ARGO-ITALY:

ANNUAL REPORT 2021

Elena Mauri, Giulio Notarstefano, Milena Menna, Massimo Pacciaroni, Antonio Bussani, Piero Zuppelli, Antonella Gallo, Riccardo Martellucci, Annunziata Pirro, Pierre-Marie Poulain.

Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Trieste, Italy

Approved for release by: .....

Dr. Cosimo Solidoro

Director, Oceanography Section

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1. Introduction

Argo-Italy is the Italian component of a worldwide in situ global observing system, based on autonomous profiling floats, surface drifters, gliders and ship-of-opportunity measurements. It is primarily focused on the Italian seas, the Mediterranean and Black seas and the Southern Ocean including the Ross Sea, and comprises observations of temperature, salinity, currents and biogeochemical/optical properties of seawater. The Argo-Italy objective is to provide a significant and sustained Italian contribution to global ocean monitoring.

Argo-Italy is a cost-effective long-term monitoring system that is a unique source of information to study the role of the oceans, and the Mediterranean Sea in particular, on the climate system. It also provides the data required by operational ocean monitoring systems in order to improve significantly extended forecasts of the atmosphere and oceans. Argo-Italy contributes to programs of operational oceanography, such as MONGOOS (Mediterranean Oceanography Network for the Global Ocean Observing System) and is essential for the production of marine core and downstream services products of Copernicus Marine Environment Monitoring Service (CMEMS). It is also an important component of GEOSS (Global Earth Observation System of Systems).

Argo-Italy has been funded by the Italian Ministry of University and Research (MUR) since 2011. The operation of instruments at sea and the collection of data began in February 2012. A dedicated web site was developed to help with the internal organization of the project, to publish graphical and tabulated summaries and photographs on the operation of instruments in near-real time, and to post news, related links, small project calls, etc. related to Argo-Italy. The website was upgraded and updated to have a better and more flexible view of the activities: http://argo.ogs.it/#/

Argo-Italy contributes to international programs such as Argo and Euro-Argo (global monitoring of water properties with profiling floats), GDP (Global Drifter Program to measure near-surface temperature and currents), EGO (gliding vehicles to measure water properties) and SOOP (Ship-Of-Opportunity Program to temperature profiles) which have been developed to monitor the entire World Ocean on a long term basis.

This report summarizes the activities of Argo-Italy in 2021 in terms of procurements of the instruments, their preparation and their deployments. Information about data processing and archiving is also given. Plans for 2022 and beyond are included in the last section.

2. Argo float activities in 2021

2.1 Float procurement

The following Argo floats were purchased in 2021 on funds:

1. Five Arvor-I floats, four Arvor-I floats with dissolved oxygen sensor and seven Arvor-I with sea ice detection algorithm from NKE, Lorient, France. These instruments were acquired via the Euro-Argo ERIC. They are fitted with a Sea-Bird CTD (SBE 41 CP) (and Aanderaa optode sensor) and transmit data via Iridium. Six units were shipped to New Zealand and one unit to

South Africa for deployments in the Southern Ocean and Ross Sea in winter 2021-2022. One unit was shipped to CNR in Ancona (Italy) and deployed in the Northern Adriatic Sea in March 2022 (from R/V Dallaporta). Two units will be shipped to CMRE in La Spezia and deployed in the Balearic sub-basin in March 2022 (from R/V Pourquoi Pas?). Two units will be shipped to Toulon (France) and they will be deployed in the Tyrrhenian Sea in May 2022 (from R/V Belgica). One Arvor (Core-Argo) will be shipped to Malta and it will be deployed in spring 2022 in the Sicily Channel. One Arvor (Core-Argo) will be shipped to IO-BAS (Varna, Bulgaria) and it will be deployed in the Black Sea. Plans for the deployment of the remaining platforms have to be finalized.

2. Three Bio-Argo floats from NKE, Lorient, France. They are Provor CTS 4 floats with Iridium global telephone network (RUDICS) for data telemetry and a GPS receiver for position. They measure at 1 m vertical resolution temperature and salinity (Sea-Bird CTD), irradiance at three wavelengths (412 nm, 490 nm, 555 nm), fluorescence of Chlorophyll-a and of Colored Dissolved Organic Matter (CDOM), backscattering coefficient (530 nm) and attenuation coefficient (660 nm). They are also equipped with an Aanderaa optode oxygen sensor. One out of three is equipped with a SUNA sensor. These floats are going to be shipped to OGS (summer 2022).

2.2 Float deployments

In total, **16 Italian floats** were deployed in 2021 (see Tables 1 and 2 for details). These floats were Arvor-I, Arvor-Ice, Provor CTS4 and Deep-Arvor designs manufactured by NKE (France). All floats transmit data via Iridium telemetry.

Seven units were released in the Mediterranean (Table 1). Most floats have a parking depth at 350 dbar and maximal profiling depths alternating at 700 and 2000 dbar. They all have cycles of 5 days except for one Arvor-I float (WMO 6903801) which had short cycles of 3 h during most of their initial operating life to measure high-frequency processes in the Sicily Channel. One Italian float was deployed in the shallow northern Adriatic (WMO 6903800) as a complement of the Euro-Argo RISE (EU H2020 project) fleet. The platform was used in a targeted shallow mission close to the coast. The cycle length was set to 5 days and the parking depth equal to the maximal bathymetry (about 70 m).
Most floats were deployed from research vessels of opportunity (i.e., R/V Dallaporta, R/V Bat-Galim, R/V Aegaeo, Malta Guard Coast for the Mediterranean and R/V Agulhas II and Laura Bassi for South Atlantic, South Pacific and Southern Ocean) with the help of colleagues from Greece, Malta, Italy and Israel.

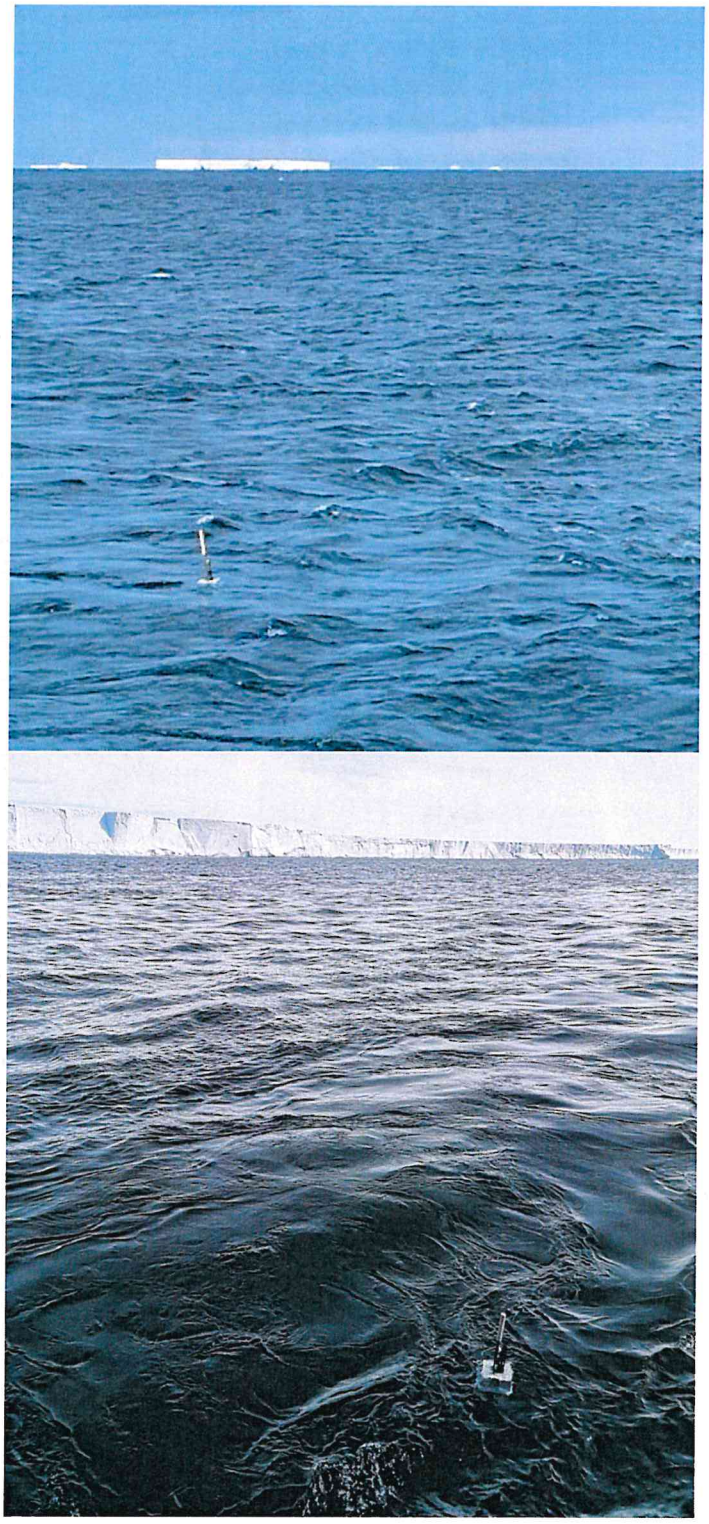

Figure 1. Arvor-I AI2600-19EU012 (recovered and re-deployed float, top figure) and AI2600-20EU018 both ice detection, from R/V Laura Bassi in the Ross Sea Polynya, January 2021.

Figure 2. Provor CTS4 P43208-20IT001 before the deployment in the South Adriatic Sea, November 2021.

Model	WMO	Depl. Date	Lat	Lon	Cycles	Last Date	Lat	Lon	Status*	Cyc.**
Arvor - T/S Diss. Oxy	6903799	25-Apr-2021 13:30	41.65	17.22	79	14-Feb-2022 00:50	41.85	17.06	A	5
Arvor - T/S Core	6903800	04-May-2021 10:58	44.05	13.62	33	12-Ott-2021 06:18	43.96	13.63	D	5
Arvor - T/S Core	6903801	10-Jun-2021 09:56	35.96	14.09	263	13-Feb-2022 05:48	35.23	19.23	A	5
Arvor - T/S Diss. Oxy	6903802	10-Aug-2021 23:02	33.15	34.16	38	12/-Feb-2022 05:48	33.82	33.98	A	5
Arvor - T/S Diss. Oxy	6903803	20-Sep-2021 04:18	34.81	26.16	30	13-Feb-2022 05:52	35.32	22.66	A	5
Arvor-I DEEP	6903804	20-Sep-2021 23:55	36.02	28.63	29	09-Feb-2022 06:05	35.76	28.58	A	5
Provor CTS4	6903805	11-Nov-2021 09:43	41.53	18.06	33	28-Jan-2022 11:34	41.14	17.59	A	5

**Status in early February 2022: A = active, D = dead;*
***Cycle: Length of cycle in days.*

Table 1. Status information for the 7 Italian floats deployed in the Mediterranean Sea during 2021.

In total, one float stopped functioning before the end of the year 2021. The Arvor-I float 6903800 deployed in the northern Adriatic Sea in May 2021 stopped transmitting after cycle 33 and the cause is still unknown.
Four Italian floats were deployed in the Ross Sea polynya with the help of Italian colleagues onboard the R/V Laura Bassi. Two of them (6903794 and 6903795) were recovered after the previous mission and redeployed (Table 2). All floats are ice detection. The Arvor-Ice uses an Ice Sensing Algorithm (ISA) based on temperature readings to abort surfacing when sea ice is present at the sea surface. The adopted configuration in the area of the polynya was a drifting and profiling depth of 1000 dbar with a cycling period of 7 days. Two floats were recovered in early 2022 (6903793 was redeployed and 6903795 sent to maintenance) and two died in 2021.
Five Italian floats were deployed in the South Atlantic Ocean in 2021 (Table 2) with the help of Italian colleagues onboard the R/V Agulhas II. Three out of five floats are Arvor-Ice model. All the floats were programmed to cycle between the surface and 2000 dbar every 10 days and to drift at the parking depth of 1000 dbar. They were all still active in early 2022.

Model	WMO	Depl. Date	Lat	Lon	Cycles	Last Date	Lat	Lon	Status*	Cyc.**
Arvor-T/S Core	6903806	10-Dec-2021 08:43	-60.04	-0.05	7	09-Feb-2022 05:57	-59.27	3.34	A	10
Arvor-T/S Core	6903807	11-Dec-2021 11:12	-63.99	1.48	-	11-Dec-2021 11:12	-63.99	1.48	-	10
Arvor-T/S ICE	**6903792**	**18-Jan-2021 05:48**	**-77.16**	**168.93**	**8**	**02-Mar-2021 06:12**	**-77.28**	**168.68**	**D**	**7**
Arvor-T/S ICE	**6903793**	**19-Jan-2021 03:08**	**-77.42**	**174.34**	**61**	**26-Jan-2022 06:08**	**-76.27**	**173.94**	**recovered**	**7**
Arvor-T/S ICE	**6903794**	**21-Jan-2021 20:36**	**-77.73**	**-178.52**	**49**	**25-Dec-2021 05:57**	**-77.69**	**-179.92**	**D**	**7**
Arvor-T/S ICE	**6903795**	**30-Jan-2021 03:56**	**-75.28**	**164.01**	**57**	**23-Jan-2022 05:54**	**-74.97**	**164.63**	**recovered**	**7**
Arvor-T/S ICE	6903798	24-Feb-2021 00:15	-64.00	0.43	36	10-Feb-2022 05:55	-61.55	-8.73	A	10
Arvor-T/S ICE	6903796	24-Feb-2021 14:25	-63.00	-2.44	36	10-Feb-2022 05:53	-62.75	-9.75	A	10
Arvor-T/S ICE	6903797	24-Feb-2021 20:30	-62.07	0.13	36	10-Feb-2022 05:51	-61.47	-9.00	A	10

**Status in early February 2022: A = active, D = dead.*
***Cycle: Length of cycle in days.*

Table 2. Status information for the 9 Italian floats deployed in the Southern Ocean, South Atlantic and South Pacific during 2021.

In summary, at the end of 2021, the Argo-Italy program had a total of 77 active floats, including 29 instruments in the Mediterranean Sea, 1 in the Atlantic Ocean (it escaped from the Mediterranean through the Strait of Gibraltar), 3 in the Black Sea (Figure 3) and 44 in the South Pacific, South Atlantic and Southern Oceans (southern of 60 °S, see Figure 4).

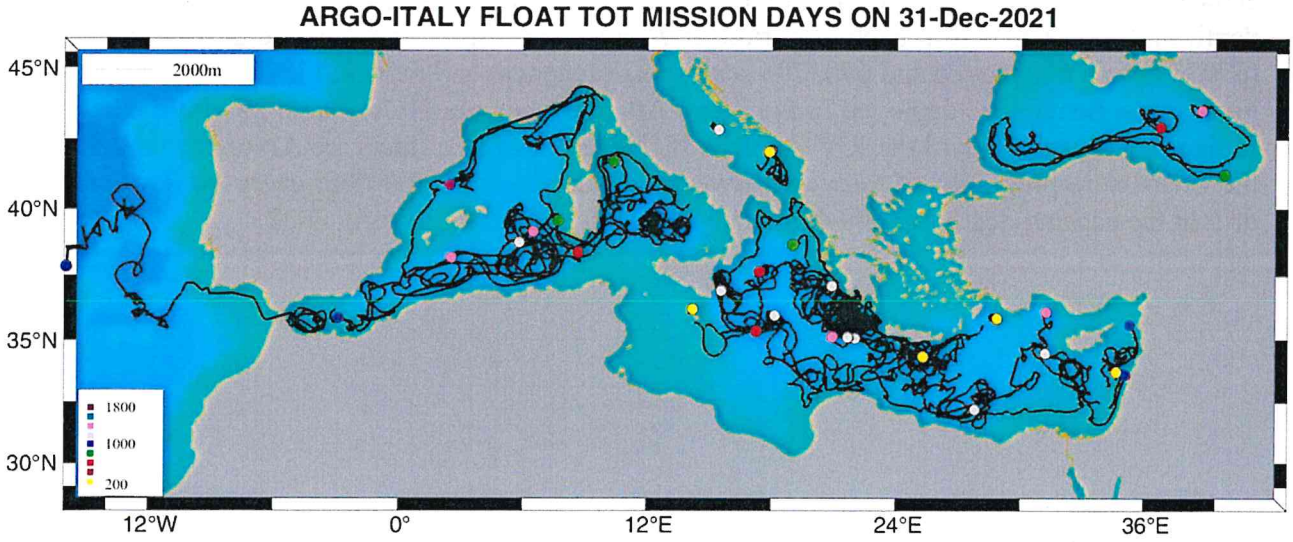

Figure 3. Trajectories and positions (circle symbols) on 31 December 2021 of the 33 Argo-Italy floats active in the Mediterranean and Black Sea. The circle symbols are color-coded as a function of float age in days.

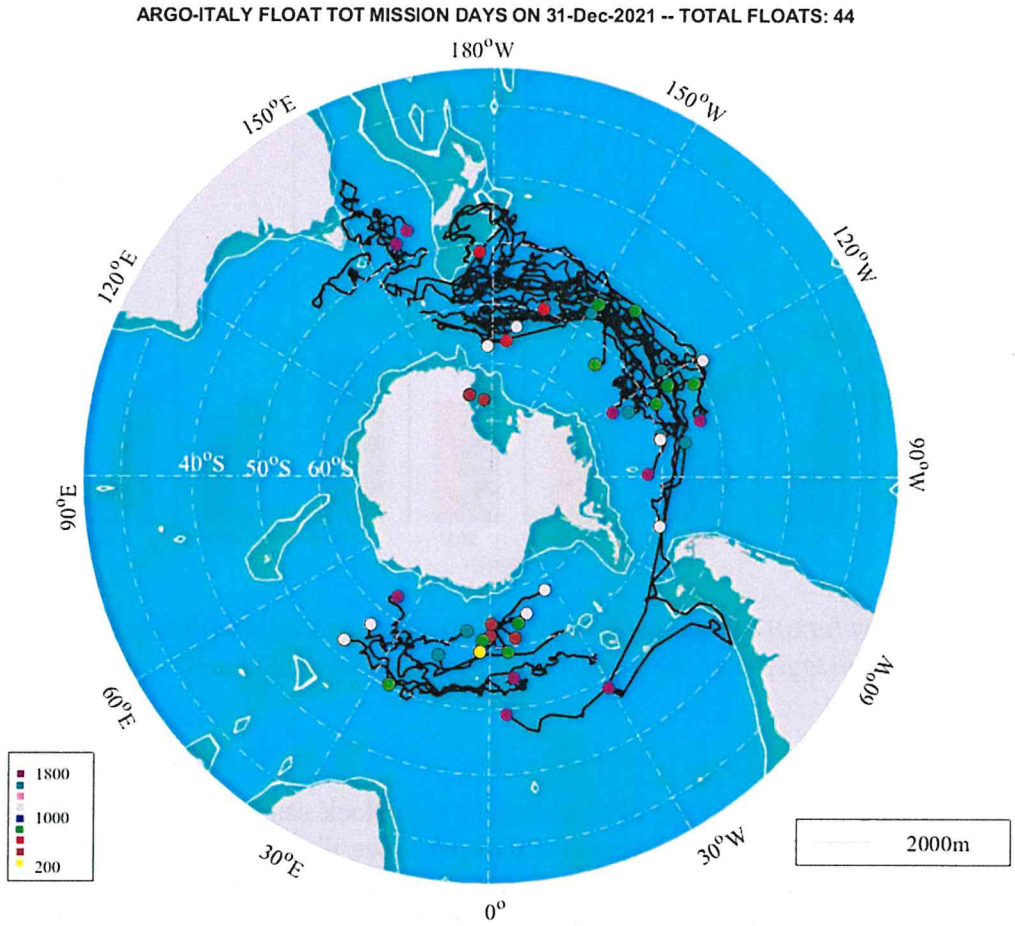

Figure 4. Trajectories and positions (circle symbols) on 31 December 2021 of the 44 Argo-Italy floats in the South Pacific, South Atlantic and Southern Oceans. The circle symbols are color-coded as a function of float age in days.

The temporal evolution of the number of active floats is shown in Figure 5 with weekly resolution, along with the annual numbers of float deployments and float deaths for the period 2012-2021. The float population in 2012-2021 is quite stable at about 77 active instruments in 2021. In 2021, the number of dead floats exceeded the number of deployments.

Since 18 February 2012, a total of 229 Argo-Italy floats have been deployed, 133 in the Mediterranean and Black seas, and 96 in the oceans of the Southern Hemisphere. In less than 10 years, they have provided about 33060 CTD profiles. The histogram of the number of CTD profiles per float is shown in Figure 6. Ninetythree floats, about 40 % of the total deployments, have done more than 180 profiles. In total (during 2012-2021), ~6 % of the floats have failed just after deployment.

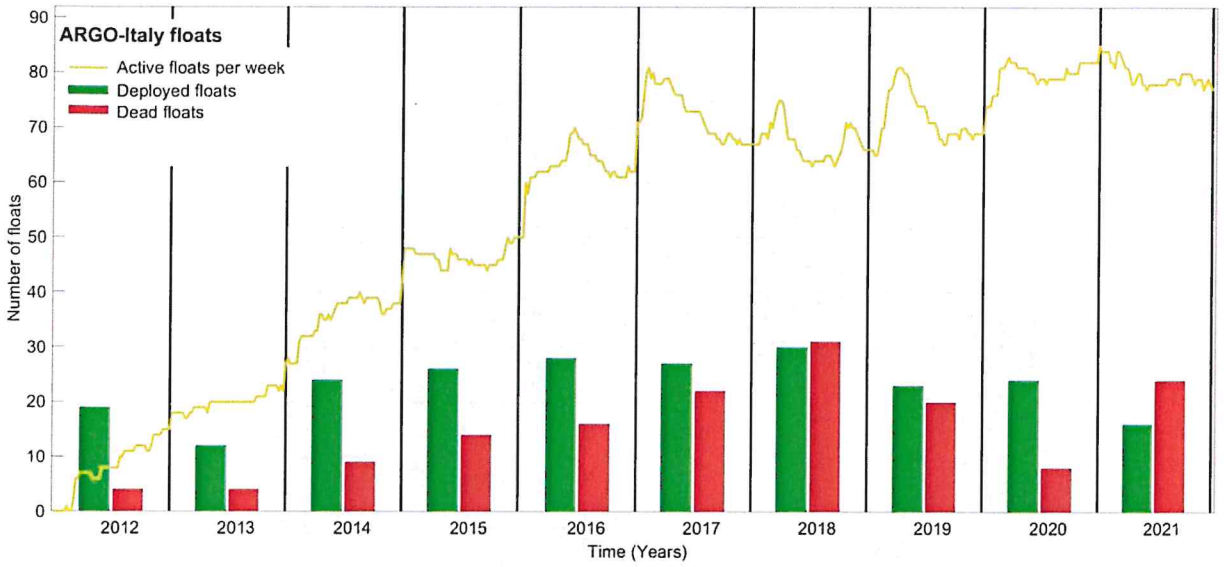

Figure 5. Temporal evolution of the number of Argo-Italy active floats with weekly resolution and histogram of the annual float deployments and losses.

After about 10 years of activities in the Mediterranean and Black seas, the maximum operating life of the Argo-Italy floats is about 5.5 years (~2010 days, see Figure 7). If we consider all the floats (dead + alive) the mean half-life is about 850 days for all floats in the Mediterranean and Black seas (Figure 7, top). Excluding the floats still alive but with life <= 850 days, we obtain a better estimate of mean half-life reaching about 900 days (Figure 7, middle). Arvor floats show the longest performance crossing the 2000 mission days threshold (Figure 7, bottom).

For the floats deployed in the South Pacific, South Atlantic and Southern Ocean the maximal operating life is about 6.5 years, and the mean half-life is approaching two years (Figure 7). The longest performance is attributed to the Arvor floats with more than 2300 mission days (Figure 7, bottom).

Note that these survival rate statistics have to be interpreted with caution since most of the floats are still alive (33 floats out of 133 units for the Mediterranean and Black seas, 44 floats out of 96 in the Southern Hemisphere). Furthermore, these statistics include the floats with all the types of "end of operating life" (low battery power, stranding, involuntary and voluntary recovery, etc.).

Table 3 summarizes the main statistics of the Argo-Italy floats for the period 2012-2021. In 2021, about 4300 CTD profiles were obtained with Italian Argo floats. These profiles provided data on a total vertical distance (considered as the ascent phase only) of more than 5600 km in 2021. For the period 2012-2021, the 229 floats of Argo-Italy provided data on a total vertical distance of about 38500 km in 33000 profiles, see also Figure 9.

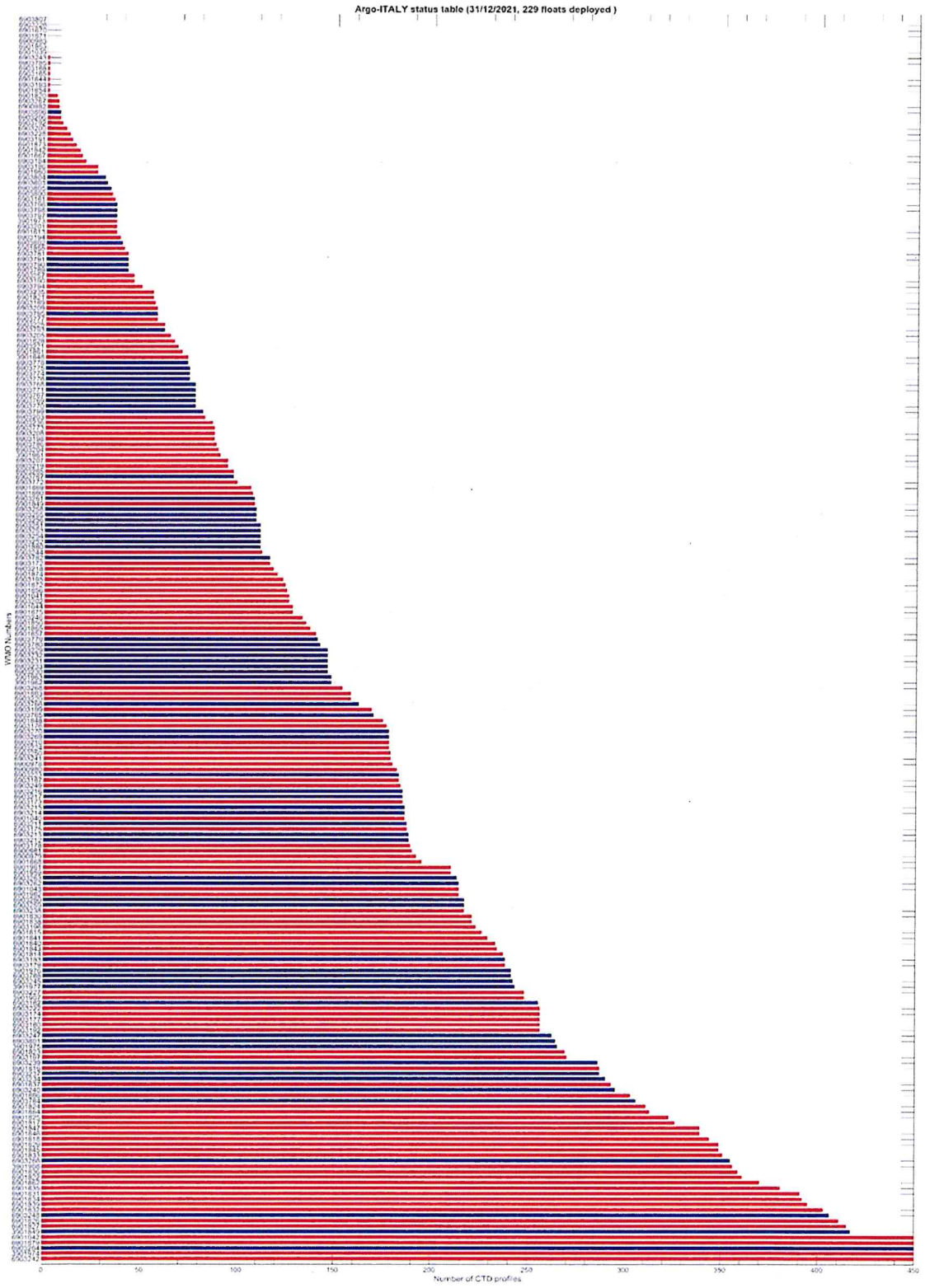

Figure 6. Histogram of the number of CTD profiles per float (red: dead float, blue: alive at the end of 2021).

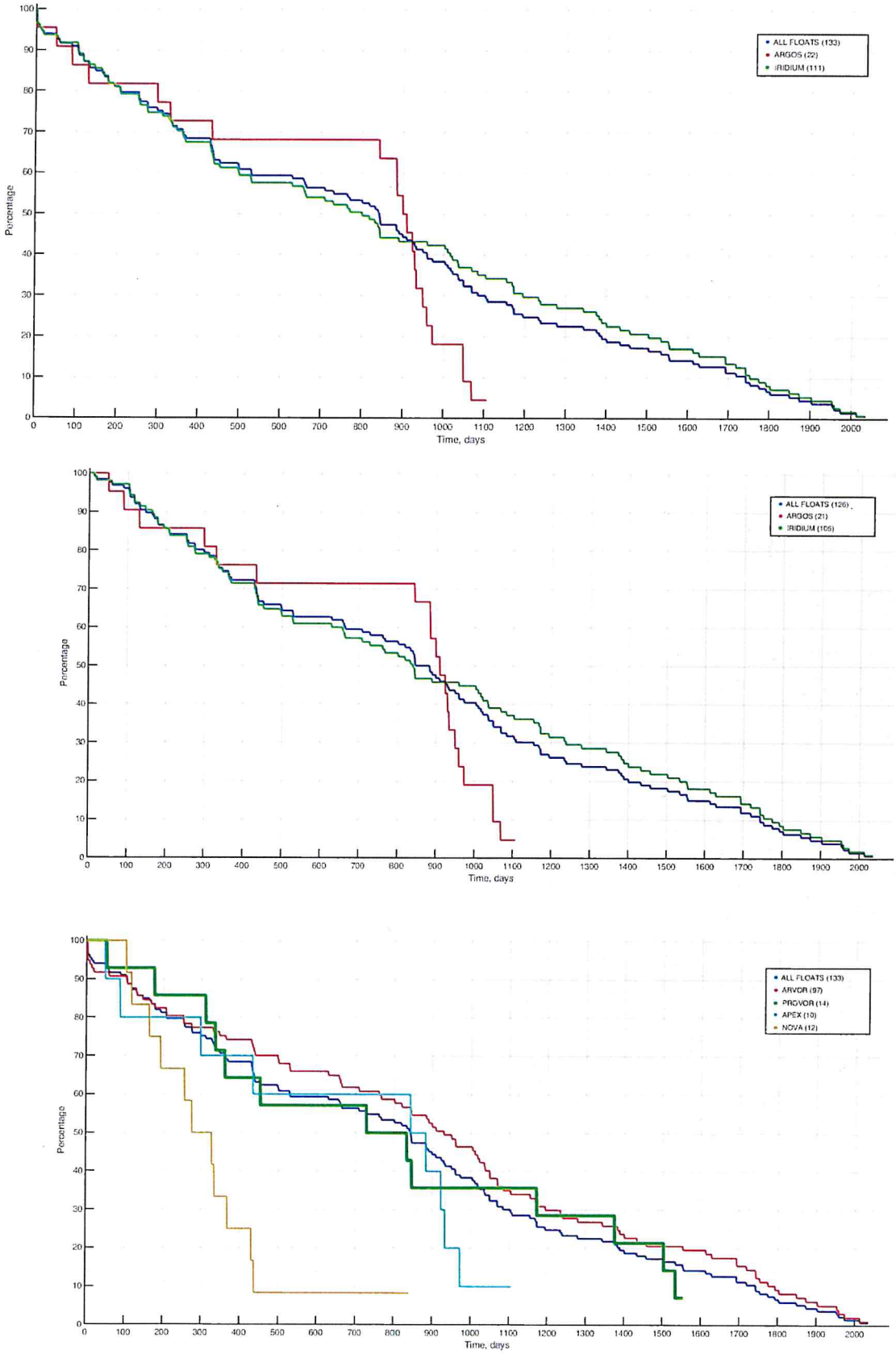

Figure 7. Survival rate diagrams for the Argo-Italy floats in the Mediterranean and Black seas, separated by transmission mode (top and middle) and float type (bottom).

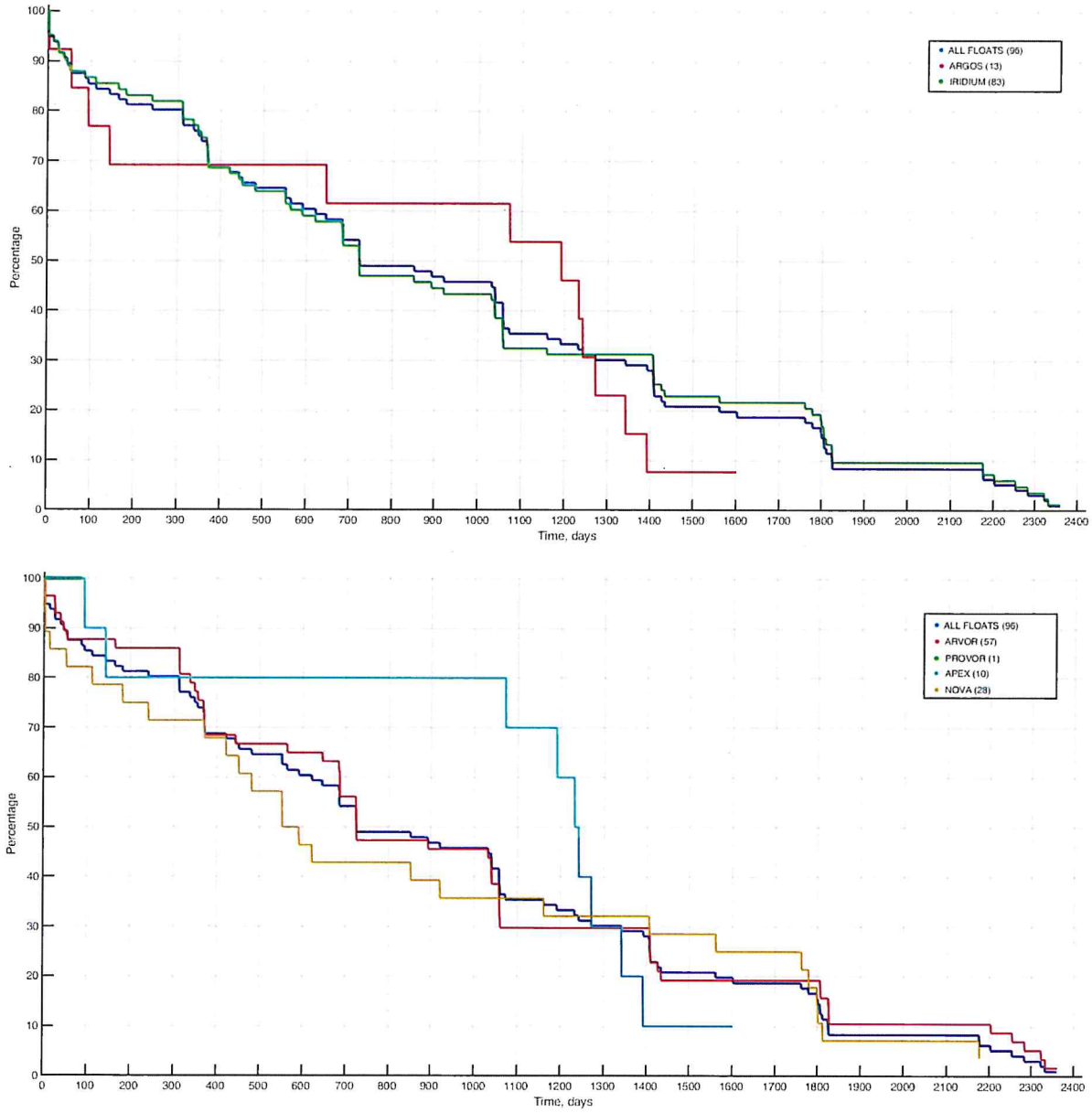

Figure 8. Survival rate diagrams for all the Argo-Italy floats in the South Pacific, South Atlantic and Southern Ocean, separated by transmission mode (top) and float type (bottom).

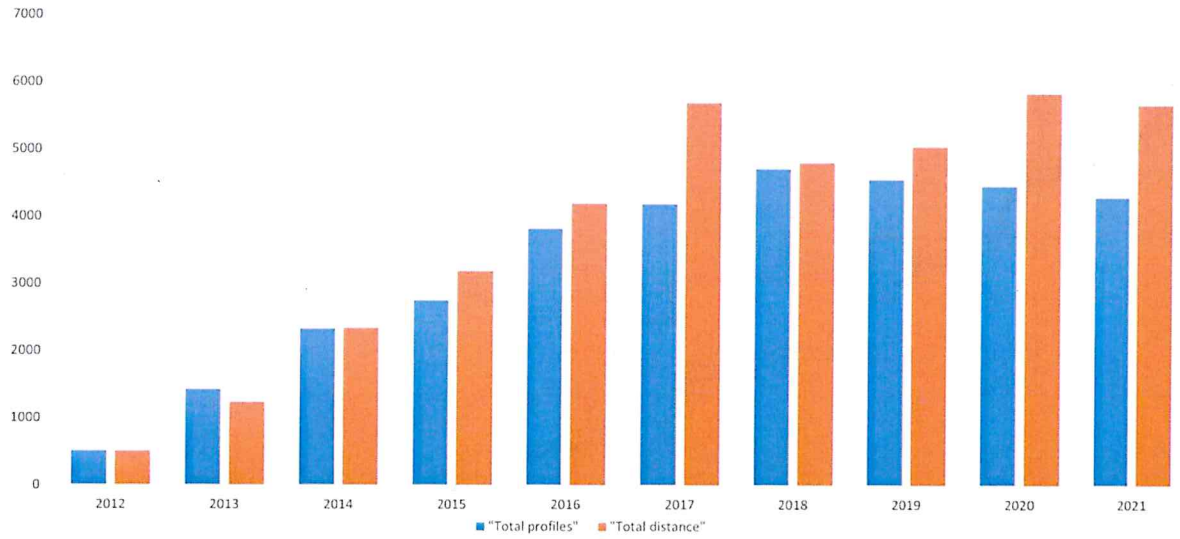

Figure 9. Evolution over the years of the total profiles and vertically traveled distance of the Argo-Italy floats.

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2012-2021
Deployments											
CTD floats deployed in Med	13	7	13	11	9	8	16	10	8	5	100
CTD floats deployed in BS	4	1	2	1	1	2	0	1	1	0	13
CTD floats deployed in SO, South Pacific and Atlantic	2	3	7	10	15	17	8	10	15	9	96
Bio floats deployed	0	0	3	4	1	0	5	0	0	1	14
Deep floats					2	0	1	2	0	1	6
Total floats deployed	**19**	**11**	**25**	**26**	**28**	**27**	**30**	**23**	**24**	**16**	**229**
CTD profiles											
CTD profiles in Med	400	1099	1560	1743	2358	2147	2962	2646	2213	2205	19333
CTD profiles in BS	105	236	323	268	260	298	298	280	268	181	2517
CTD profiles in SO, South Pacific and Atlantic	6	90	205	475	815	1418	1087	1200	1615	1647	8558
Bio profiles	0	0	244	266	373	261	360	410	287	175	2376
Deep profiles					15	65	11	20	75	87	273
Total profiles	**511**	**1425**	**2332**	**2752**	**3821**	**4189**	**4718**	**4556**	**4458**	**4295**	**33057**
Vertical distances (km)											
Distance in Med	440	902	1485	1813	2195	2307	2156	2037	2109	2109	17553
Distance in BS	71	210	283	257	247	294	295	287	300	242	2486
Distance in SO, Southern Pacific and Atlantic	2	125	380	875	1374	2658	2020	2260	2914	2886	15494
Distance of bio floats	0	0	199	245	335	248	293	392	279	165	2156
Distance of deep floats					50	194	43	69	235	265	856
Total distance (km)	**513**	**1237**	**2347**	**3190**	**4201**	**5701**	**4807**	**5045**	**5837**	**5667**	**38545**

Table 3. Statistical information on the performance of the Argo-Italy floats in 2012-2021.

3. Drifter activities in 2021

3.1 Drifter procurement

In 2021 80 SVP drifters were purchased from SIO, La Jolla, California, USA with Argo-Italy funding of 2019 and 2020. Forty of these drifters were anticipated by SIO for activities of 2019 and 2020 (8 were shipped to South Africa, 16 to New Zealand and 16 to Italy). The other 40 were shipped at the end of 2021 (8 were shipped to South Africa, 8 to New Zealand and 24 to Italy) and are available for 2022 activities.

3.2 Deployments of SVP drifters in the Southern Ocean

Table 4 shows the status information of the ten SVP drifters deployed in February and December 2021 as contribution to the PNRA (Programma Nazionale di Ricerca in Antartide) project in the South Atlantic. These drifters were deployed along the Good Hope Transect (Figure 10; Table 4) from the R/V Agulhas II.

Argos/IMEI	Deploy Date	Lat	Lon	Last Date	Lat	Lon	Type	Depth of current measurement (m)
a300234068341250	25-Feb-2021 17:05	-62.55	-169.2	31-Mar-2022 06:00	-55.78	-81.67	SVP	15
a300234068340820	25-Feb-2021 09:20	-60	0.03	31-Mar-2022 06:00	-52.79	33.4	SVP	15
a300234068340740	25-Feb-2021 23:30	-58	-0.02	31-Mar-2022 06:00	-49.26	55.31	SVP	15
a300534061493070	09-Dec-2021 04:11	-54	-0.01	31-Mar-2022 06:00	-52.88	2.62	SVP	15

Table 4. Status information for the Italian drifters deployed in the South Atlantic (Southern Ocean) in February and December 2021.

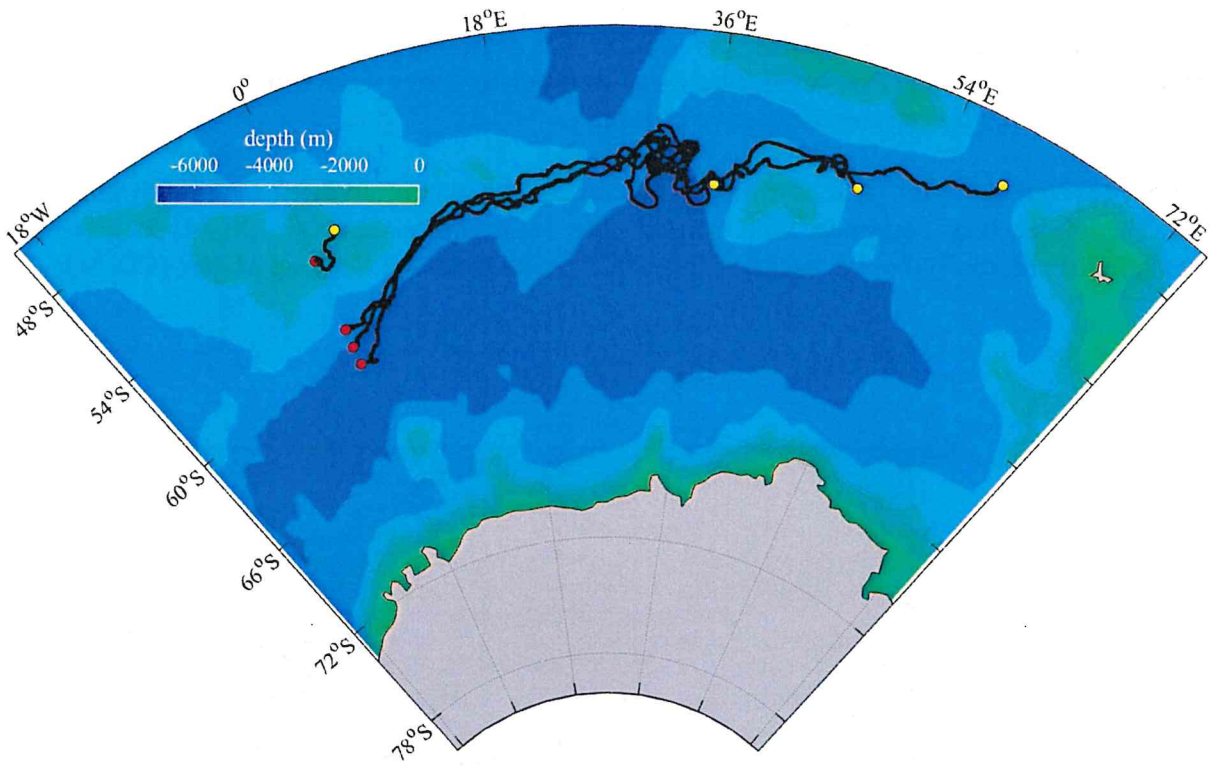

Figure 10. Trajectories, deployment positions (red dots) and last position (yellow dots) of the five Italian drifters deployed in the South Atlantic in February and December 2021. Drifter data are updated to March 2021.

4. Glider activities in 2020

4.1 Glider testing

The gliders and receiving stations in the Lab were tested before each deployment. After the refurbishment, standard test was performed on the SeaGlider SG554, before the deployment in the South Adriatic Sea and the backup receiving station was set up.

4.2 Glider operations

In 2021, one glider mission was performed using the SeaGliders SG554 in the South Adriatic between February and March 2021.

During the mission in the South Adriatic Sea the SeaGlider SG554 was operated for 36 days from 28 February to 5 March (Figure 11) in the framework of the Convex21 experiment to assess the

hydrographical characteristics present during winter. The mission was conceived to identify smaller-scale processes that occur during convection. The sampling plan provided for shorter than the Bari-Dubrovnik transects repeated over time, in order to better assess the time scale of the phenomena occurring during the convective process.

The glider covered about 600 km, performing 300 dives. The maximum depths varied from 20 to 950m. The glider was equipped with sensors for temperature, salinity, dissolved oxygen fluorescence of chlorophyll *a*, backscattering and Colored Dissolved Organic Matter (CDOM).

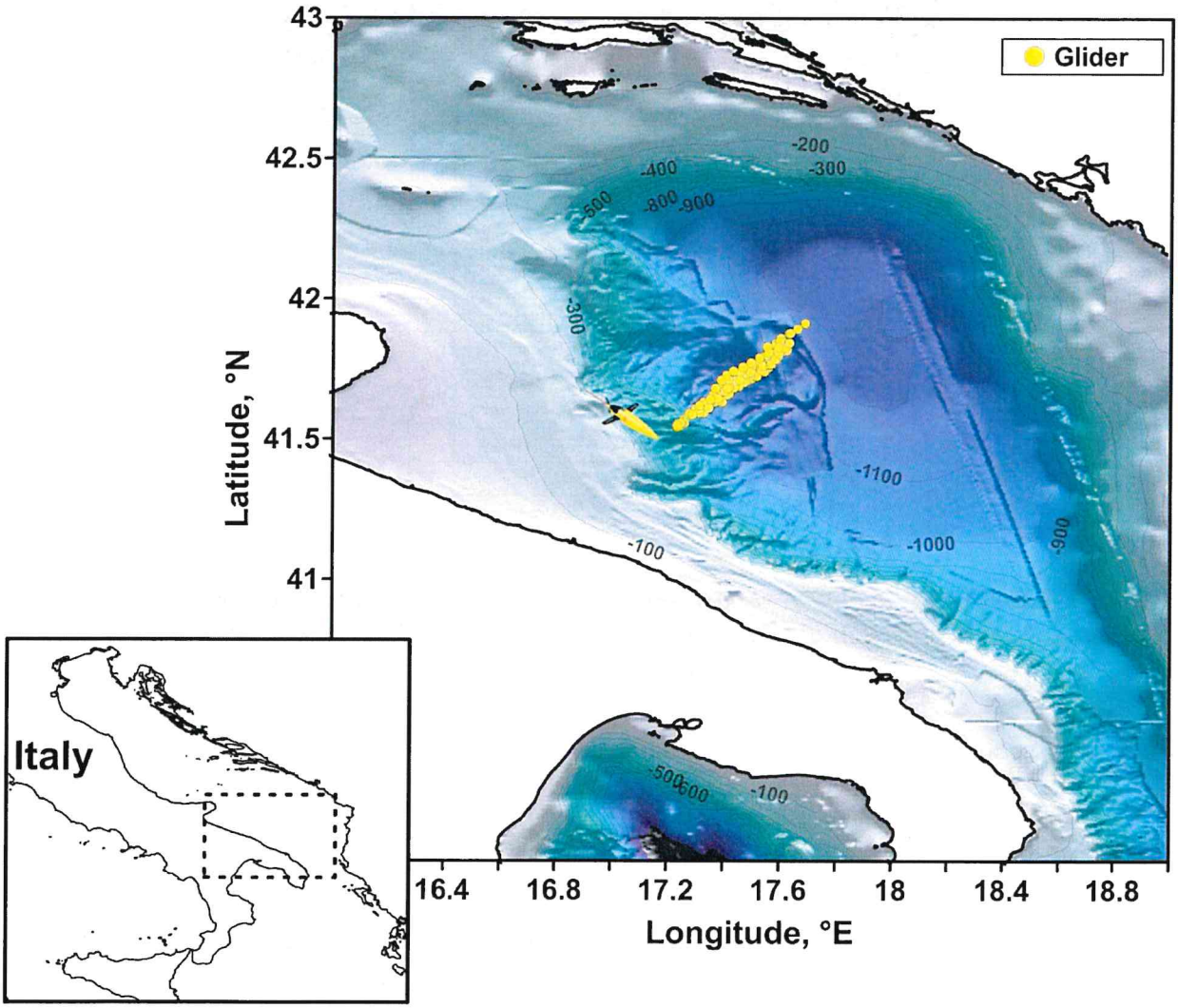

Figure 11: The study area and geographical position of the glider surfacing (yellow dot). The glider symbol indicates the last position of the instrument.

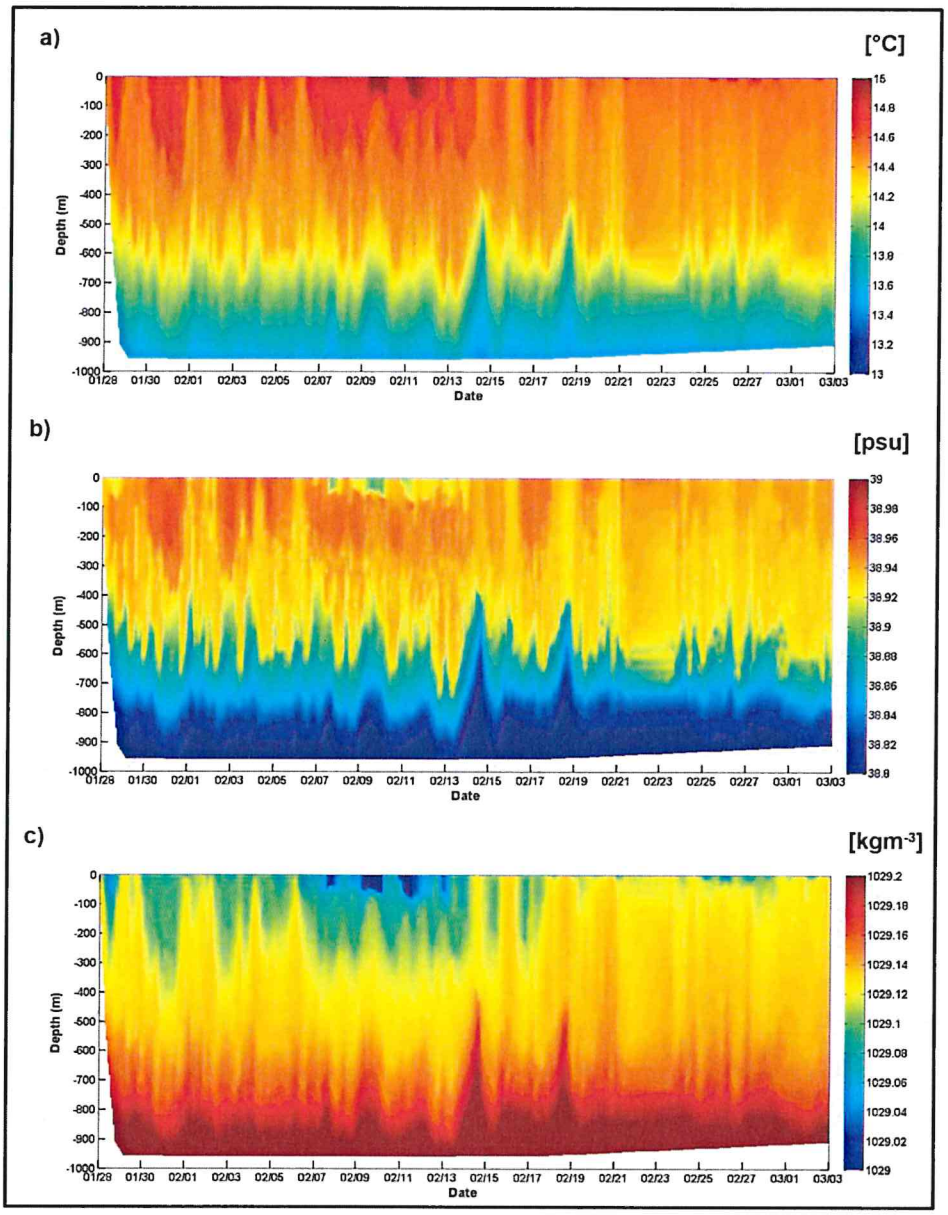

Figure 12: Temperature (a), salinity (b), potential density (c) along the glider path during the CONVEX21 experiment in the South Adriatic Sea.

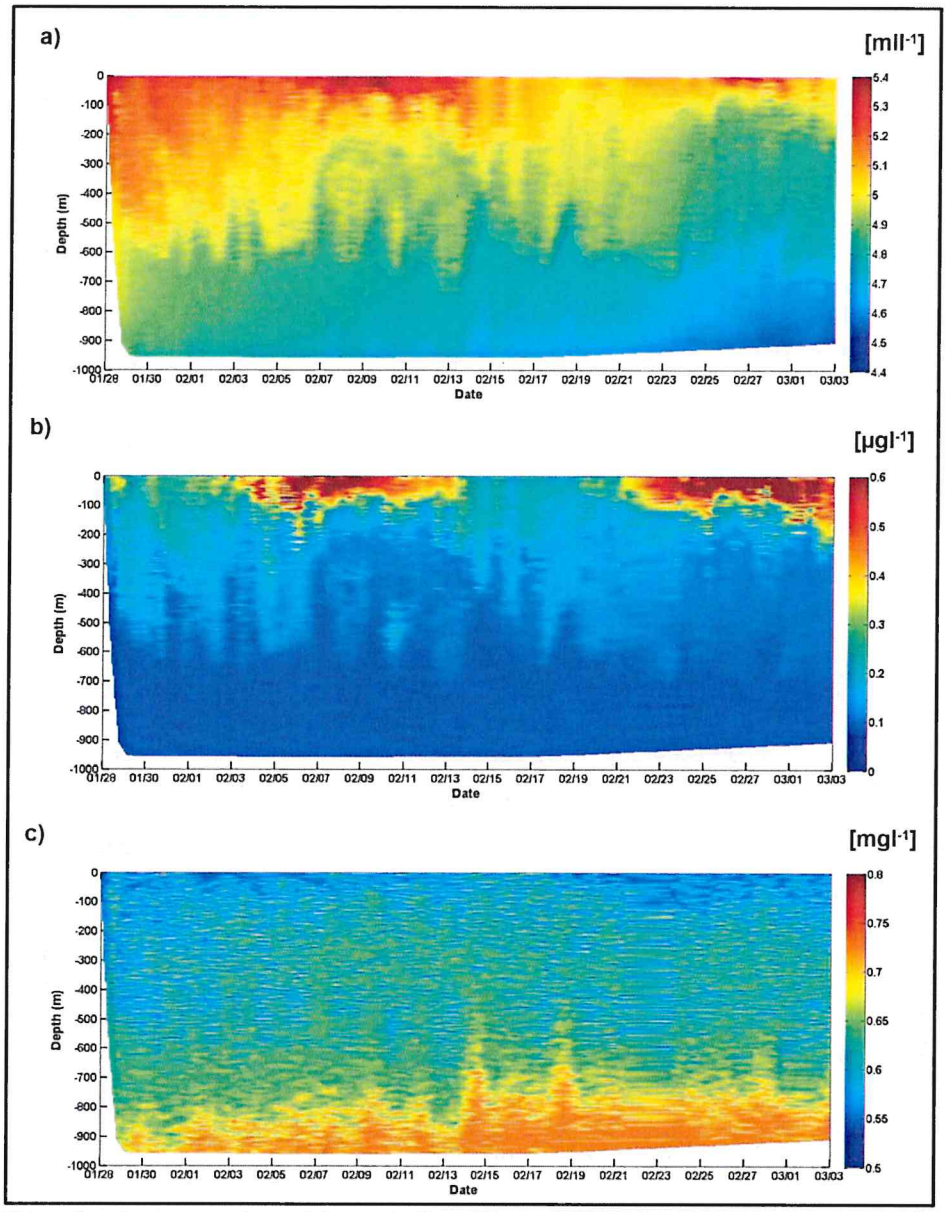

Figure 13: Dissolved oxygen (a), chlorophyll a (b) and CDOM (c) concentration along the glider path during the CONVEX21 experiment in the South Adriatic Sea.

4.3 Glider data processing and webpage

The glider data acquired during all the missions were processed and displayed in real time on the webpage: http://nettuno.ogs.trieste.it/sire/glider/glider_mission_now.php
Other webpages (password protected) with technical information and other parameters were available in real time to the OGS glider pilots. The scripts and the webpages were improved and optimized for the real-time data elaboration and generation of images. In particular, the plot of additional technical parameters was generated and posted on the piloting dedicated web pages.

A big effort was made to uniform the glider data format and parameter naming. This need is dictated by the fact that OGS owns different glider models mounting different payloads. Other

than temperature and salinity also the glider oxygen data for the whole recorded missions were deeply investigated. Oxygen concentration dataset was corrected by using in-situ validated oxygen measurements (Winkler samples, Winkler-calibrated float data, ...). The detailed computation that implies a complex procedure is reported in two documents: Gerin R. et al. (2020 a,b) and Gerin R. and Martellucci R, (2020).

5. Other activities in 2021

5.1 Near real-time data processing

The data of drifters, floats and gliders were processed and archived in near real-time at OGS. This processing includes some editing and the production of graphics and tables which are posted on the Argo-Italy web pages. In parallel, the raw drifter and float data were sent to global Data Assembly Centers (AOML/NOAA, Miami, Florida for the drifters and Coriolis, Ifremer, Brest, France for the floats). In addition, the SVP drifter and float data were distributed in near real-time on the Global Telecommunication System (GTS) and were identified by a WMO number.

The data of BGC and Bio floats were processed by Coriolis and made available in near-real time (files in Argo NetCDF format with real time QC) on the DAC server (ftp.ifremer.fr/ifremer/argo/dac/coriolis).

5.2 Delayed Mode quality control of Argo physical data

The delayed mode quality control (DMQC) of the physical data (pressure, temperature and salinity) provided by the Italian floats in the Mediterranean and Black seas was done for about 95 out of about 134 eligible floats (all information and statistics to create the D-files sent to Coriolis). The temperature and salinity data of those floats were quality controlled following the standard Argo procedure, covering the period 2010-2020. The OWC procedure is used to check and adjust salinity data. It is a statistical method, based on reference datasets. The accuracies of the float data are assessed by comparison of Argo salinity profiles with calibrated reference measurements. An accurate reference dataset plays an important role in the quality control analysis and these data have to be quite close in time and space to the float measurements. The latter is necessary, in order to reduce the effects both of the inter-annual and the seasonal variability of the Mediterranean Sea, mostly in the upper and intermediate layers of the water column. For these reasons, OGS collected CTD data in complement of the official reference dataset using two approaches: personal contacts and regional data services. The standard statistical method adopted by the Argo community for the salinity correction is strictly affected by the natural changes in the water column of the Mediterranean Sea and hence a careful interpretation of the method results is necessary. For this reason, we adopted other qualitative checks (i.e., the comparison between nearby floats and analysis of the deepest portion of the temperature-salinity diagram) in order to increase reliability of the analysis. The DMQC of the Italian floats deployed in the Southern Ocean (and South Pacific and Atlantic oceans) started in 2019 and was applied to 70 out of about 85 eligible floats.

OGS started the DMQC of the Deep-Argo physical data and updated the "deep" reference dataset in the Mediterranean Sea used for the quality control procedure.
One OGS expert was included in the BGC working group for the DMQC strategy in Europe.

5.3 Italian contribution to Argo bibliography in 2021

Kassis, D., Notarstefano, G., Ruiz-Parrado, I., Taillandier, V., Díaz-Barroso, L., et al., 2021. Investigating the capability of Argo floats to monitor shallow coastal areas of the Mediterranean Sea. hal-03330612v2. In: 9th EuroGOOS International conference, Shom; Ifremer; EuroGOOS AISBL, May 2021. Brest, France.

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6. Plans for 2022 and beyond

6.1 Floats

The Italian Ministry of Research has provided funding to buy 22 floats in 2022, including 5 instruments with dissolved oxygen sensors, 7 standard T/S floats, 7 standard T/S floats with Ice Detection Algorithm implemented, 2 Deep-Argo and 1 float with biogeochemical sensors.

The Italian deployment plans for 2022 and 2023 are detailed in Table 9. The main areas of interest are the Mediterranean and Black seas and the Southern Ocean.

Year	T/S floats (some of them with DO)		BGC floats		Deep floats		Total
	Quantity	Area	Quantity	Area	Quantity	Area	
2022	10 1 8	Mediterranean Black Sea South Hemisphere	2 1	Mediterranean Black Sea	1	Mediterranean	**23**
2023	10 1 8	Mediterranean Black Sea South Hemisphere	2 0	Mediterranean Black Sea	1	Mediterranean	**22**

Table 9. Italian float deployment plans for 2022-2023.

On the longer time frame, Italy is interested to maintain contributions to the Argo Core mission and the BGC and Deep Argo Extension with numbers similar to those listed in Table 9. OGS is committed to carry out DMQC on all the Argo floats of the Mediterranean and Black seas, and on some floats in the World Ocean, as part of the Euro-Argo RISE, MOCCA project and other European projects over the coming years.

6.2 Drifters

We plan to buy 60 SVP and 7 CODE drifters with the funding available in 2020-2021. Drifter deployment plans for 2021 and 2022 are described in Table 10.

Year	Drifters	
	Quantity	Area
2021	20 SVP	Southern Ocean
	10 SVP	Mediterranean
	7 CODE	Mediterranean
2022	10 SVP	Southern Ocean
	20 SVP	Mediterranean

Table 10. Argo-Italy drifter deployment plans for 2021-2022.

6.3 Gliders

In 2021, we expect to run the south Adriatic Sea missions using the SeaGlider SG554 and SG661 to monitor pre and post dense water formation phases and to refurbish the SG554 at the factory.

6.4 Other

MUR is committed to provide funding in order to sustain the Italian contribution to Argo beyond 2021 as a founding member of the Euro-Argo Research Infrastructure Consortium. In addition to the Italian national funding, OGS has funding from other projects for activities related to Argo, ocean gliders and drifters.

7. Distribution list

This report will be distributed, amongst others, to the Argo-Italy International Scientific Advisory Committee:

Luca Centurioni (lcenturioni@ucsd.edu)
Laurent Mortier (mortier@locean-ipsl.upmc.fr)
Pierre-Yves Le Traon (pierre-yves.letraon@mercator-ocean.fr)
Enrico Zambianchi (enrico.zambianchi@uniparthenope.it)
Annalisa Griffa (agriffa@rsmas.miami.edu)
Nadia Pinardi (n.pinardi@sincem.unibo.it)

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