IN SITU TAC - CMEMS

CMEMS IN SITU TAC

Contract IN SITU - TAC
Until April 30 2018

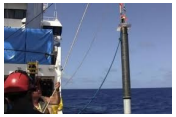
marine.copernicus.eu

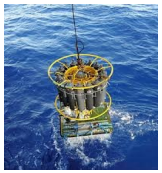
Focus on time series from in-situ observations

In-situ Observations

- Profilers
- CTD/XBT
- Moorings
- Drifters buoys
- Sea gliders
- TSGs
- …

In-situ Measurements



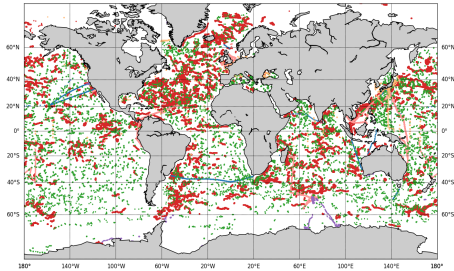




In-situ Measurements

- Regional TAC
- ARGO
- Oceansites
- GTSPP
- Scientific campains
- GOSUD/EOG/..

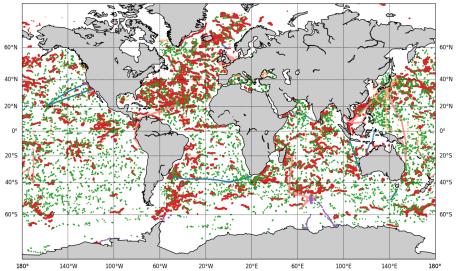
Formating + RT validation

Real Time Dataset



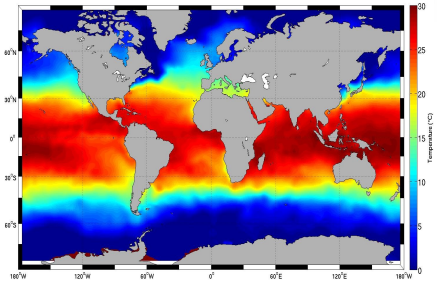
Validation

CORA Dataset

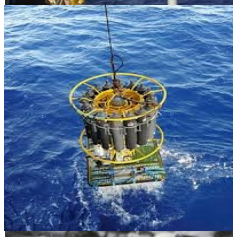


Objective Analysis

CORA OA



Coriolis Real time dataset

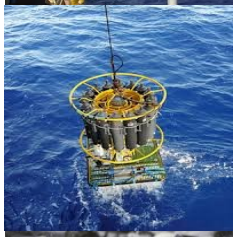


1st step : Data collection

- Real-time : observations of year 2015
  - 2 millions de vertical profiles
  - 89 millions of time-series/trajectory observations (TSG, Ferrybox, buoys, moorings, floats)

- Historical data, status for the end of 2015
  - 16 million vertical profiles, 110 million trajectory points, 45 millions of time-series
  - 5 billion of observations from 80 parameters (temperature, salinity, current, oxygen, chlorophyll, nitrates, turbidity, etc…)
  - 31 000 platforms

Coriolis Real time dataset

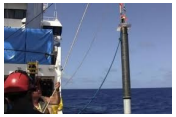



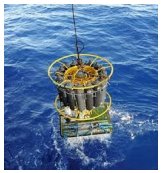


2nd step : Data formating/Real time validation

- Formating
  - NetCDF format
  - Uniform metadata
- Quality control and duplicate check
  - Delete the duplicated profiles
  - Run automatic real time quality control checks
- Synchronization between regions

In-situ Measurements

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Formating + RT validation

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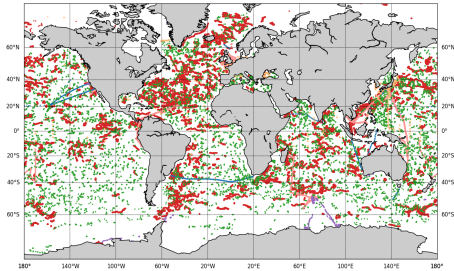

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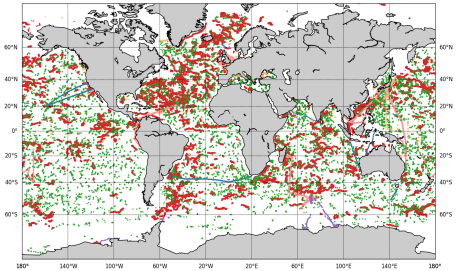

Objective Analysis

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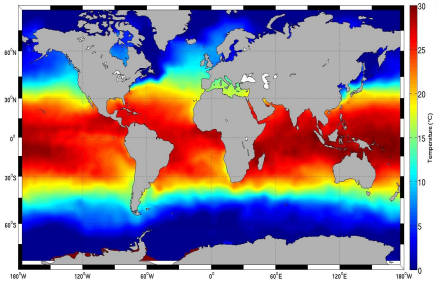

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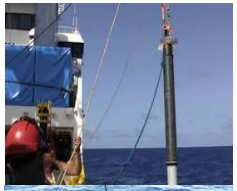
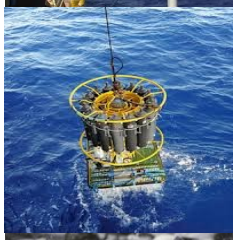
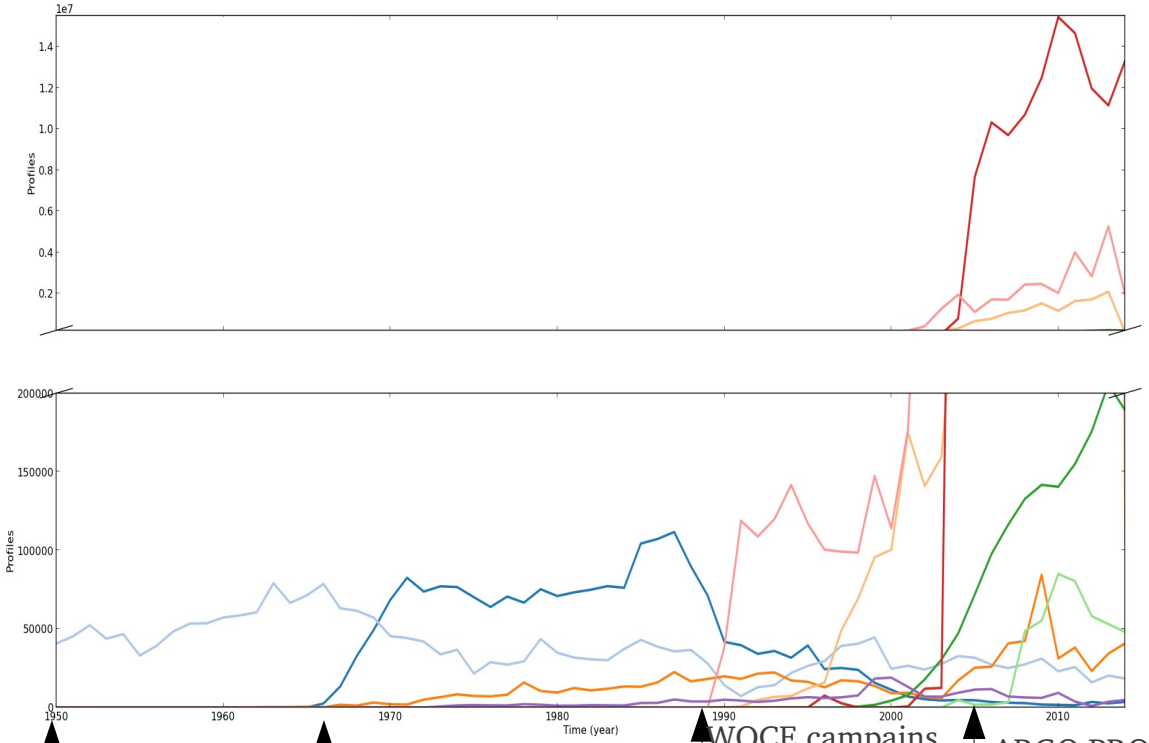





Available data



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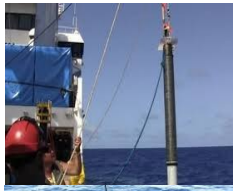
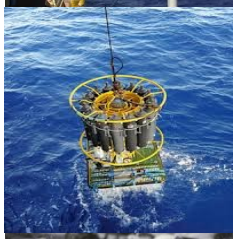
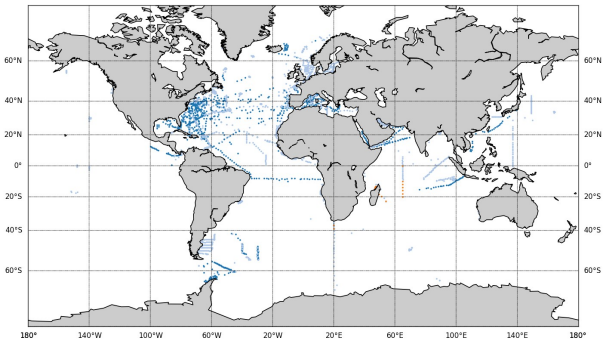
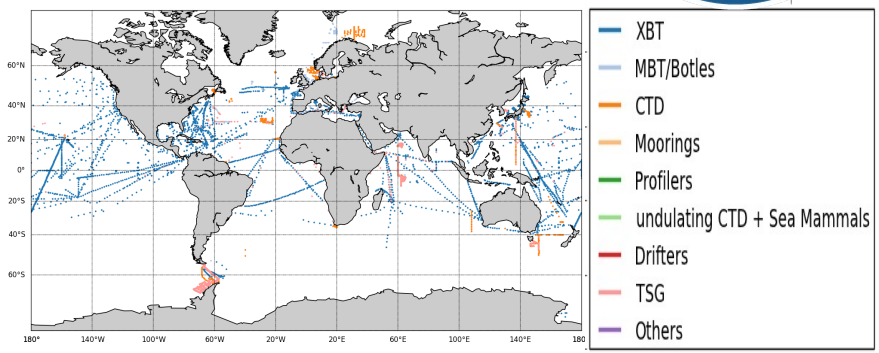





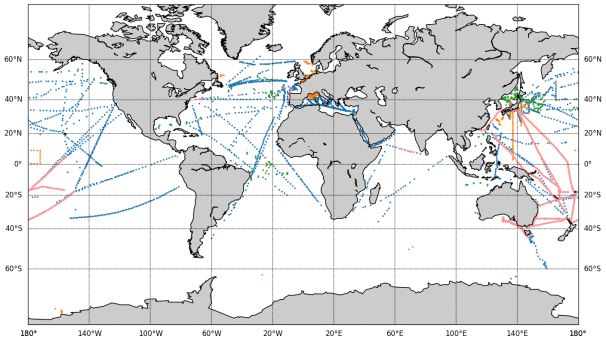
Available data



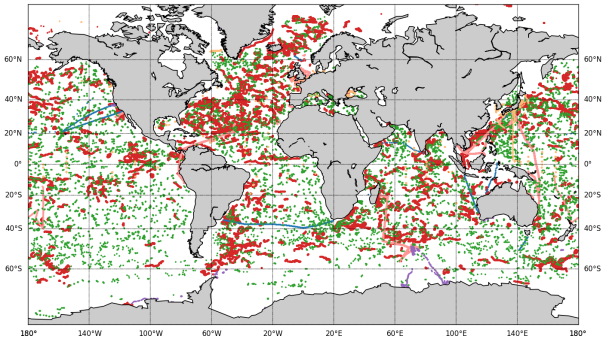
January 1970



January 1990

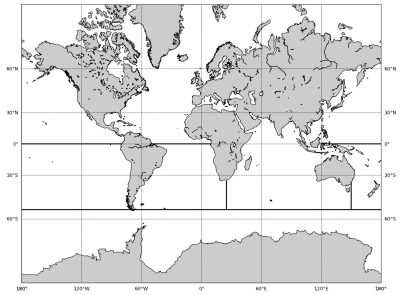


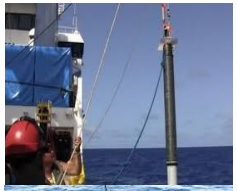
January 2000

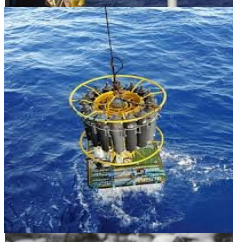


January 2015

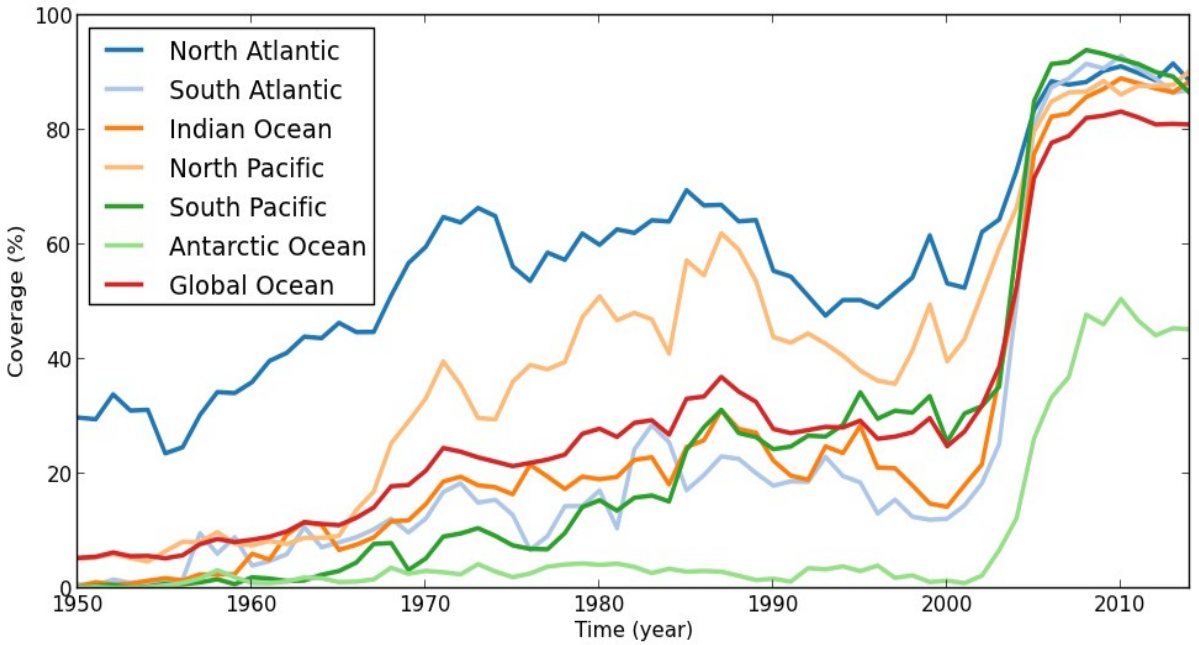
CORA dataset



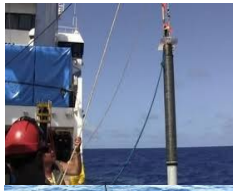
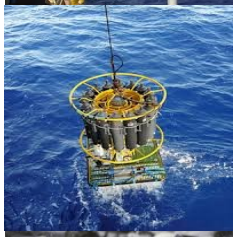




Ocean basin sampling rates



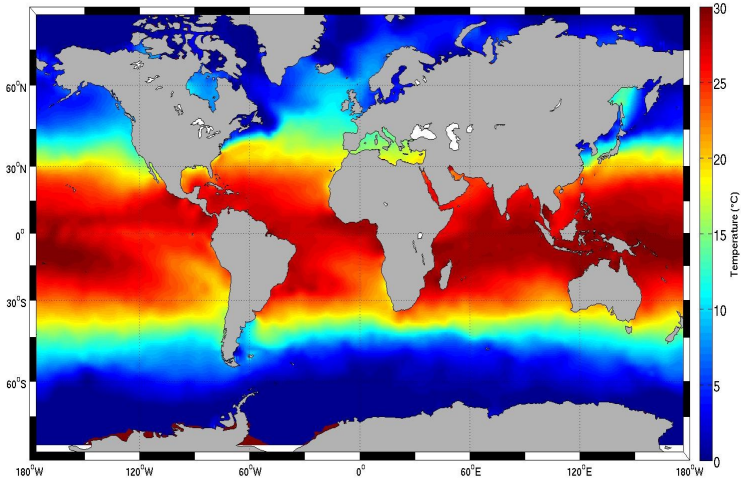
CORA dataset

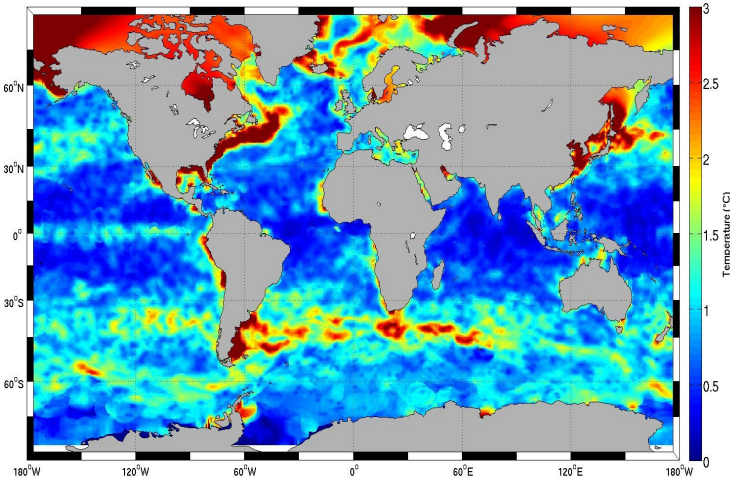


Objective analysis

TEMP, Jan 2013



TEMP Errorbar, Jan 2013



- Objective analysis on a standard 3d grid
- Global coverage, 1990-2015
- 152 vertical levels
- Easy to handle

CORA usage

Global Temperature and salinity datasets

	Provider	Coverage	Validation	Data types	Distributed data
CORA 5.0 	Copernicus CMEMS	1950-2015	Semi – Automatic, all levels, Visual control of suspicious data	Profiles + timeseries	All profiles and timeseries + associated flags
EN.4 	Mettoffice.org	1900-2015	Automatic, all levels	Profiles only	Best profiles + meta profiles + flags
WOD13 	Nodc.noaa.gov	1772-2012	Automatic – standard levels validation only	Profiles + timeseries	All profiles + standard level flags

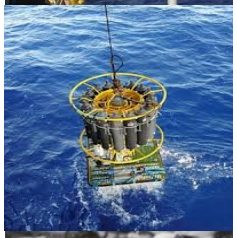
CORA usage

Global temperature and salinity datasets

	Provider	Coverage	Validation	Data types	Distributed data
CORA 5.0	Copernicus CMEMS	1950-2015	Semi – Automatic, all levels, Visual control of suspicious data	Profiles + timeseries	All profiles and timeseries + associated flags

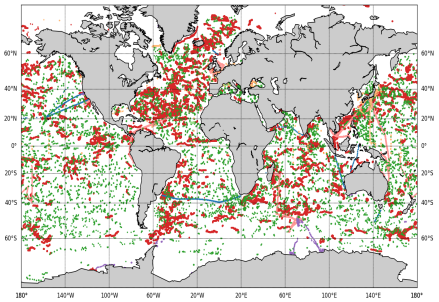
- Designed for reanalysis purposes and climate change studies
- All profiles are validated and distributed : good for scientific studies
- Timeseries available (TSG, drifters, etc...): surface/subsurface studies
- Objective analysis available

Examples

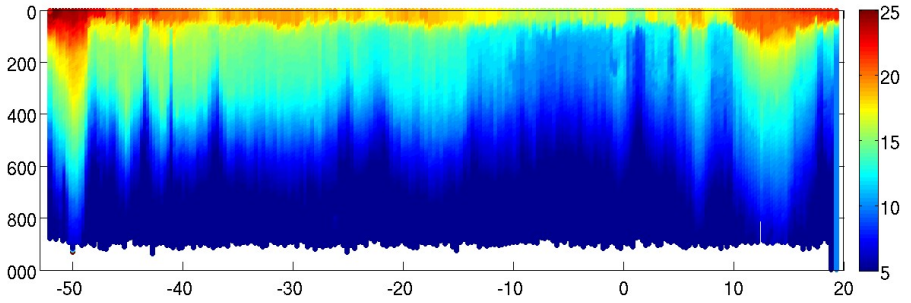





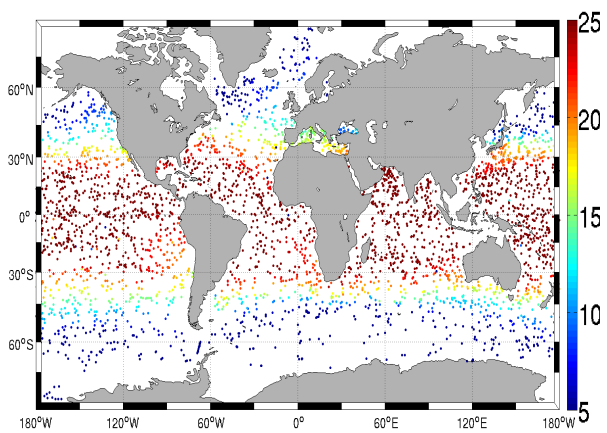
- Displaying measured temperature at global/regional scale

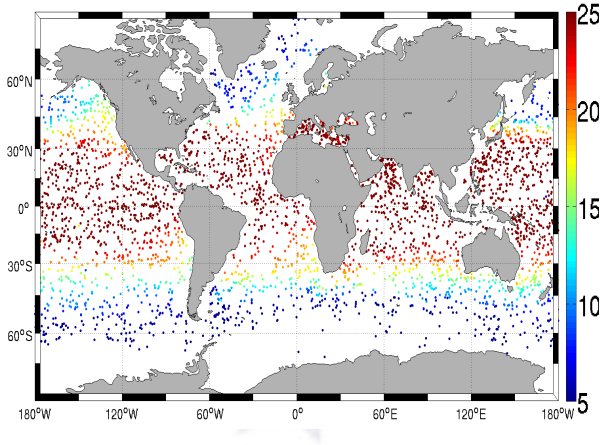


XBT transect studies

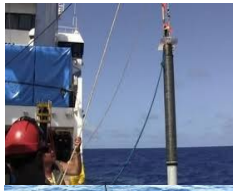
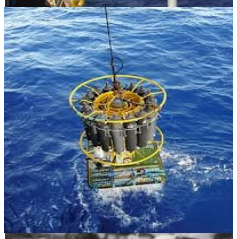


Global ocean studies Jan 2015/Jully 2015 ARGO floats





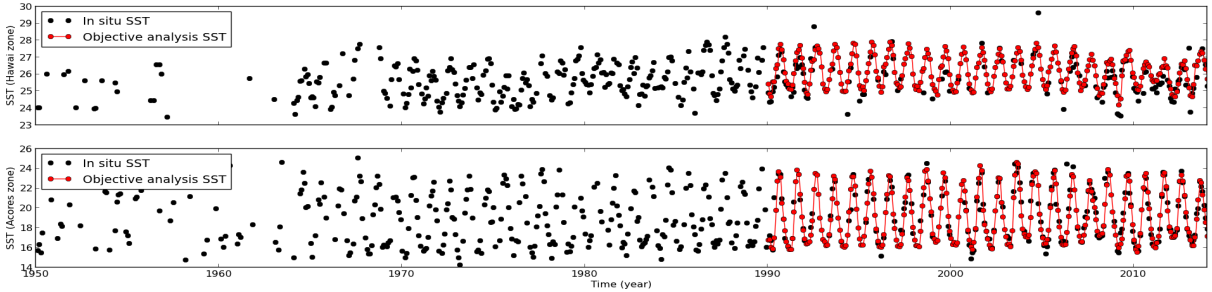
Examples

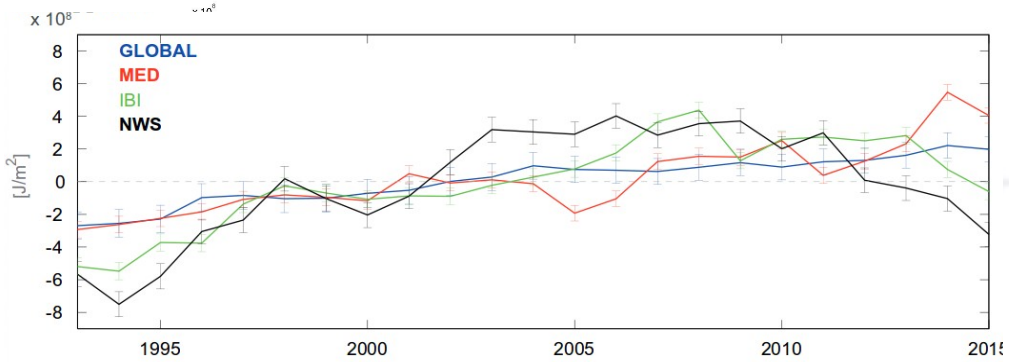


- Study on 2nd order products, global/regional scale

Mean surface temperature in 3*5° cells around Hawaii and Azores islands

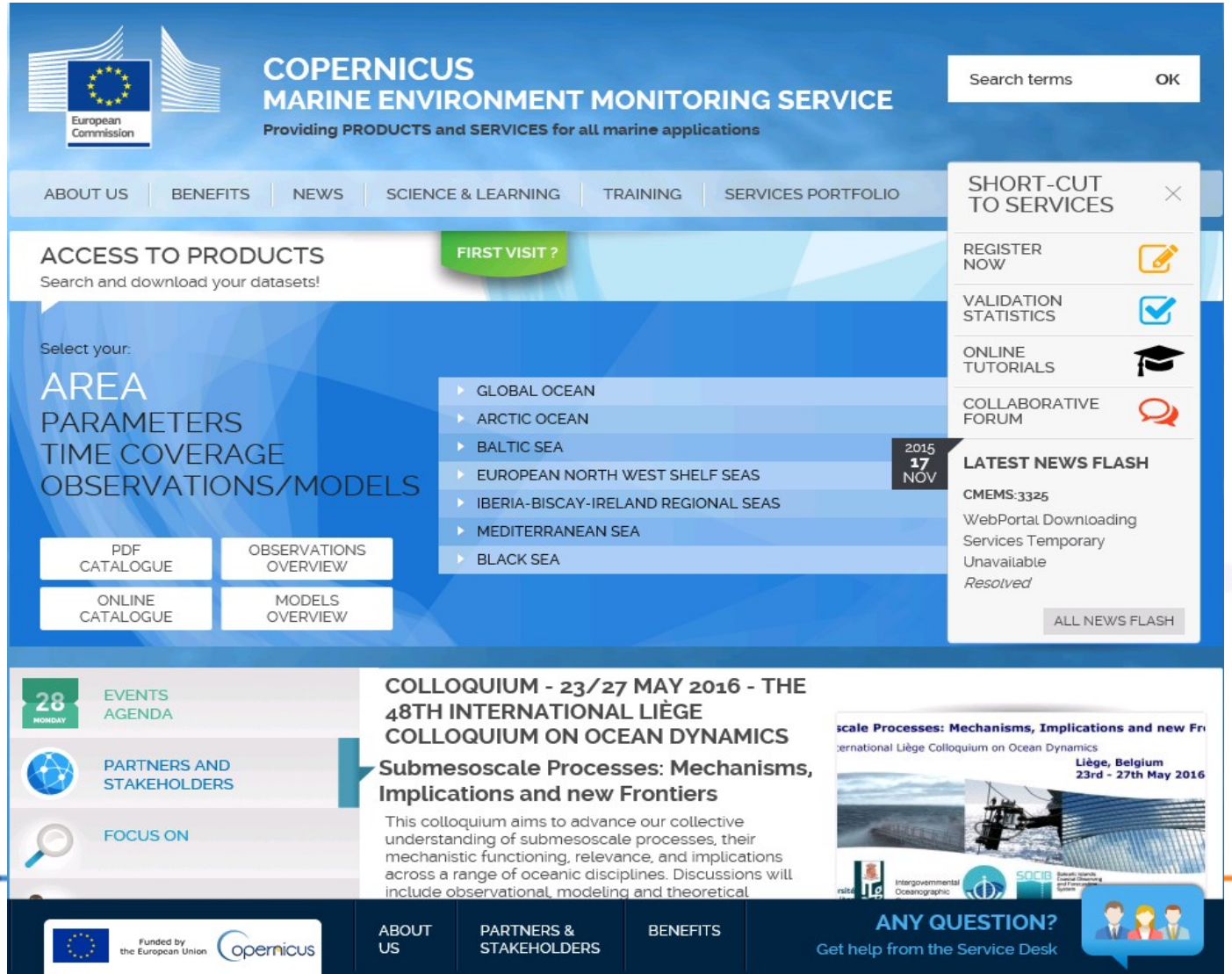


Global heat content estimation (K.VonSchuckmann)



Copernicus catalogue

- Copernicus catalogue http://marine.copernicus.eu/



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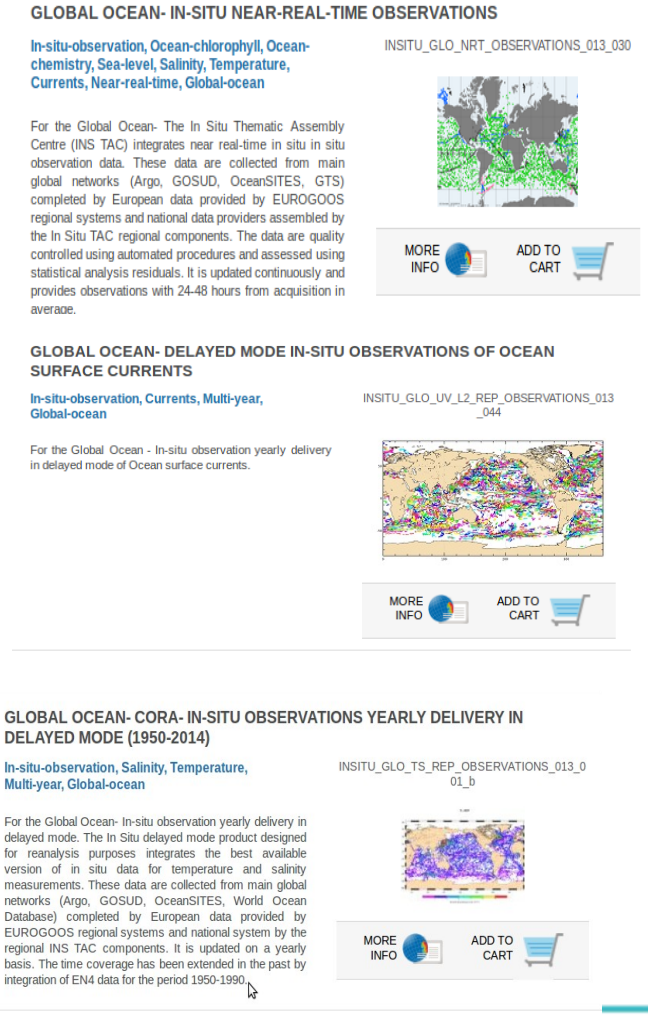

- Available In-Situ products
  - **Global ocean NRT observation**
    - Many parameters
  - Delayed time mode **in-situ currents** from drifters
    - Meridional and zonal velocities
  - *CORA datasets*
    - *http://doi.org/10.17882/46219*

- **Soon :**
  - Updates of the products
  - New in-situ product : **wave measurements**
- **Any question, any time :**

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