

Argo-España

Parte de la estrategia global de observación del océano



Report on Argo float deployment of *TUNIBAL_0718* cruise

ARGO ESPAÑA – IEO / 18 – 45

Argo float deployment for
WMO 6901267

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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 passage between Mallorca island and Menorca island (Balearic Sea) after some gaps in the network were identified.

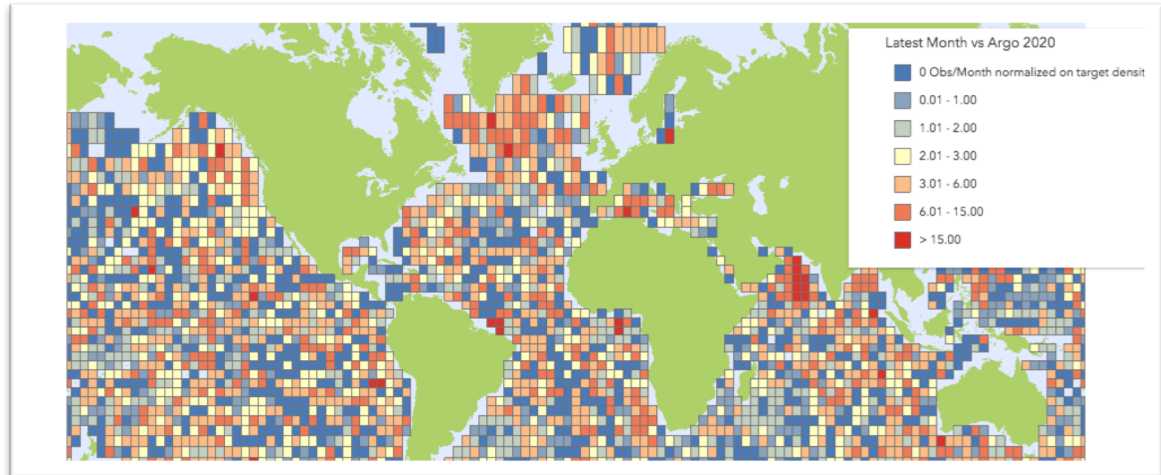


Figure 1. Density of Argo observations in the 2018 May vs the Argo 2020 challenge.

As PI of the *TUNIBAL_0718* cruise, Rosa Balbín (Spanish Oceanographic Institution - IEO) was requested to support the Argo deployments planning. The R/V Ángeles Alvariño was planned to carry out the research between 38° N to 40° N and 0° to 5° E (Fig.2), which includes ideal locations for Argo España purposes. The survey was divided in 96 stations and the station number 53 was selected for the Argo deployment.

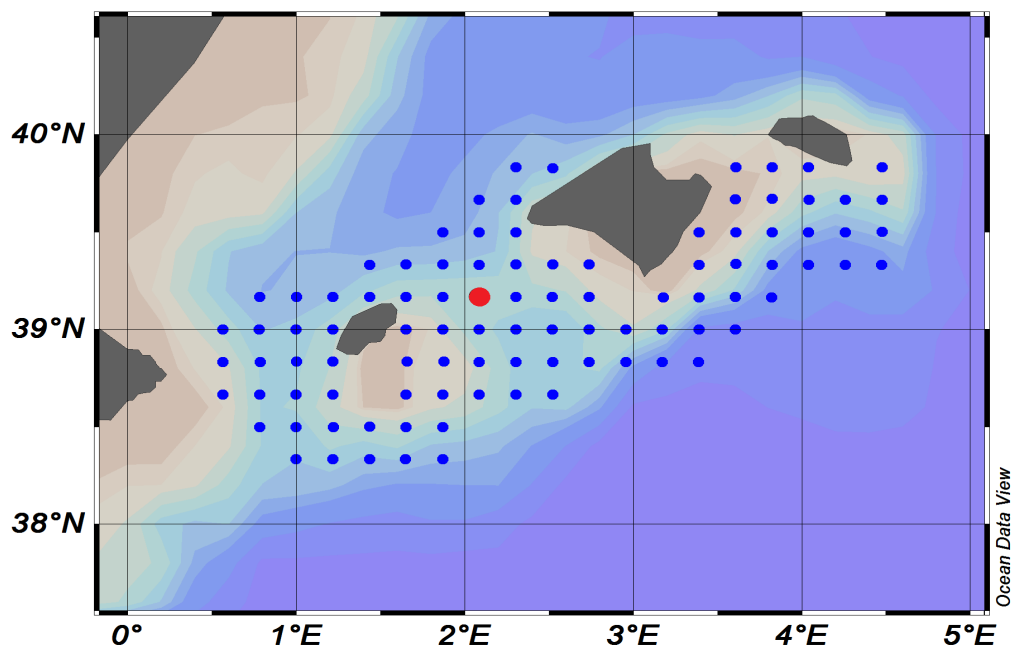


Figure 2. Stations distribution of the *TUNIBAL_0718* cruise and estimated position of the Argo float deployment (station number 51).

2. Deployment data

Information of the float deployment is showed in this paragraph.

- a. **WMO 6901267**. The following table contains all the data of the WMO 6901267 deployment during *TUNIBAL_0718* cruise. No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified 19 July, 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/6901267.html>

DATE AND TIME	2018 - 07 - 18 / 15:30 UTC
DEPLOYMENT LOCATION	39° 10.004' N 02° 05.102' W
DEPLOYMENT PLATFORM	R/V Ángeles Alvariño
CRUISE ID	<i>TUNIBAL_0718</i>
FLOAT OWNER	IEO
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AL2500 - 17SP016
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	750
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	807
WEATHER CONDITIONS	<i>Small wavelets</i>
DEPLOYMENT OPERATOR	Verónica Cainzos

Table 1. WMO 6901267 information deployment.

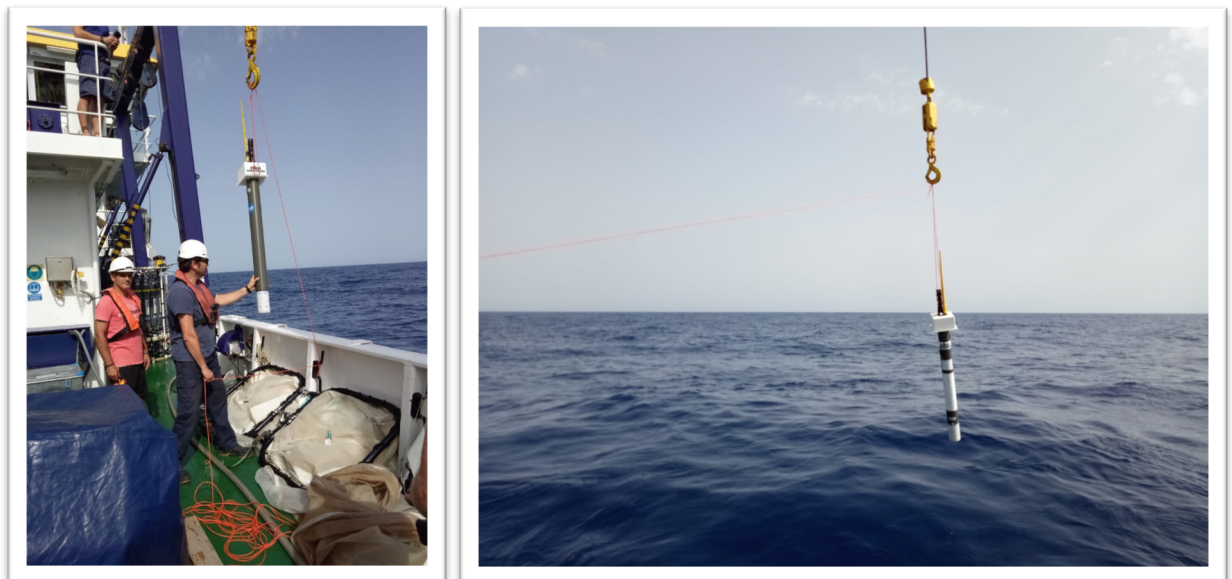


Figure 3 (a) and Figure 3 (b). R/V Ángeles Alvariño's staff during the deployment maneuver of the float WMO 6901267 (a). Float deployment (b).

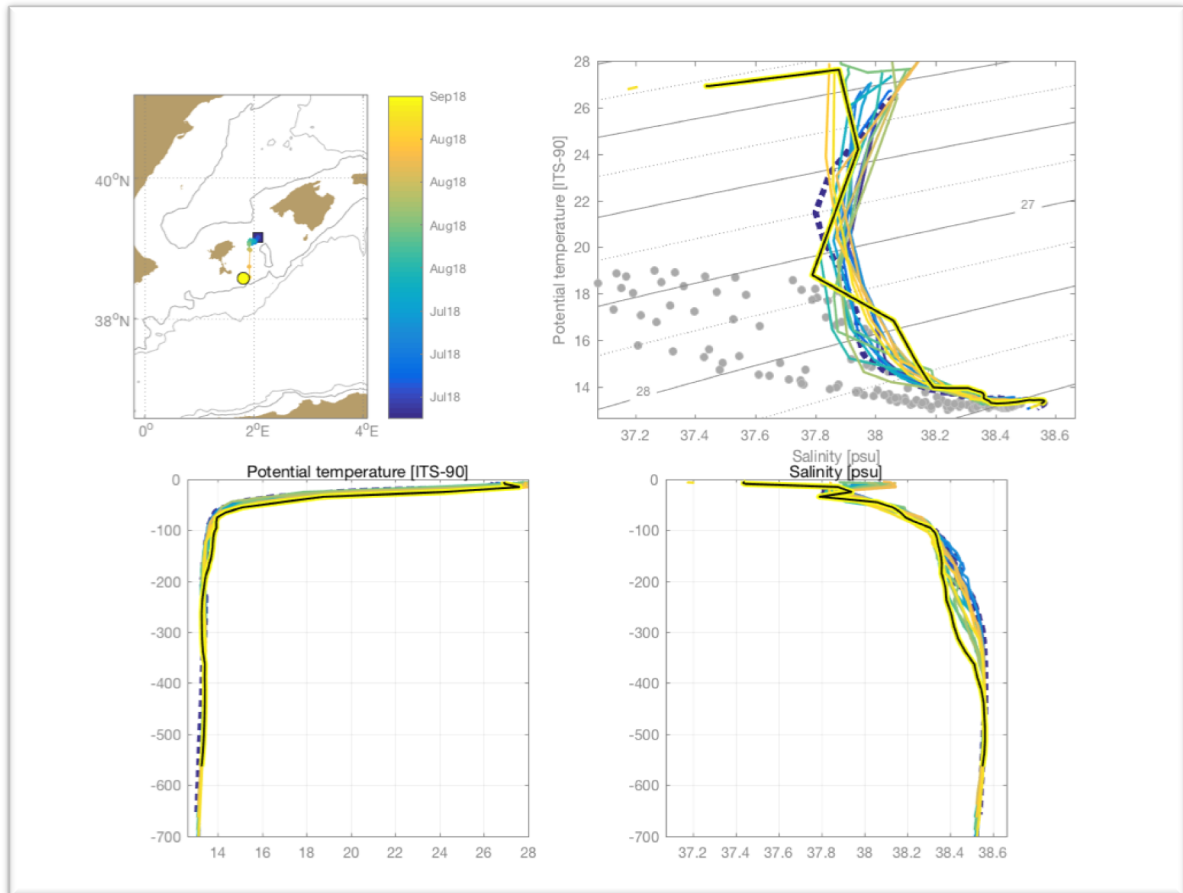


Figure 4. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901267 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the last profile carried out 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

“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 6901267 will dive up to 800 m depth carrying out 10 cycles of 48 hours, with a parking depth of 500 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 750 m.

Command no.	Name	Def Value	Units
Mission Commands			
MC0	Total Number of Cycles	300	Whole number
MC1	Number of cycle with "Cycle Period 1"	300 10	Number of days
MC2	Cycle Period 1	240 48	Hours
MC3	Cycle Period 2	240 120	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	1000 500	dBar
MC11	Profile Depth for "MC1" first cycles	2000 800	dBar
MC12	Drift Depth after "MC1" cycles are done	1000 750	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 transmission period (UNUSED)	60	Minutes
MC20	2 nd 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)	1	

Table 2. Configuration sheet for all the floats deployed during *TUNIBAL_0718* cruise.

4. Acknowledgements

Argo España would like to thank Patricia Reglero (IEO), Raúl Láiz (IEO), Verónica Cainzos (IEO), Safo Piñeiro (IEO) and the rest of the crew of the R/V Ángeles Alvariño, who cooperated for the success of the mission. The Argo floats have been co - financed by FEDER funds from "*Programa Operativo Crecimiento Inteligente 2014 - 2020*".



Figure 5. Deployment location from CLS satellite viewer (ref. 44267).