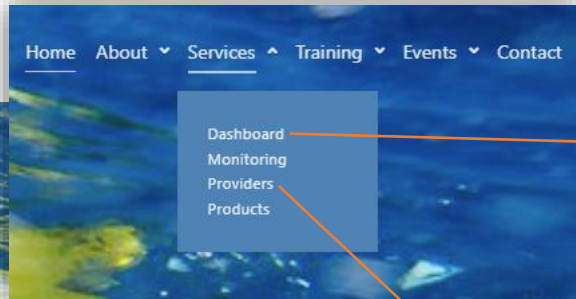
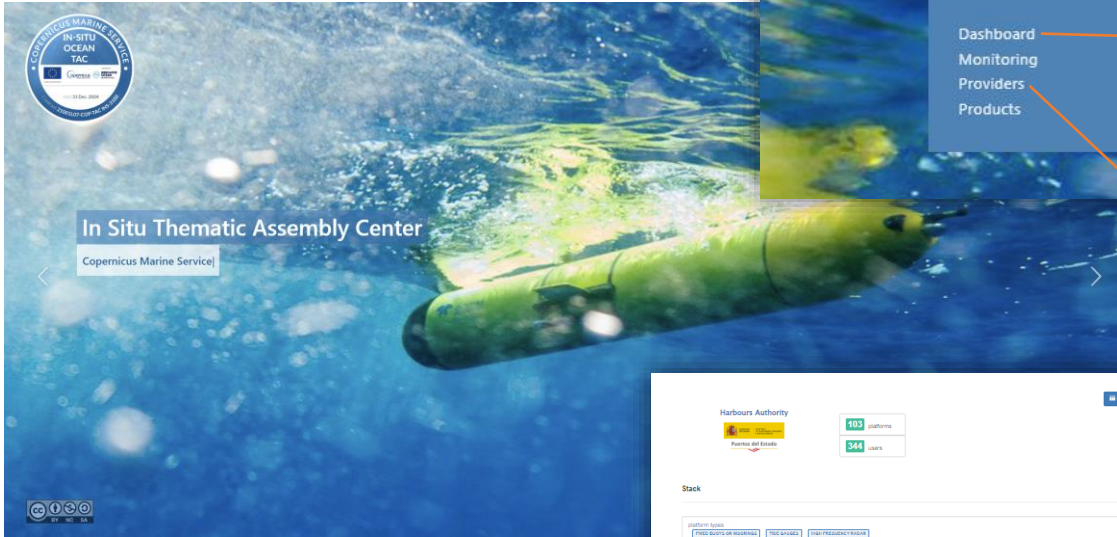
Dataset ID	Subset	File	Map	FTP	ONHDAP	MOTU	ERDDAP	WMS
cmems_obs-ins_glo_phybgcwav_mnrt_na_irr - reference	reference	Available	+	1.9K	-	-	1.9K	-
cmems_obs-ins_glo_phybgcwav_mnrt_na_irr - history	history	Available	+	1.9K	-	-	1.9K	-
cmems_obs-ins_glo_phybgcwav_mnrt_na_irr - monthly	monthly	Available	+	1.9K	-	-	1.9K	-
cmems_obs-ins_glo_phybgcwav_mnrt_pointwise-latest_irr	pointwise-latest	Available	+	1.9K	-	-	1.9K	-
cmems_obs-ins_glo_phybgcwav_mnrt_profile-latest_irr	profile-latest	Available	+	1.9K	-	-	1.9K	-
cmems_obs-ins_glo_phybgcwav_mnrt_trajectory-latest_irr	trajectory-latest	Available	+	1.9K	-	-	1.9K	-

**Metadata**  
 Click here to fetch the most up-to-date raw metadata for this product from the Catalogue Service for the Web (CSW) service.

Download metadata

# In-Situ access II

<https://marineinsitu.eu/>



# In-Situ Dashboard

<https://marineinsitu.eu/dashboard>



# In-Situ Dashboard

<https://marineinsitu.eu/dashboard>



# In-Situ Dashboard

<https://marineinsitu.eu/dashboard>

**Copernicus In Situ TAC**

### Platforms Type & Status

Choose the type of platform you are looking for:

- High Frequency Radars (HF)
- Moorings (MO) River Flows (RF)
- Tide Gauges (TG)
- Profilers (PF) Gliders (GL)
- Drifters (DB) Drifters (DC) Saildrones (SD)
- Thermistor chains (TX)
- Ferrybox (FB) XBTs (XB) Mini Loggers (ML)
- CTDs (CT) Thermosalinometer (TS)
- Bottles (BO) Sea mammals (SM)

Filter also by status of the platform:

- Active (Recent Data)
- Active (No Recent Data)
- Inactive
- Retired

Moorings (MO) Global Last 30 days

### 31005

Lat: -18.87 Lon: -148.65 Active (Recent Data)

MO Fixed buoys or mooring time series TS Time series GL Global

Parameters: DEPH | TEMP | PSAL | ATMP | DENS | DRYT | LINC | PRRT | RELH | SINC | WSPD | WSPE | WSPN | WTODIR

Data from: 2005/09/01 to 2024/02/16  
Available depths: unknown  
Product: INSITU\_GLO\_PHYBGCWAV\_DJSCRETE\_MYNRT\_013\_030  
Dataset: cmems\_obs-ins\_glo\_phybgwav\_mynrt\_na\_irr

Download View

National Oceanic and Atmospheric Administration Pacific Marine Environmental Laboratory PMEL 1440

### Click to download the files from 31005

30 last days of data (daily files)

- GL\_TS\_MO\_31005\_20240120.nc
- GL\_TS\_MO\_31005\_20240121.nc
- GL\_TS\_MO\_31005\_20240122.nc

### Charts from platform 31005

Variable: TEMP Period: Last available Quality Flags: 0 1 2 3 4 5 6 7 8 9

Sea temperature degrees\_C

Thursday, 2024 Feb 15, 12 PM

- At 1.0 m: 28.83 degrees\_C
- At 5.0 m: 28.83 degrees\_C
- At 20.0 m: 28.81 degrees\_C
- At 40.0 m: 28.66 degrees\_C
- At 60.0 m: 27.11 degrees\_C
- At 80.0 m: 25.7 degrees\_C
- At 100.0 m: 25.06 degrees\_C
- At 120.0 m: 24.56 degrees\_C
- At 140.0 m: 24.1 degrees\_C
- At 180.0 m: 22.14 degrees\_C
- At 300.0 m: 14.81 degrees\_C
- At 500.0 m: 9.26 degrees\_C

Platform info: Code: 31005 Source: moored surface buoy Institution: National Oceanic and Atmospheric Administration Pacific Marine Environmental Laboratory (1440) Last observation date: 2024-02-16T12:00:00Z Last latitude: -18.87000 Last longitude: -148.65500

List of files consulted: GL\_TS\_MO\_31005\_20240216, GL\_TS\_MO\_31005\_20240215, GL\_TS\_MO\_31005\_20240214, GL\_TS\_MO\_31005\_20240213, GL\_TS\_MO\_31005\_20240212, GL\_TS\_MO\_31005\_20240211, GL\_TS\_MO\_31005\_20240210

Ok

# In-Situ Dashboard

<https://marineinsitu.eu/dashboard>

**Copernicus In Situ TAC**

**Platforms** Type & Status

Choose the type of platform you are looking for:

- High Frequency Radars (HF)
- Moorings (MO) River Flows (RF)
- Tide Gauges (TG)
- Profilers (PF) Gliders (GL)
- Drifters (DB) Drifters (DC) Saildrones (SD)
- Thermistor chains (TX)
- Ferrybox (FB) XBTs (XB) Mini Loggers (ML)
- CTDs (CT) Thermosalinometer (TS)
- Bottles (BO) Sea mammals (SM)

Filter also by status of the platform:

- Active (Recent Data)
- Active (No Recent Data)
- Inactive
- Retired

Drifters (DB) Global Last 30 days

**6203814** Lat: 22.0233 Lon: 40.5255 Active (Recent Data)

DB Drifting buoy reporting calculated sea water current TS Time series GL Global

Parameters DEPH | ATMS

Data from: 2021/05/01 to 2024/02/19  
Available depths: 0 (meters)  
Product: INSITU\_GLO\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_030  
Dataset: cmems\_obs-ins\_glo\_phybgcwav\_mynrt\_na\_irr

Data: Download View

Met Office, Erieter Met Office 29

**Charts from platform 6203814**

<https://marineinsitu.puertos.es/viewData/?encryptedrequest=i2qiE8Hp6gOMTj9i5ZdMHt/Fw5BL8EGcEHTJ888BEMSL>

Variable: ATMS Period: Last available Go

Quality Flags: 0 1 2 3 4 5 6 7 8 9

entic pressure at sea level hPa At 0.0 m

# In-Situ Dashboard

<https://marineinsitu.eu/dashboard>

The dashboard interface is divided into several sections:

- Left Panel (Copepticus In Situ TAC):**
  - Platforms Type & Status:** A list of platform types with selection buttons: High Frequency Radars (HF), Moorings (MO), River Flows (RF), Tide Gauges (TG), Profilers (PF), Gliders (GL), Drifters (DB), Drifters (DC), Saildrones (SD), Thermistor chains (TX), Ferrybox (FB), XBTs (XB), Mini Loggers (ML), CTDs (CT), Thermosalinometer (TS), Bottles (BO), and Sea mammals (SM).
  - Filter also by status of the platform:** Radio buttons for Active (Recent Data), Active (No Recent Data), Inactive, and Retired.
  - Bottom:** Buttons for Sea mammals (SM), Global, and Last 30 days.
- Map:** A satellite-style map of the Atlantic Ocean with a pink line indicating a track or boundary.
- Charts from platform 9901986:** A window showing a scatter plot of sea temperature (degrees\_C) vs. sea pressure (decibar) for platform 9901986. The plot shows data points from 2024-02-15 to 2024-02-17. A legend on the right lists specific time points for each data point.
- Platform Info (9901986):** A pop-up window showing details for platform 9901986, including its status (Active), parameters (DEPH | TEMP | PSAL), data range (2023/12/24 to 2024/02/17), and available depths (unknown). It includes buttons for Download and View.



CMEMS\_InSituTAC\_subsetOfplatforms.csv  
v  
9,2 KB • Hecho

# In-Situ Dashboard

<https://marineinsitu.eu/dashboard>

Data Parameters & data types

Find here an abstraction of In Situ TAC list of parameters ie: PSAL and CNDC as 'Salinity'. More info at: [Copernicus Marine Service In Situ TAC - Parameter List](#).

- Salinity
- Temperature**
- Currents
- Sea Level
- Waves
- Chlorophyl
- Oxygen
- Carbon
- Meteo

Available data types: Time series (TS), Profiles (PR), Wave Spectra (WS), Total velocities (TV) and Radial velocities (RV). More info about data types at: [More info at: Product User Manual](#).

- Time Series
- Profiles
- Wave Spectra
- Grids (Total velocities)
- Grids (Radial velocities)

- Drifters (DB)
- Temperature
- Global

Last 30 days



### Selection to export...

Current selection:

**Type:** DB,  
**Params-categories:** temperature,  
**Dataset:** cmems\_obs-ins\_glo\_phybgcwav\_mynrt\_na\_irr,  
**Archives:** latest,  
**Bounding Box:** -60.46 -112.63 (southWest) | -40.88 -29.36 (northEast)

**Total number of matching platforms:** 18

Please review your selection before exporting to CSV list the files produced by the above matching platforms.  
 Find [here](#) an example in python for downloading the files on such list find.

Export!
Cancel

Copernicus In Situ TAC

# In-Situ FTP

ftp://nrt.cmems-du.eu/  
ftp://my.cmems-du.eu



Sitio remoto: /Core/INSITU\_IBI\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_033/cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr

- INSITU\_IBI\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_033
  - cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr
    - cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr\_Prev

Nombre de archivo	Tamaño de archivo	Tipo de arc	Última modificación
..			
index_platform.txt	2,8 MB	txt-archivo	19/02/24 15:56:00
index_monthly.txt	25,5 MB	txt-archivo	18/02/24 18:55:00
index_latest.txt	9,3 MB	txt-archivo	19/02/24 15:56:00
index_history.txt	4,0 MB	txt-archivo	17/02/24 12:09:00
monthly		Directorio	23/11/23 18:04:00
latest		Directorio	19/02/24 02:48:00
history		Directorio	24/11/23 12:41:00

Sitio remoto: /Core/INSITU\_IBI\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_033/cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr/monthly/MO

- history
- latest
- monthly
  - BO
  - CT
  - DB
  - FB
  - GL
  - HF
  - ML
  - MO

Nombre de archivo	Tamaño de archivo	Tipo de arc	Última modificación
..			
202401		Directorio	18/02/24 18:13:00
202312		Directorio	08/02/24 18:09:00
202311		Directorio	08/02/24 18:09:00
202310		Directorio	08/02/24 18:09:00
202309		Directorio	08/02/24 18:09:00
202308		Directorio	08/02/24 18:09:00
202307		Directorio	08/02/24 18:09:00
202306		Directorio	08/02/24 18:09:00
202305		Directorio	08/02/24 18:09:00

Nombre de archivo	Tamaño de archivo	Tipo de arc	Última modificación
IR_WS_MO_6100198_202401.nc	289,7 KB	nc-archivo	18/02/24 17:57:00
IR_WS_MO_6100197_202401.nc	191,4 KB	nc-archivo	18/02/24 17:57:00
IR_WS_MO_6100196_202401.nc	286,3 KB	nc-archivo	18/02/24 17:57:00
IR_WS_MO_1300131_202401.nc	286,3 KB	nc-archivo	18/02/24 17:57:00
IR_WS_MO_1300130_202401.nc	282,0 KB	nc-archivo	18/02/24 17:57:00
IR_TS_MO_Tenerife-coast-buoy_202401.nc	210,8 KB	nc-archivo	18/02/24 17:57:00
IR_TS_MO_Tarragona-coast-buoy_202401.nc	209,8 KB	nc-archivo	18/02/24 17:57:00
IR_TS_MO_Tarifa-coast-buoy_202401.nc	213,4 KB	nc-archivo	18/02/24 17:57:00
IR_TS_MO_SmartBayWaveBuoy_202401.nc	178,2 KB	nc-archivo	18/02/24 17:57:00
IR_TS_MO_PasaiaI-coast-buoy_202401.nc	211,9 KB	nc-archivo	18/02/24 17:57:00

Sitio remoto: /Core/INSITU\_IBI\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_033/cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr/history/PF

- cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr
  - history
    - BO
    - CT
    - DB
    - FB
    - GL
    - HF
    - ML
    - MO
    - PF

Nombre de archivo	Tamaño de archivo	Tipo de arc	Última modificación
..			
GL_PR_PF_7901143.nc	55,2 KB	nc-archivo	17/02/24 11:52:00
GL_PR_PF_7901142.nc	55,3 KB	nc-archivo	17/02/24 11:52:00
GL_PR_PF_7901093.nc	249,9 KB	nc-archivo	17/02/24 11:52:00
GL_PR_PF_7901066.nc	138,2 KB	nc-archivo	17/02/24 11:52:00
GL_PR_PF_7901037.nc	558,5 KB	nc-archivo	17/02/24 11:52:00
GL_PR_PF_7900588.nc	2,0 MB	nc-archivo	04/02/24 12:00:00
GL_PR_PF_7900585.nc	4,8 MB	nc-archivo	04/02/24 12:00:00
GL_PR_PF_7900573.nc	645,1 KB	nc-archivo	24/01/24 11:52:00
GL_PR_PF_7900572.nc	600,8 KB	nc-archivo	24/01/24 11:52:00

Sitio remoto: /Core/INSITU\_IBI\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_033/cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr/latest/20240120

- INSITU\_GLO\_PHY\_UV\_DISCRETE\_NRT\_013\_048
- INSITU\_IBI\_PHYBGCWAV\_DISCRETE\_MYNRT\_013\_033
  - cmems\_obs-ins\_ibi\_phybgcwav\_mynrt\_na\_irr
    - history
    - latest
      - 20240120
      - 20240121
      - 20240122
      - 20240123
      - 20240124
      - 20240125
      - 20240126

Nombre de archivo	Tamaño de archivo	Tipo de arc	Última modificación
IR_TS_TG_Dover_20240120.nc	47,0 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_Dingle_20240120.nc	47,0 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_Cromer_20240120.nc	47,0 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_CorunaTG_20240120.nc	50,7 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_Coruna2TG_20240120.nc	51,0 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_CascaisTG_20240120.nc	83,9 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_CartagenaTG_20240120.nc	51,1 KB	nc-archivo	23/01/24 00:47:00
IR_TS_TG_CarbonerastG_20240120.nc	51,2 KB	nc-archivo	23/01/24 00:47:00
IR_TS_TG_Bournemouth_20240120.nc	47,0 KB	nc-archivo	23/01/24 00:48:00
IR_TS_TG_BonanzatG_20240120.nc	50,7 KB	nc-archivo	23/01/24 00:47:00



# In-Situ Files

**NEW**

Nov23 release:

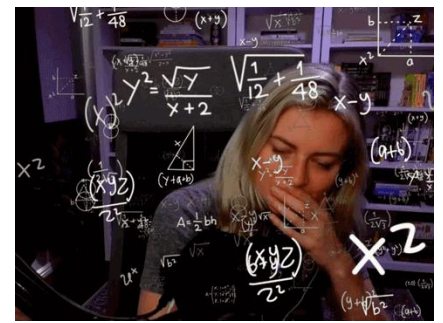
## index\_latest.txt

```
# Title : in-situ files catalog
# Description : catalog of available in-situ files
# Project : Copernicus Marine In Situ TAC
# Format version : 1.4
# Date of update : 2023-02-22T15:29:23Z
```

```
#
# product_id,file_name,geospatial_lat_min,geospatial_lat_max,geospatial_lon_min,geospatial_lon_max,
# time_coverage_start,time_coverage_end,institution,date_update,data_mode,parameters
```

```
COP-IR-01,ftp://nrt.cmems-du.eu/Core/INSITU_IBI_PHYBGCWAV_DISCRETE_MYNRT_013_033/cmems_obs-ins_ibi_phybgcwav_mynrt_na_irr/latest/20230125/GL_PR_CT_FNFP_20230125.nc,49.61130,50.63380,0.08955,0.61563,2023-01-25T01:48:19Z,2023-01-25T23:26:03Z,IEO-CSIC Spanish Oceanographic Institute,IFREMER Sismer,Marine Institute (Ireland);BODC British Oceanographic Data Centre Proudman Oceanographic Laboratory - Liverpool,2023-01-27T12:01:09Z,R,PRES TEMP PSAL CNDC FLU2
```

```
COP-IR-01,ftp://nrt.cmems-du.eu/Core/INSITU_IBI_PHYBGCWAV_DISCRETE_MYNRT_013_033/cmems_obs-ins_ibi_phybgcwav_mynrt_na_irr/latest/20230126/GL_PR_CT_FNFP_20230126.nc,50.29114,50.87174,0.45451,1.37376,2....
```



### NetCDF Climate and Forecast (CF) Metadata Conventions

Brian Eaton · Jonathan Gregory · Bob Drach · Karl Taylor · Steve Hankin · Jon Blower · John Caron · Rich Signell · Phil Bentley · Greg Rappa · Heinke Höck · Alison Farnment · Martin Jukes · Martin Raspaud · Randy Horne · Timothy Whiteaker · David Blodgett · Charlie Zender · Daniel Lee · David Hassell · Alan D. Snow · Tobias Kölling · Dave Allured · Aleksandar Jelenak · Anders Meier Soerensen · Lucile Gasthier · Sylvain Herlédan · Version 1.11 Draft, 31 August, 2022

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**9. Discrete Sampling Geometries**

This chapter provides representations for discrete sampling geometries, such as time series, vertical profiles and trajectories. Discrete sampling geometry classes are characterized by a dimensionality that is lower than that of the space-time region that is sampled; discrete sampling geometries are typically "paths" through space-time.

**9.1. Features and feature types**

Each type of discrete sampling geometry (point, time series, profile or trajectory) is defined by the relationships among its spatiotemporal coordinates. We refer to the type of discrete sampling geometry as its **featureType**. The term "feature" refers herein to a single instance of the discrete sampling geometry (such as a single time series). The representation of such features in a CF dataset was supported previously to the introduction of this chapter using a particular convention, which is still supported (but described by section 9.5.1). This chapter describes further conventions which offer advantages of efficiency and clarity for storing a collection of features in a single file. When using these new conventions, the features contained within a collection must always be of the same type; and all the collections in a CF file must be of the same feature type. Future versions of CF may allow mixing of multiple feature types within a file. Table 9.1 presents the feature types covered by this chapter. Details and examples of storage of each of these feature types are provided in Appendix 9a, as indicated in the table.

featureType	Description of a single feature with this discrete sampling geometry	Link
	Form of a data variable containing values defined on a collection of these features	Mandatory space-time coordinates for a collection of these features
point	a single data point (having no implied coordinate relationship to other points)	
timeSeries	a series of data points at the same spatial location with monotonically increasing times	
trajectory	a series of data points along a path through space with monotonically increasing times	
profile	an ordered set of data points along a vertical line at a fixed horizontal position and fixed time	
timeSeriesProfile	a series of profile features at the same horizontal position with monotonically increasing times	
trajectoryProfile	a series of profile features located at points ordered along a trajectory	

```
netcdf IR_TS_MO_Gijon-coast-buoy_20240220 {
dimensions:
    TIME = 7 ;
    DEPTH = 2 ;
    STRLEN = 64 ;
variables:
    double TIME(TIME) ;
    ...
    float DEPH(DEPTH) ;
    DEPH:axis = "Z" ;
    char STATION(STRLEN) ;
    STATION:long_name = "station" ;
    STATION:cf_role = "timeseries_id" ;
    float LATITUDE ;
    LATITUDE:axis = "Y" ;
    float LONGITUDE ;
    LONGITUDE:axis = "X" ;
    float PRECISE_LATITUDE(TIME) ;
    ...
    float PRECISE_LONGITUDE(TIME) ;
    ...
    float VTZA(TIME, DEPTH) ;
    ...
}
```

**Example: timeSeries DSG**  
 LATITUDE & LONGITUDE are scalar. A mooring (by definition) is deployed in a fixed position.

# Thank you very much!

¿Alguna pregunta? Alguma dúvida?

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2-Day Workshop

Session 1 – Products & Use Cases

22 February 3:00 pm (CET)



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