



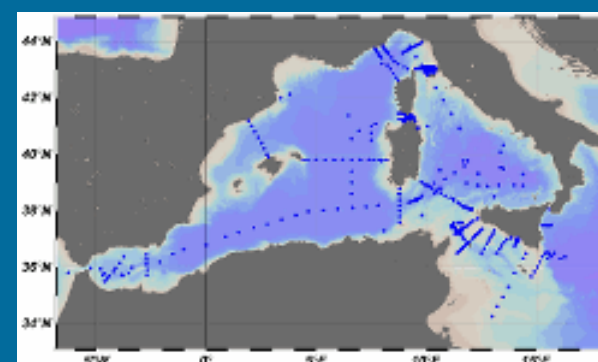
DOI 10.17882/87567

# CTD profiles in the western and central Mediterranean between 2007 and 2020 from Italian cruises

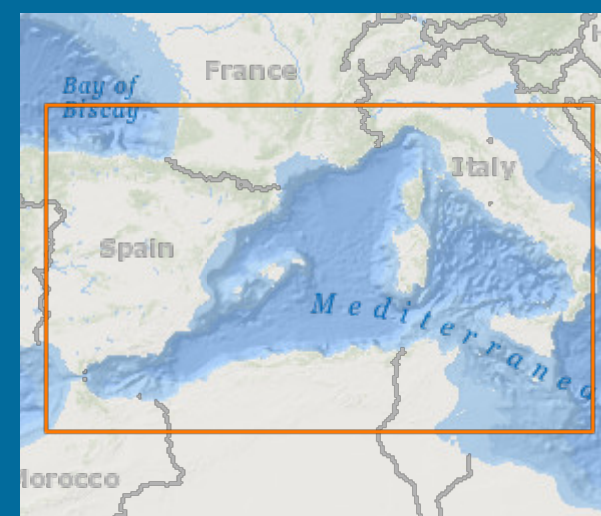
DATE	2022-04-08
TEMPORAL EXTENT	2007-10-05 - 2020-10-10
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Fifteen oceanographic cruises were organized in the western and central Mediterranean basins between October 2007 and October 2020 (see the table) by the Italian National Research Council (CNR) and the acquisition of 661 hydrological vertical profiles. The cruise carried out in 2015 is part of another database ([Ribotti et al., 2019<sub>a</sub>](#)) while in 2016 no cruise was planned and in 2019 it was cancelled due to bad weather conditions. Data of conductivity (SBE-4 sensor, resolution of  $3 \times 10^{-4}$  S/m), temperature (SBE-3/F thermometer, resolution of 0.00015 °C/bit at -1 °C or 0.00018 °C/bit at 31 °C), dissolved oxygen (DO; SBE-43 polarographic membrane sensor with a range of 120% of surface saturation and an accuracy of  $\pm 2\%$  of saturation), Chlorophyll-a fluorescence (Chl-a; Sea Tech Inc. fluorometer with energy emitted by the flash lamp of 0.25 J for flash, temperature range 0 ° - 25 °C, resolution 0.15 mg/l) reported as Relative Fluorescence Unit. A Chelsea Aqua 3 fluorometer has been used, while no fluorescence data were during the two cruises Bonifacio2010, -Sic and -Cor. Turbidity was acquired just during Bonifacio2011 by a Seapoint, and by a WET Labs ECO-NTU during Piattaforme2018 and Ichnussa2020. The pH/Redox sensor (SBE27) was available just during the cruise Piattaforme2018 but calibrated one year before. Pre-cruise and post-cruise calibrations of first and redundant sensors of temperature, salinity and dissolved oxygen were performed by CNR technicians at the NATO-CMRE Center in La Spezia (Italy). After acquisition data were quality checked and processed by the Sea-Bird Seasoft software, and the coarse errors corrected. On board the R/V Urania and R/V Minerva Uno, salinity was checked against the onboard analyses of water, sampled at pre-defined depths, by a Guildline-Autosal salinometer, while on the other vessels all samples were analyzed once back at CNR. The same for dissolved oxygen, checked against Winkler titration analyses onboard. This post-cruise calibration was not done on data acquired during the cruise Piattaforme2018. Chl-a, pH and turbidity, where available, data were not calibrated. These procedures of quality assurance and check are widely described in [Ribotti et al. \(2020\)](#). Furthermore, in the framework of the MEDESS4MS project (see info on <https://keep.eu/>), on 17 and 21 May 2014 two daily cruises, SeriousGame2014-1 and -2, were jointly held by the CNR in Oristano with the CNR in Ancona and the Italian Coast Guard. The two surveys covered, with 45 casts each, about 880 km<sup>2</sup> of shelf on a 5 x 5 km spatial grid in latitude and longitude of an area located north of the Elba island in the Tuscany Archipelago, northern Tyrrhenian Sea. The CTD probe was a Seabird

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Map of the hydrological casts acquired in the period 2007-2020 in the central and western Mediterranean



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Communities

EmodNet Ingestion duplication

SBE19 plus V2 equipped with sensors of pressure, temperature, conductivity, SBE 63 for dissolved oxygen, WET-Lab FLNTU for turbidity (NTU) and Chlorophyll (ug/l) and, just during the second cruise, a Turner Cyclops sensor for the Chromophoric Dissolved Organic Matter (CDOM in ppb QS - Quinine Sulfate). The probe was calibrated on January 29th 2013 but not before and after the two cruises, for what is known, so data were just quality checked and processed by the Sea-Bird Seasoft software, and the coarse errors corrected. This database is integrated with other two covering the period 2000–2006 for western to eastern Mediterranean ([Ribotti et al., 2019<sub>b</sub>](#), [Ribotti et al., 2019<sub>c</sub>](#)). The data set is provided per cruise as Ocean Data View (ODV, [Schlitzer, 2022](#). Ocean Data View. <https://odv.awi.de>) Spreadsheet files in TXT format where missing data values are set to -1.e10.

*List of cruises organized in the period 2007–2020 with number of casts, research vessels used and areas interested (with at least two casts)*

Cruise name	Start cruise	End cruise	# casts	Vessel	Area
MedCO07	05/10/2007	29/10/2007	85	Urania	East Ionian, Sicily Strait, Sardinia Channel, Tyrrhenian Sea, Ligurian Sea, Catalan Sea, Algerian basin
MedCO08	03/11/2008	24/11/2008	63	Urania	Gibraltar Strait, Alboran Sea, Algerian basin, Sardinia & Corsica channels
Sicily09	30/10/2009	23/11/2009	109	Urania	channels of Sardinia, Sicily, Corsica, Bonifacio Strait
Bonifacio2010-Cor	12/03/2010	22/03/2010	28	Maria Grazia	Bonifacio Strait, Corsica Channel
Bonifacio2010-Sic	23/11/2010	09/12/2010	22	Urania	Sardinia Channel, Sicily Strait
Bonifacio2011	09/11/2011	23/11/2011	19	Urania	Algero-Provençal basin, Tyrrhenian Sea, Sardinia Channel
Ichnessa2012	11/01/2012	27/01/2012	36	Urania	Algerian basin, Sardinia Channel, Tyrrhenian Sea
Ichnessa2013	15/10/2013	29/10/2013	44	Urania	East Ionian, Sicily Strait, Sardinia & Corsica channels, Tyrrhenian Sea, Algerian basin
Ichnessa2014	13/11/2014	01/12/2014	68	Urania	Tyrrhenian Sea, Sardinia & Corsica channels, Ligurian Sea, Algero-Provençal basin
SeriousGame2014	17/05/2014 (1)	18/05/2014	45	CP 406 A. Scialoja	North Tyrrhenian Sea
	21/05/2014 (2)	21/05/2014	45		
Ichnessa2017	23/10/2017	09/11/2017	37	Minerva Uno	channels of Sardinia and Corsica, Sicily Strait
Piattaforme2018	18/05/2018	03/06/2018	29	G. Dallaporta	Sicily Channel
Ichnessa2018	20/09/2018	03/10/2018	10	G. Dallaporta	Sicily Strait
Ichnessa2020	08/10/2020	10/10/2020	21	G. Dallaporta	North-Northeast Sardinia

DISCIPLINES

Physical oceanography, Biological oceanography, Chemical oceanography

KEYWORDS

Hydrological data, water masses, Mediterranean Sea, CTD profiles

LOCATION

45N, 34S, -7E, 17W

LICENCE



FP7/H2020

MYOCEAN, MYOCEAN2, COMMON SENSE

UTILISATION

These data are published without any warranty: the user assumes all risk arising from his/her use of these data. These data are intended to be quality controlled, but it is possible that they contain errors. It is the unique responsibility of the user to assess if the data are appropriate for his/her use, and to interpret them accordingly. We welcome users to ask questions and report problems to the contact addresses listed in the data files.

ACKNOWLEDGEMENTS

The data used in this work have been collected in the framework of several national and European projects, i.e. the Italian ASI project PRIMI (Progetto Pilota Inquinamento Marino da Idrocarburi), the EU projects MyOcean (contract 218812) and MyOcean2 (contract 283367), the MED programme project MEDESS4MS (Mediterranean Decision Support System for Marine Safety; agreement MED2S-MED11-01), the Italian MATTM project SOS-BONIFACIO (prot. DPN-2009-0001027 of 20/01/2009), the Italian MIUR project PON TESSA (Sviluppo di TEcnologie per la 'Situational Sea Awareness', agreement PON01\_02823), the Italian MIUR project RITMARE (La Ricerca Italiana per il MARE), the EU COMMON SENSE contract n. 614155), the Italian MATTM project SOS-Piattaforme & Impatti offshore (Reg. Uff. U. 0000939.17-01-2017), 2014 - 2020 INTERREG V-A Italy - France (Maritime) project SICOMAR plus (Transborder System for Safety at Sea against the Risks of Navigation and for the Protection of the Marine Environment plus). We thank captains and crews on R/V Urania, R/V Maria Grazia, R/V Minerva Uno and CP-406 Antonio Scialoja for their essential support on board, then Dr Paschini Ezio and Mr Penna Pierluigi from CNR in Ancona for their support during the cruises SeriousGame2014.

## Devices

Cruise name

Station

Type of acquisition (here C)

Date in mon/day/yr and Time in hh:mm

Longitude [degrees\_east]

Latitude [degrees\_north]

Bot. Depth [m]

## Data

FILE	SIZE	FORMAT	PROCESSING	ACCESS
Cruise MedCO07 in compressed ODV Spreadsheet TXT format and map	3 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
Cruise MedCO08 in compressed ODV Spreadsheet TXT format and map	2 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
Cruise Sicily09 in compressed ODV Spreadsheet TXT format and map	1 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
Cruise Bonifacio2010-Cor in compressed ODV Spreadsheet TXT format and map	301 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Bonifacio2010-Sic in compressed ODV Spreadsheet TXT format and map	552 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Bonifacio2011 in compressed ODV Spreadsheet TXT format and map	1 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Ichnussa2012 in compressed ODV Spreadsheet TXT format and map	1 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Ichnussa2013 in compressed ODV Spreadsheet TXT format and map	1 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Ichnussa2014 in compressed ODV Spreadsheet TXT format and map	2 Mo	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Ichnussa2017 in compressed ODV Spreadsheet TXT format and map	807 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Ichnussa2018 in compressed ODV Spreadsheet TXT format and map	327 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Ichnussa2020 in compressed ODV Spreadsheet TXT format and map	331 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruise Piattaforme2018 in compressed ODV Spreadsheet TXT format and map	626 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>
cruises SeriousGame1-2_2014 in compressed ODV Spreadsheet TXT format and map	445 Ko	TEXT	Quality controlled data	<a href="#">Open access</a> <a href="#">Download</a>

be cited too, when using this dataset in a publication :

Ribotti Alberto, Sorgente Roberto, Pessini Federica, Cucco Andrea, Quattrocchi Giovanni, Borghini Mireno (2022). Twenty-one years of hydrological data acquisition in the Mediterranean Sea: quality, availability, and research. *Earth System Science Data*, 14 (9). <https://doi.org/10.5194/essd-14-4187-2022>

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## Related documents





Ribotti Alberto, Sorgente Roberto, Pessini Federica, Cucco Andrea, Quattrocchi Giovanni, Borghini Mireno (2022). Twenty-one years of hydrological data acquisition in the Mediterranean Sea: quality, availability, and research. *Earth System Science Data*. <https://doi.org/10.5194/essd-2022-168>



Ribotti Alberto, Sorgente Roberto, Pessini Federica, Cucco Andrea, Quattrocchi Giovanni, Borghini Mireno (2022). Twenty-one years of hydrological data acquisition in the Mediterranean Sea: quality, availability, and research. *Earth System Science Data*, 14 (9). <https://doi.org/10.5194/essd-14-4187-2022>

Ribotti Alberto, Sorgente Roberto, Borghini Mireno (2020). Quality assurance and control on hydrological data off western Sardinia (2000–2004), western Mediterranean. *Earth System Science Data*, 12 (2), 1287–1294. <https://doi.org/10.5194/essd-12-1287-2020>

## Related datasets

[Ribotti Alberto](#) , [Di Bitetto Massimiliano](#) , [Borghini Mireno](#) , [Sorgente Roberto](#)  (2019). CTD profiles in western Sardinia (2000 - 2004), western Mediterranean. SEANOE. <https://doi.org/10.17882/59867>

[Ribotti Alberto](#) , [Perilli Angelo](#) , [Sorgente Roberto](#) , [Borghini Mireno](#)  (2019). Hydrological profiles in the Mediterranean Sea (2002 - 2006). SEANOE. <https://doi.org/10.17882/70340>

[Ribotti Alberto](#) , [Magni Paolo](#) , [Vetrano Anna](#) , [Chiappini Catia](#) , [Borghini Mireno](#)  (2019). ICHNUSSA 2015. SEANOE. <https://doi.org/10.17882/59777>