

# Argo-España

*Parte de la estrategia global de observación del océano*



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## **Report on Argo float WMO *6901275* - *6901277* deployment**

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ARGO ESPAÑA – IEO / 19 – 57

Argo float deployment for  
**WMO 6901275 - 6901277**

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## 1. Deployment design

Following the Argo program goals, the float density criteria demands a coverage distribution of  $3^\circ \times 3^\circ$  grid cells (Fig. 1). In order to maintain the global Argo network coverage and taking in account the current distribution of the Argo floats, Argo España planned 1 float deployment in the Balearic sea area after some gaps in the network were identified.

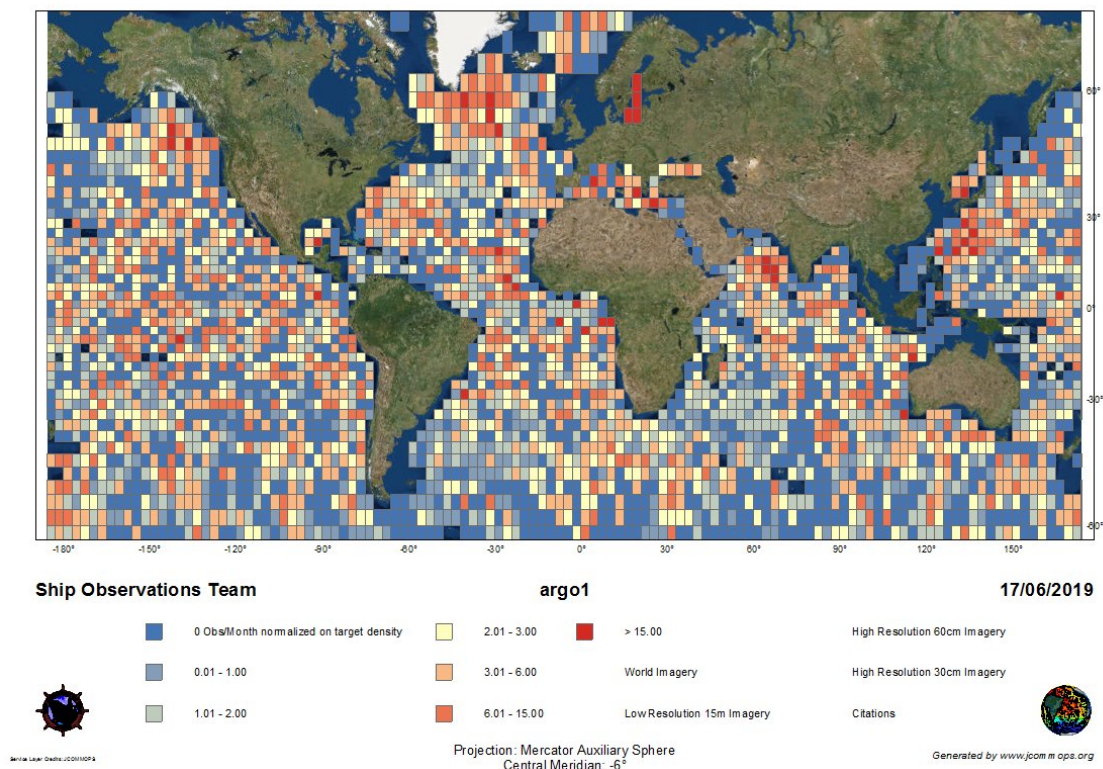


Figure 1. Density of Argo observations in the 2019 May vs the Argo 2020 challenge. Deployments in the South Atlantic Ocean are needed if density observations goals want to be reached.

As PI of the *CANALES0219* cruise, Inmaculada Ruiz (SOCIB) was requested to lead the Argo deployment planning. The R/V SOCIB was planned to carry out the research in the Balearic Sea, through Denia - Ibiza - Mallorca (Fig.2). Floats deployed at the Balearic Sea are occasionally driven out to shoreland, making this area a difficult region to observe continuously. The survey was divided in several transects, which includes an ideal location for Argo España purposes. Station RDM\_05 was selected for the Argo float deployment.

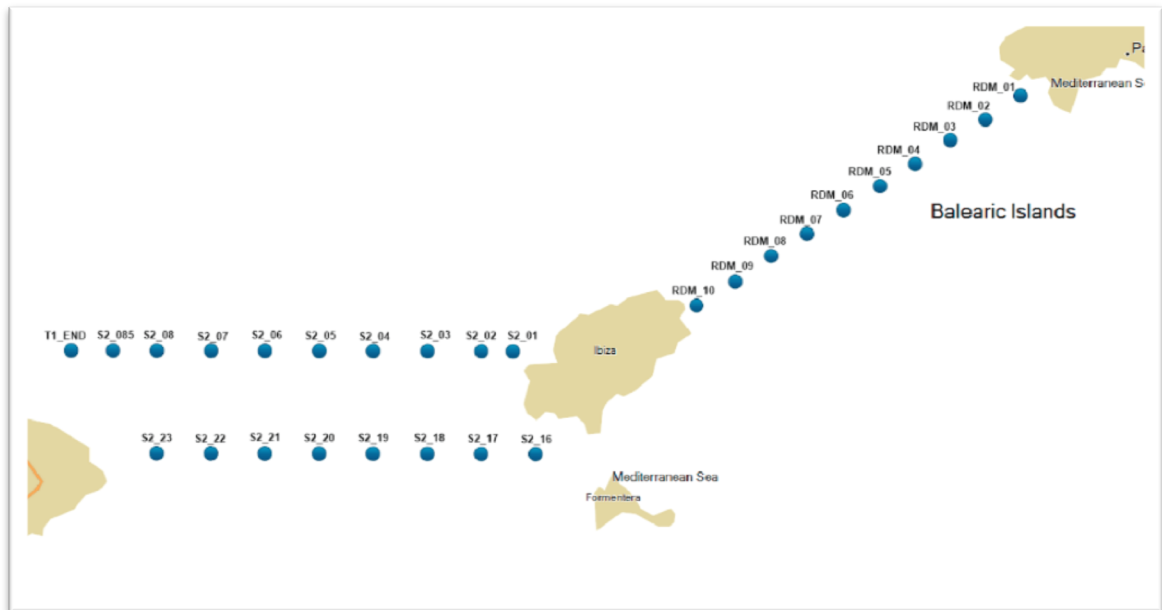


Figure 2. Argo's deployment plan for the *CANALES0219* cruise at RDM\_05

## 2. Deployment data

Information of the float deployment is showed in this paragraph.

- a. **WMO 6901275.** The following table contains all the data of the WMO 6901275 deployment during *CANALES0219* cruise. No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on July 01, 2019 and all the information was registered at the Argo Information Center database. The data is free and publicly available through the Argo data stream:

<http://www.oceanografia.es/argo/datos/ArgoEsGraficos/6901275.html>

However, the float was found north of Mallorca island (Soller) on Apr 29, 2019 after 16 cycles since the deployment. The float was located and recovered by SOCIB team. After a thorough inspection, the float was planned to be redeployed with a new WMO 6901277.

DATE AND TIME	03 - 05 - 2019 / 11:44 UTC
DEPLOYMENT LOCATION	39°19.43' N 002°03.91' E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	CANALES0219
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AL2500 - 17SP024
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	1000
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	700
WEATHER CONDITIONS	Calm
DEPLOYMENT OPERATOR	Nikolaus Wirth

Table 1. WMO 6901275 information deployment.

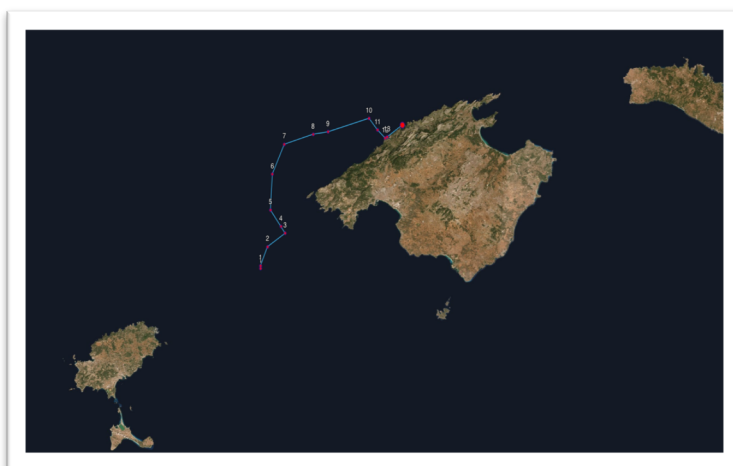


Figure 3 (a) and Figure 3 (b). Deployment maneuver of the float WMO 6901275 from R/V SOCIB (a). Deployment location (spot number 1) (b).

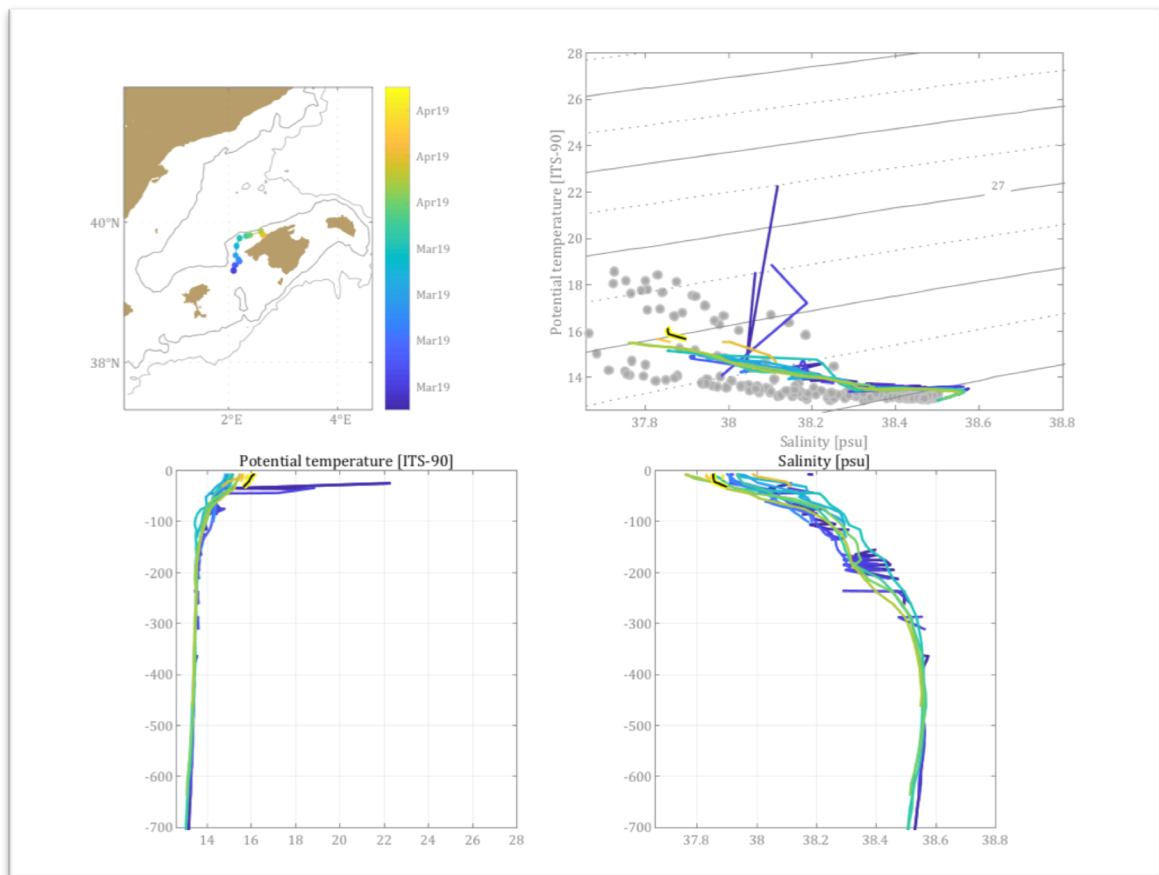


Figure 4. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901275 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V SOCIB. Potential Temperature and Salinity profiles are also shown in the lower side on the picture.

- b. **WMO 6901277**. The following table contains all the data of the WMO 6901277 deployment during *CANALES0219* cruise, deployed at S2\_05 station (Fig. 2). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Aug 06, 2019 and all the information was registered at the Argo Information Center database. The data is free and publicly available through the Argo data stream:

<http://www.oceanografia.es/argo/datos/ArgoEsGraficos/6901277.html>

DATE AND TIME	31 - 07 - 2019/ 10:00 UTC
DEPLOYMENT LOCATION	39°00.028' N 0°44.056' E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	CANALES0719
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AL2500 - 17SP024
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	1000
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	960
WEATHER CONDITIONS	Calm
DEPLOYMENT OPERATOR	Inmaculada Ruiz - Irene Lizarán

Table 2. WMO 6901277 information deployment.

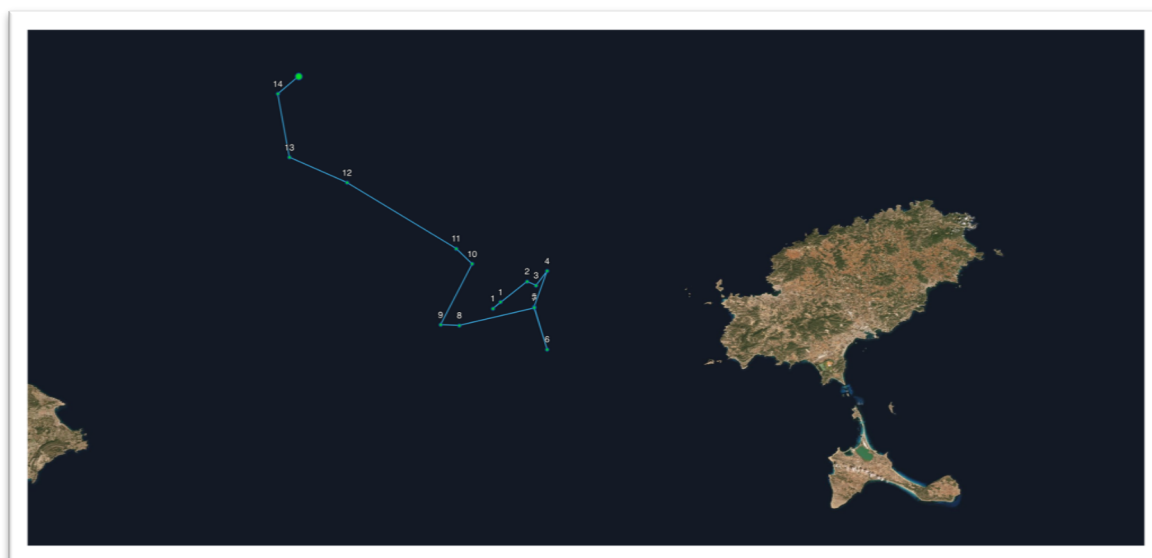


Figure 5 (a) and Figure 5 (b). Deployment maneuver of the float WMO 6901277 from R/V SOCIB (a). Deployment location (green spot) (b).

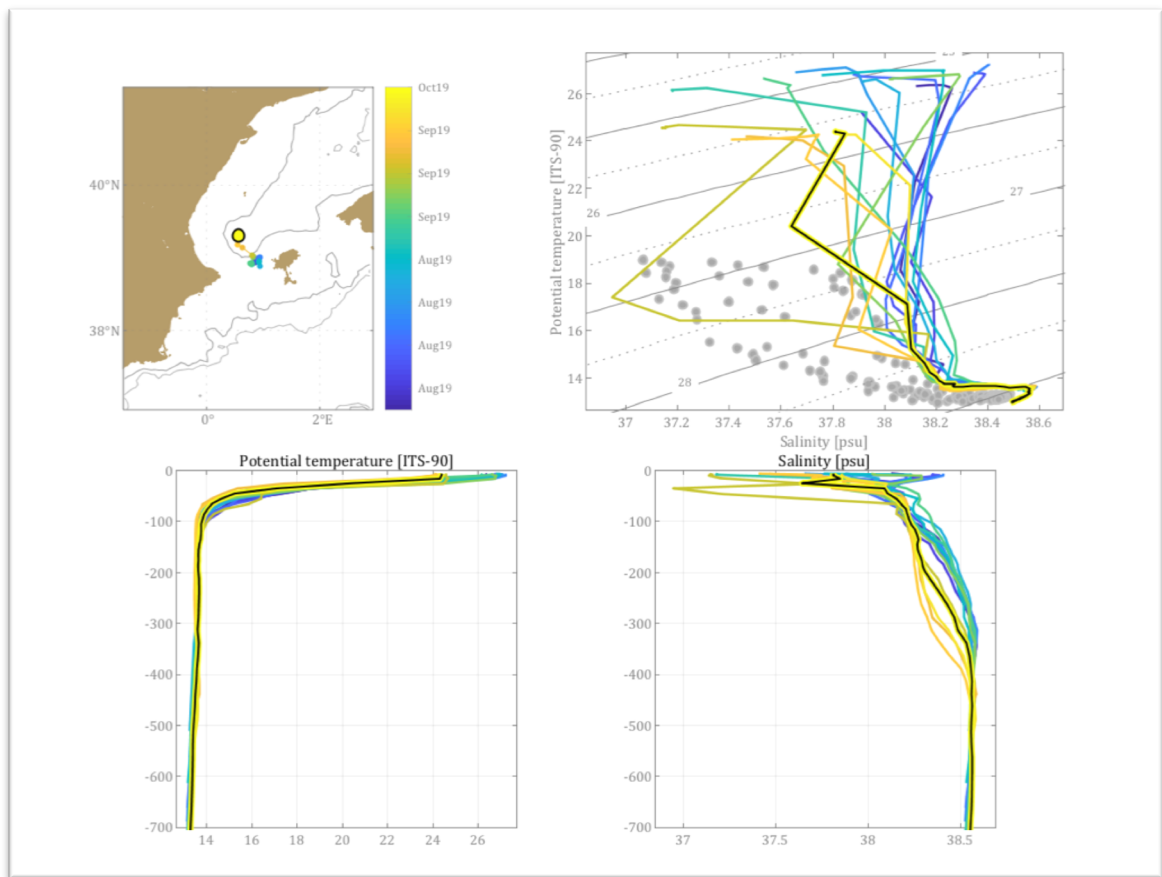


Figure 6. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901277 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V SOCIB. Potential Temperature and Salinity profiles are also shown in the lower side on the picture.

## D. Float configuration

“MC” parameters (table 3) were set according to the scientific requirements and the oceanographic area of study (Balearic Sea). In the first instance, the float WMO 6901275 will dive up to 2000 m depth carrying out 5 cycles of 48 hours, with a parking depth of 700 m. After, the float will dive up to 2000 m depth carrying out the rest of the cycles (MC 0) with a period of 5 days and a parking depth of 1000 m.

Command no.	Name	Default Value	Units
<b>Mission Commands</b>			
MC0	Total Number of Cycles	300	Whole number
MC1	Number of cycle with “Cycle Period 1”	5	
MC2	Cycle Period 1	48	Hours
MC3	Cycle Period 2	120	Hours
MC4	Reference Day	2	Number of days
MC5	Estimated time at the surface	6	Hours
MC6	Delay Before Mission	0	Minutes
MC7	Descent Sampling Period	0	Seconds
MC8	Drift Sampling Period	12	Hours
MC9	Ascent Sampling Period	10	Seconds
MC10	Drift Depth for “MC1” first cycles	<del>1000</del> 700	dBar
MC11	Profile Depth for “MC1” first cycles	2000	dBar
MC12	Drift Depth after “MC1” cycles are done	1000	dBar
MC13	Profile Depth after “MC1” cycles are done	2000	dBar
MC14	Threshold surface/Intermediate Pressure	10	dBar
MC15	Threshold Intermediate /bottom Pressure	200	dBar
MC16	Thickness of the surface slices	1	dBar
MC17	Thickness of the intermediate slices	10	dBar
MC18	Thickness of the bottom slices	25	dBar
MC19	Iridium End Of life period (UNUSED)	60	Minutes
MC20	2 <sup>nd</sup> Iridium Session Wait Period (UNUSED)	0	Minutes
MC21	Grounding mode (0= Shift, 1 : Stay grounded)	0	
MC22	Grounding switch pressure	50	dBar
MC23	Delay at surface if grounding at surface	1	Minutes
MC24	Optode type (0: none, 1 : 4330, 2 : 3830)	0	

Table 3. Configuration sheet for all the floats deployed during *CANALES0219* and *CANALES0719* cruise.

## E. Acknowledgements

Argo España would like to thank Inmaculada Ruiz, Irene Lizarán and the rest of the crew of the R/V SOCIB, who cooperated for the success of the mission.