

# Argo-España

*Parte de la estrategia global de observación del océano*



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## Report on Argo float deployments of *RAPROCAN 1810* cruise

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ARGO ESPAÑA – IEO / 19 – 50

Argo float deployment for  
**WMO 6901254, 6901271 and 6901273.**

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A. González-Santana - P. Vélez-Belchí  
Instituto Español de Oceanografía

## 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 3 float deployments in the Canary basin ocean area after some gaps in the network were identified.

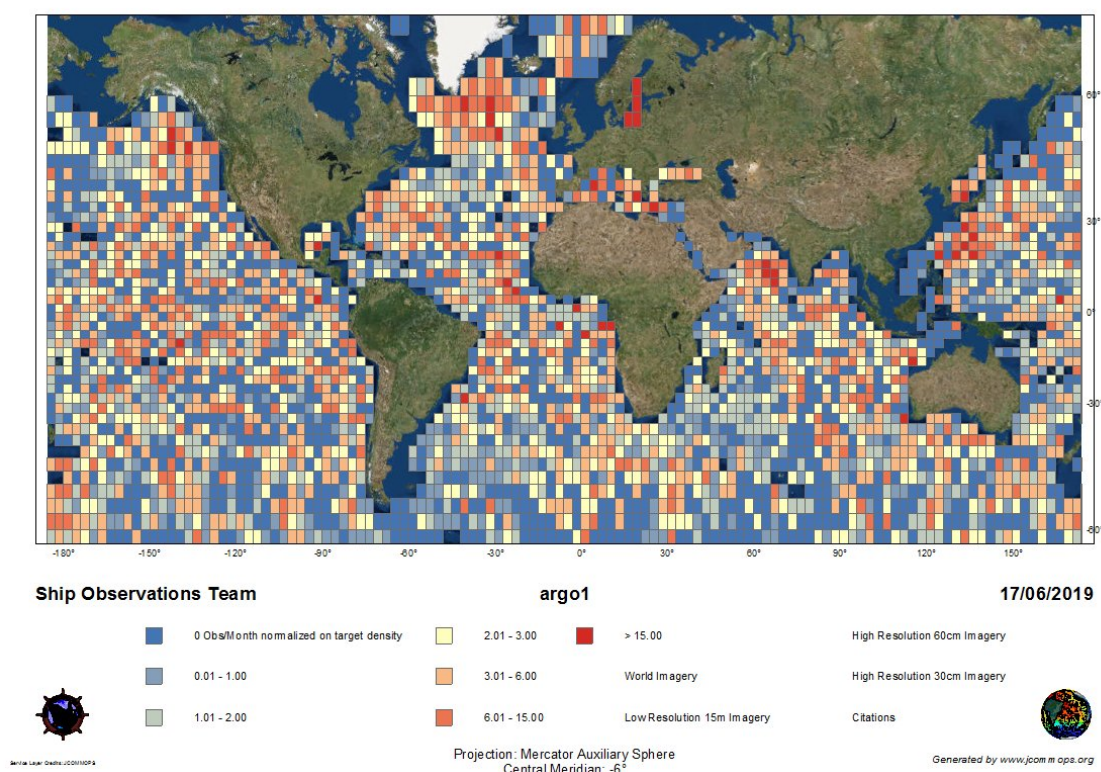


Figure 1. Density of Argo observations in the 2019 May vs the Argo 2020 challenge. Deployments in the Canary basin ocean are needed if density observations goals want to be reached.

As PI of the *RAPROCAN 1810* cruise, Pedro Vélez Belchí (Spanish Oceanographic Institution - IEO) was requested to lead the Argo deployments planning. The R/V Ángeles Alvariño was planned to carry out the research between  $20^\circ \text{ N} - 30^\circ \text{ N}$  and  $12^\circ \text{ W} - 12^\circ \text{ W}$  (Fig.2). The survey was divided in 100 stations, which includes ideal locations for Argo España purposes. A float from Euro - Argo network was deployed at the European Station of Temporary Ocean Series of the Canary Islands (ESTOC). The second float was deployed south of the archipelago and the last float was deployed on the R/V Ángeles Alvariño's way back to land (Cadiz), east of Morocco. Please find the last float's report at:

<http://www.oceanografia.es/argo/Informes/6901273InformeLanzamiento.pdf>

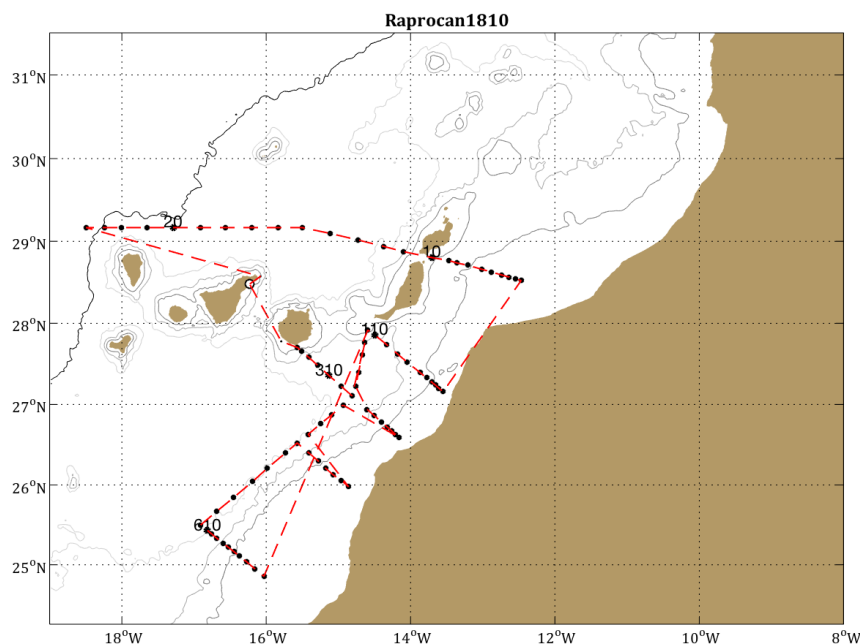


Figure 2. Stations distribution of the *RAPROCAN 1810* cruise.

## 2. Deployment data

Information of each float deployment is showed in this paragraph.

- a. **WMO 6901254.** The following table contains all the data of the WMO 6901254 deployment during *RAPROCAN 1810* cruise. No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on November 6, 2018 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/6901254.html>

DATE AND TIME	2018 - 10 - 23 / 17:55 UTC
DEPLOYMENT LOCATION	29°09.98' N 15°30.06' W
DEPLOYMENT PLATFORM	R/V Ángeles Alvariño
CRUISE ID	<i>RAPROCAN 1810</i>
FLOAT OWNER	IEO
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AL2500-17SP003
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	1000
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	3676
WEATHER CONDITIONS	<i>Light wind – rippled surface</i>
DEPLOYMENT OPERATOR	Alberto González Santana

Table 1. WMO 6901254 information deployment.

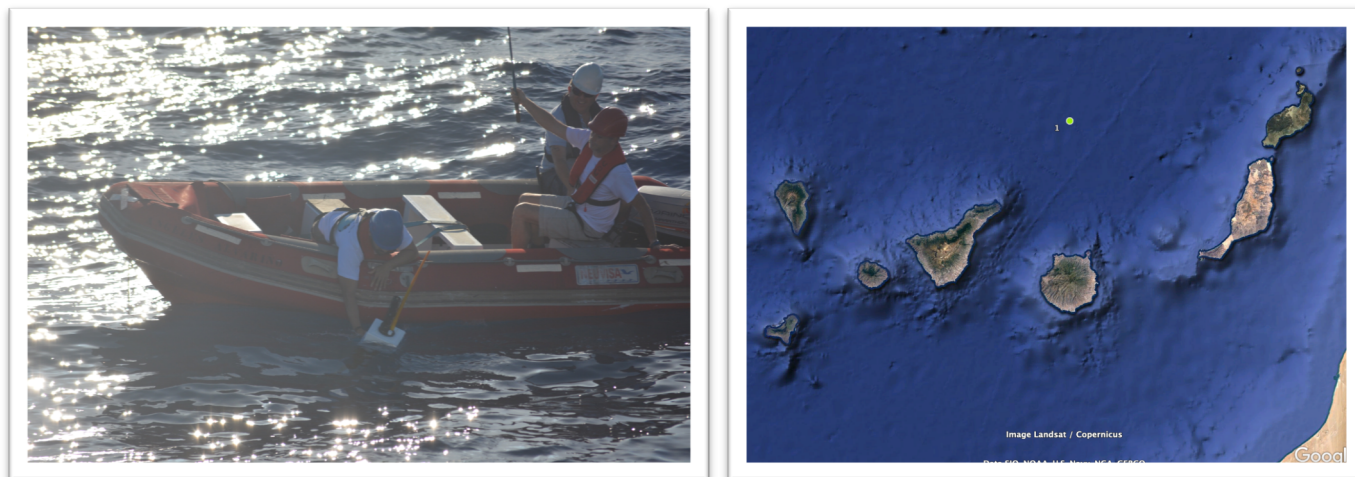


Figure 3 (a) and Figure 3 (b). R/V Ángeles Alvariño's staff and scientific crew during the deployment maneuver of the float WMO 6901254 (a). Deployment location (green spot) (b).

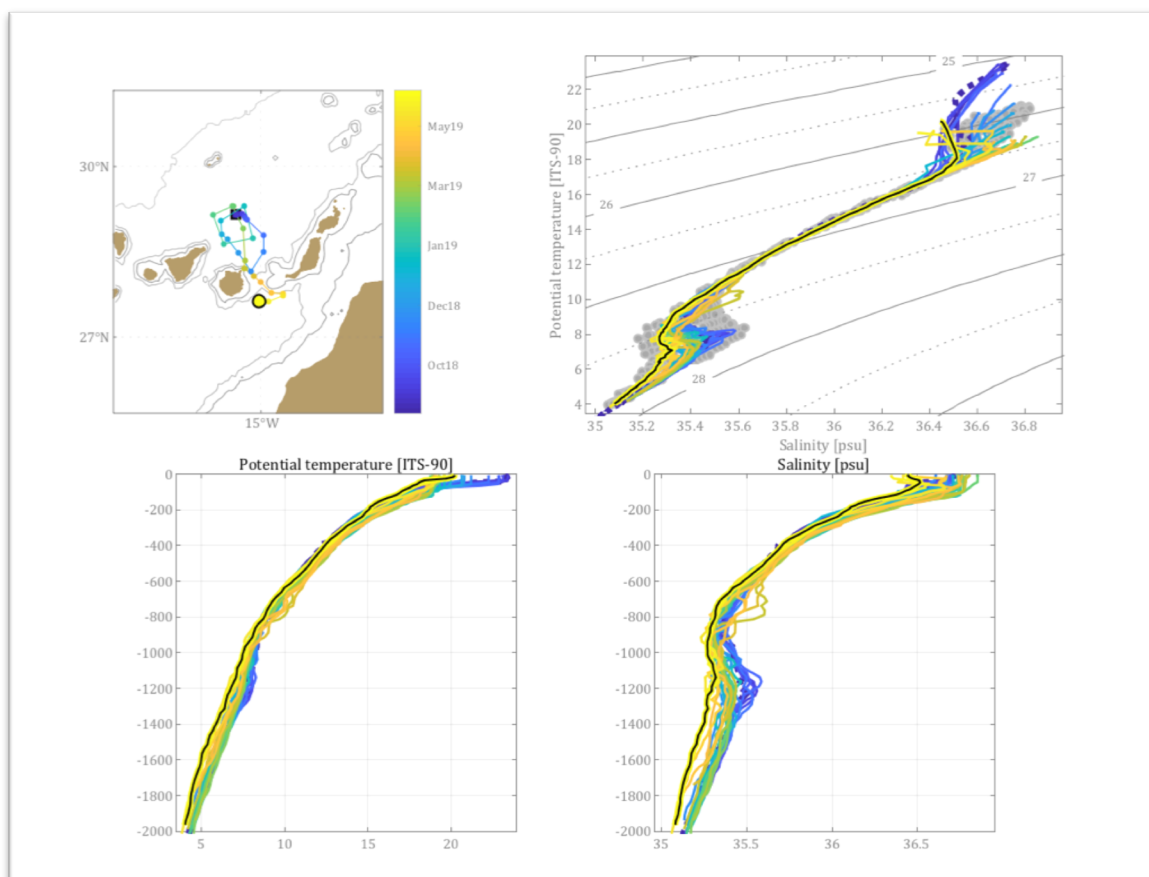


Figure 4. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 6901254 is shown in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V Ángeles Alvariño. Potential Temperature and Salinity profiles are also shown in the lower side on the picture.



- b. **WMO 6901271**. The following table contains all the data of the WMO 6901271 deployment during *RAPROCAN 1810* cruise. No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on November 6, 2018 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/6901271.html>

DATE AND TIME	2018 - 10 - 30 / 00:00 UTC
DEPLOYMENT LOCATION	26° 22' N -16° 33' W
DEPLOYMENT PLATFORM	R/V Ángeles Alvariño
CRUISE ID	<i>RAPROCAN 1810</i>
FLOAT OWNER	IEO
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AI2500-17SP020
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	1000
PROFILE FEPTH (m)	2000
DEPTH	3000
WEATHER CONDITIONS	<i>Light wind - rippled surface</i>
DEPLOYMENT OPERATOR	Alberto González Santana

Table 2. WMO 6901271 information deployment.

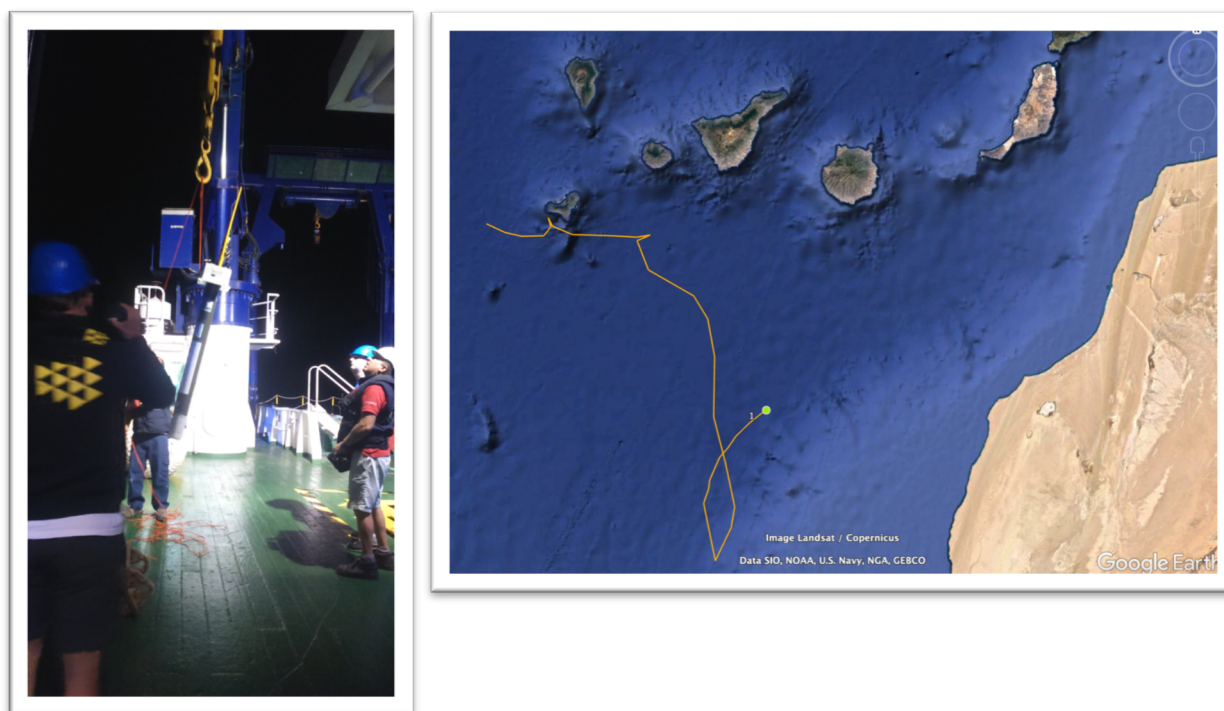


Figure 5 (a) and Figure 5 (b). R/V Ángeles Alvariño's staff during the deployment maneuver of the float WMO 6901271 (a). Deployment location (green spot) (b).

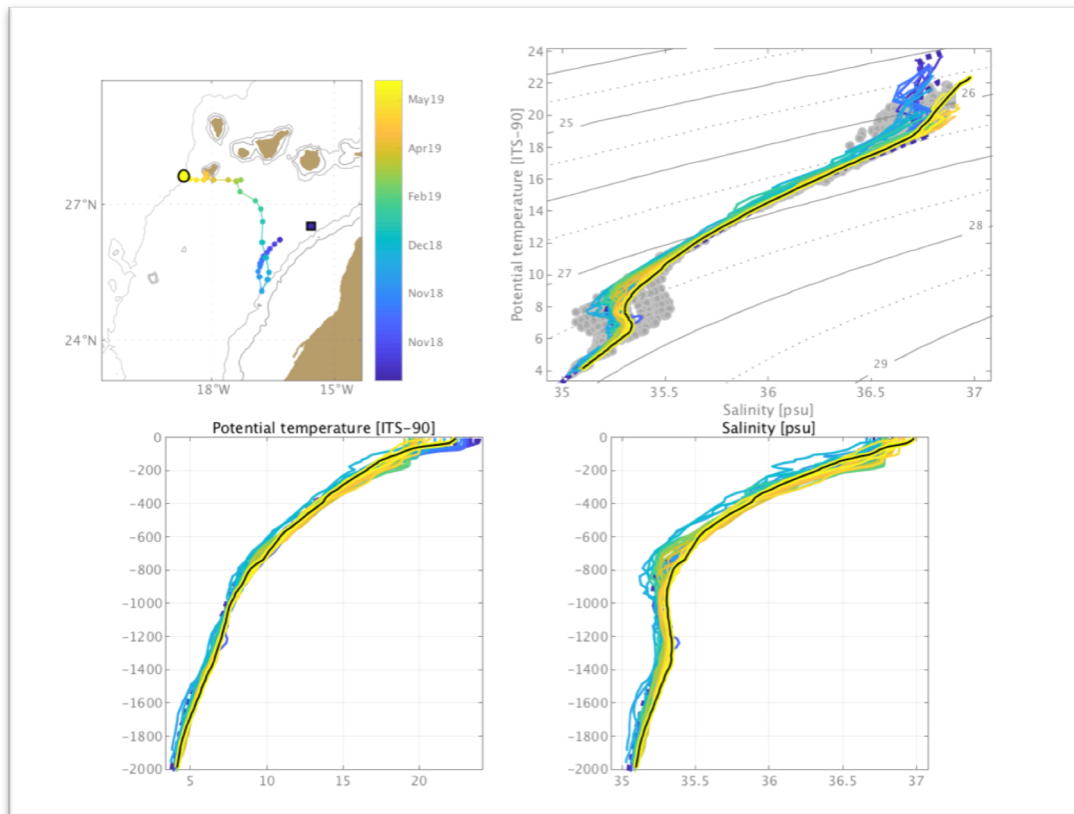


Figure 6. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901271 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V Ángeles Alvariño. Potential Temperature and Salinity profiles are also shown in the lower side on the picture.

### 3. Floats configuration

Floats configuration was set as default by NKE for all the floats. “MC” parameters (table 3) were set according to the scientific requirements and the oceanographic area of study (Canary Basin). The floats will dive up to 2000 m depth carrying out cycles of 10 days, with 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”	300	
MC2	Cycle Period 1	240	Hours
MC3	Cycle Period 2	240	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	1000	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	Ontode type (0: none, 1 : 4330, 2 : 3830)	0	

Table 3. Configuration sheet for all the floats deployed during *RAPROCAN 1810* cruise.

### 4. Acknowledgements

Argo España would like to thank the crew of the R/V Ángeles Alvariño, who cooperated for the success of the mission. Both Argo floats have been co - financed by FEDER funds from “*Programa Operativo Crecimiento Inteligente 2014 - 2020*”.