

Argo-España

Parte de la estrategia global de observación del océano



Report on Argo float deployments of *STOCA 201806* cruise

ARGO ESPAÑA – IEO / 18 – 44

Argo float deployment for
WMO 6901260 and 6901264.

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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 2 float deployments in Cádiz Gulf area after some gaps in the network were identified.

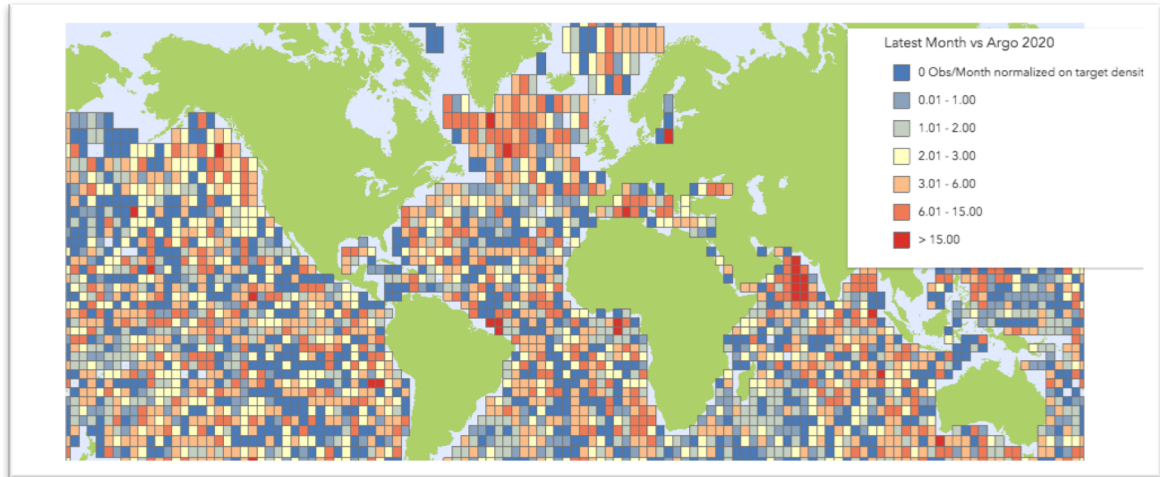


Figure 1. Density of Argo observations in the 2018 May vs the Argo 2020 challenge. There are no observations at Cadiz Gulf area so far, which makes it a remarkable area for potential deployments.

As PI of the *STOCA 201806* cruise, Ricardo F. Sánchez Leal (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 $35^\circ 45'N$, $37^\circ 50'N$ and $07^\circ 30'W$, $5^\circ 45'W$ (Fig.2), which includes ideal locations for Argo España purposes. The survey was divided in 68 stations; “SP-7” and “TGD7” stations were selected for the Argo deployments.

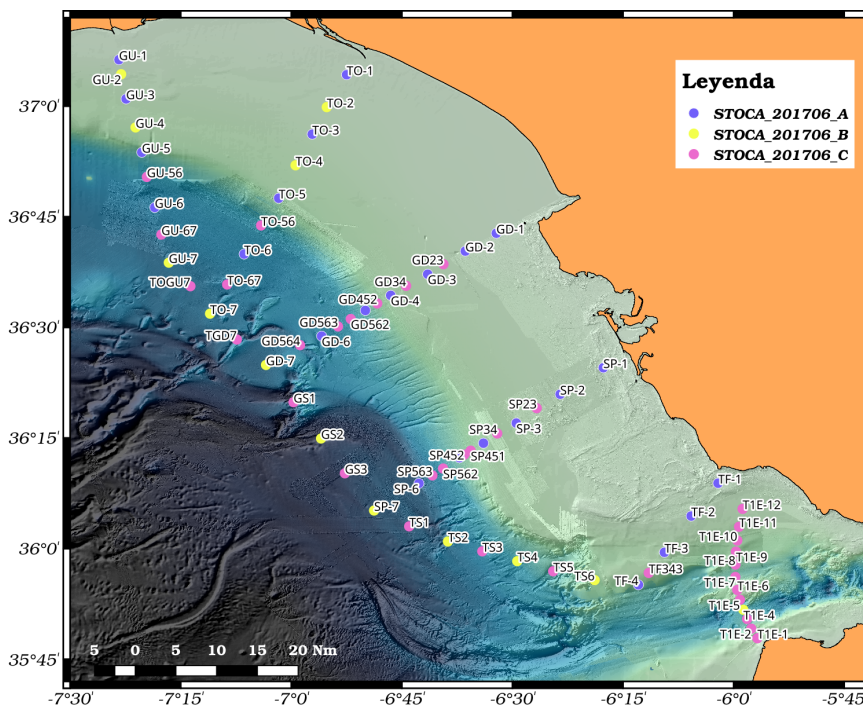


Figure 2. Stations distribution of the *STOCA 201806* cruise and estimated positions of the Argo float deployments (SP - 7 and TGD7).

2. Deployment data

Information of each float deployment is showed in this paragraph.

- a. **WMO 6901264.** The following table contains all the data of the WMO 6901264 deployment during *STOCA 201806* cruise. No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified 19 June, 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/6901264.html>

DATE AND TIME	2018 - 06 - 17 / 18:39 UTC
DEPLOYMENT LOCATION	35° 59.98' N 06° 52.47' W
DEPLOYMENT PLATFORM	R/V Ángeles Alvariño
CRUISE ID	<i>STOCA 201806</i>
FLOAT OWNER	IEO
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AI2500-17SP013
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	800
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	760
WEATHER CONDITIONS	<i>Marejadilla</i>
DEPLOYMENT OPERATOR	Ricardo F. Sánchez Leal

Table 1. WMO 6901264 information deployment.

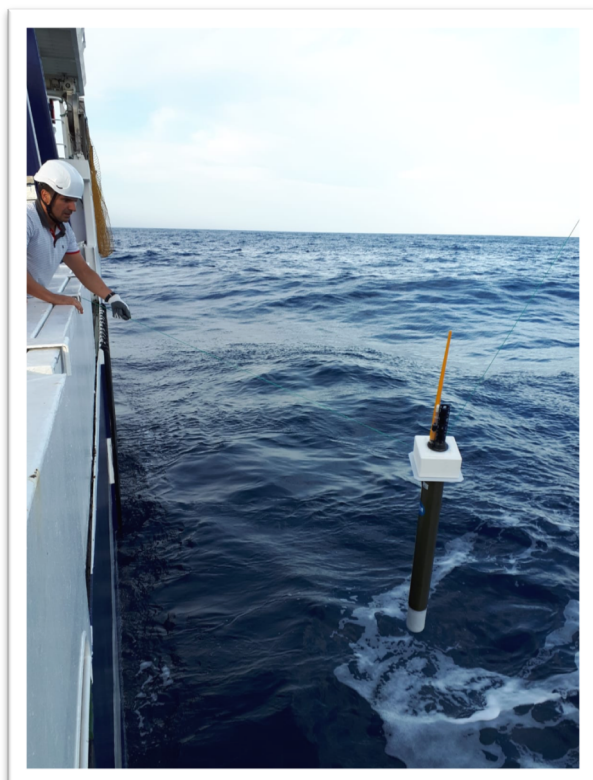


Figure 3 (a) and Figure 3 (b). R/V Ángeles Alvariño's staff during the deployment maneuver of the float WMO 6901264 (a). Deployment location (ref. 44224) from CLS satellite viewer (b).

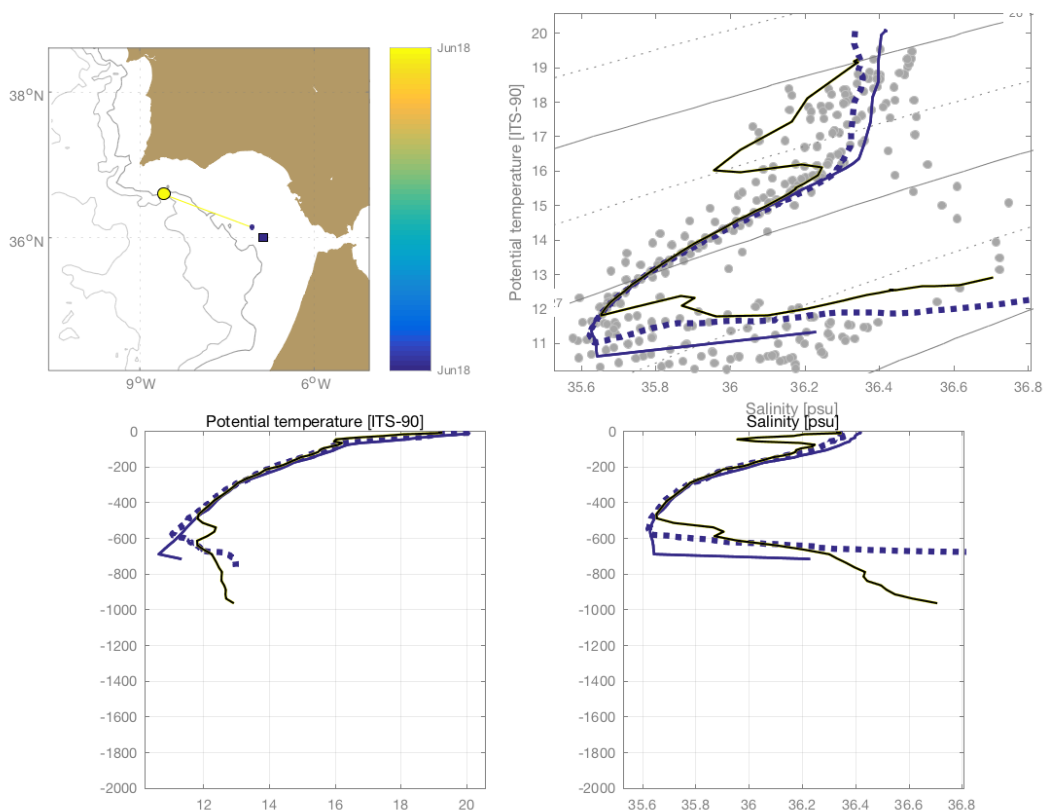


Figure 4. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901264 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out 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.

- b. **WMO 6901260**. The following table contains all the data of the WMO 6901260 deployment during *STOCA 201806* cruise. No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified 19 June, 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/6901260.html>

DATE AND TIME	2018 - 06 - 18 / 19:59 UTC
DEPLOYMENT LOCATION	36° 17.635' N 07° 13.628' W
DEPLOYMENT PLATFORM	R/V Ángeles Alvariño
CRUISE ID	<i>STOCA 201806</i>
FLOAT OWNER	IEO
PLATFORM TYPE	NKE Arvor - L
SERIAL NUMBER	AI2500-17SP009
TRANSMISSION SYSTEM	ARGOS
PARKING DEPTH (m)	800
PROFILE FEPTH (m)	2000
DEPTH	1006
WEATHER CONDITIONS	<i>Marejadilla</i>
DEPLOYMENT OPERATOR	Ricardo F. Sánchez Leal

Table 2. WMO 6901260 information deployment.

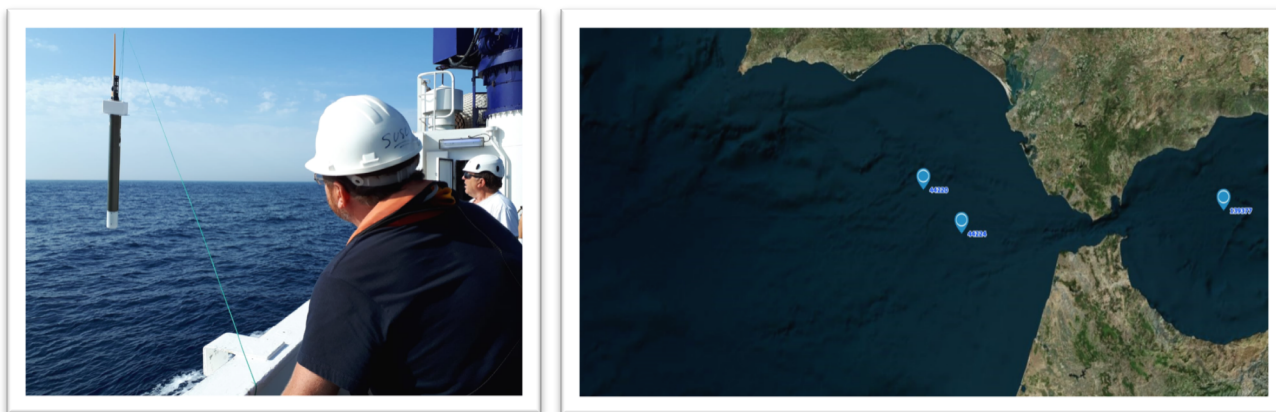


Figure 5 (a) and Figure 5 (b). R/V Ángeles Alvariño's staff during the deployment maneuver of the float WMO 6901260 (a). Deployment location (ref. 44220) from CLS satellite viewer (b).

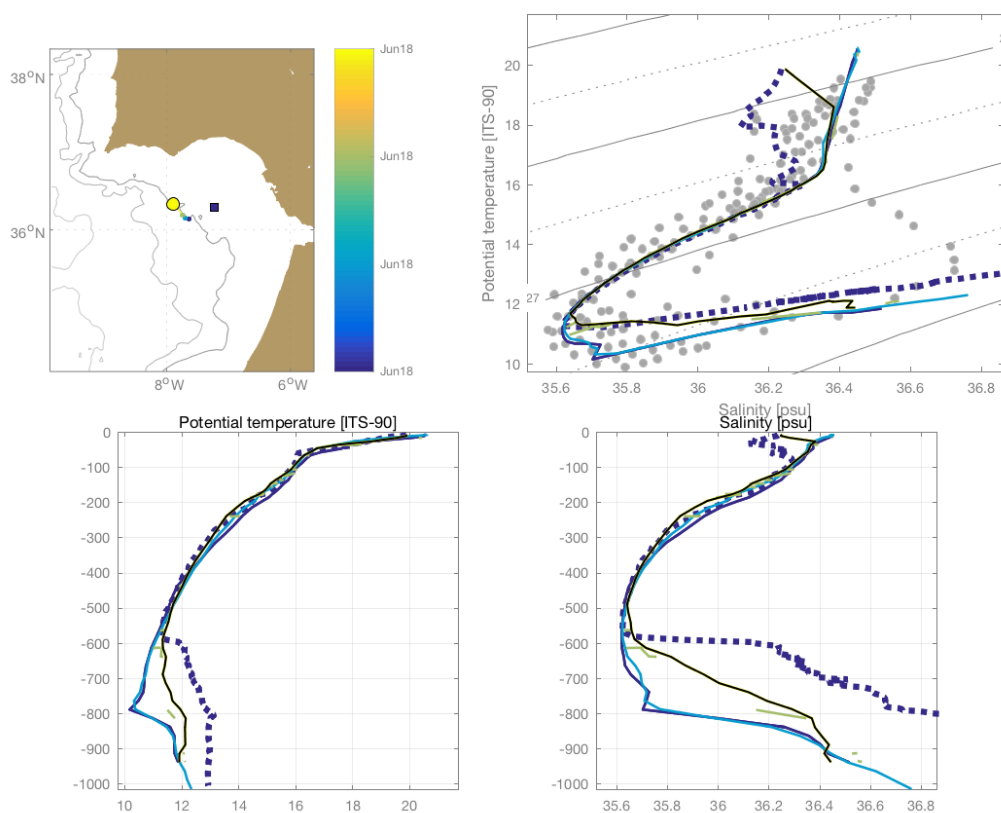


Figure 6. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901260 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out 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

“MC” parameters (table 3) were set according to the scientific requirements and the oceanographic area of study (Gulf of Cádiz). In the first instance, the float WMO 6901260 will dive up to 1000 m depth carrying out 12 cycles of 24 hours, with a parking depth of 800 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. On the other hand, the float WMO 6901264 will dive up to 1000 m depth carrying out 12 cycles of 5 days, with a parking depth of 800 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
Mission Commands			
MC0	Total Number of Cycles	300	Whole number
MC1	Number of cycle with “Cycle Period 1”	300 12	
MC2	Cycle Period 1	240 24	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 800	dBar
MC11	Profile Depth for “MC1” first cycles	2000 1000	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 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)	0	

Table 3. Configuration sheet for all the floats deployed during *STOCA 201806* cruise.

4. Acknowledgements

Argo España would like to thank Ricardo F. Sánchez Leal (IEO) and the rest of the crew of the R/V Ángeles Alvariño, who cooperated for the success of the mission. Both Argo floats have co - financed by FEDER funds from “Programa Operativo Crecimiento Inteligente 2014 - 2020”.



Figure 7. Deployment locations from CLS satellite viewer.