



Portuguese Argo Activities

Report 2021 for the Argo Steering Team Meeting (AST23)

Submitted by A. Miguel Piecho-Santos

IPMA-Portuguese Institute for the Sea and the Atmosphere

March 2022

Activities

1. Participation in the European project "Euro-Argo Research Infrastructure Sustainability and Enhancement (Euro-Argo RISE)", namely in the WP2-Evolution of the core Argo mission / Task 2.3- Improve Argo observation of boundary regions. In this context, one of the activities was to simulate the best Argo floats configuration to maximise their retention in the same location of the deployment using the VirtualFleet software and a "genetic" algorithm (Fig.1). The best results are for the following configurations, regarding parking depth (m), vertical speed (m/s) and cycle duration (days): (1) Simulation (S) 1 (long= -8.855) - 795 m; 0.031 m/s; 10 days; (ii) S2 (long = -8.146) - 711 m; 0.049 m/s; 10 days; and (iii) S3 (long = -7.438) - 392 m; 0.09 m/s; 9 days. However, we want to extend this study because there are other issues that should be taken in consideration, as the vertical speed changes because this could have implications on the quality of the data. A article are in preparation to be published during 2022.
2. Unfortunately, Portugal failed to sign the admission to Euro-Argo ERIC and ceased to be a candidate.
3. The call for the acquisition of four core Argo floats, one full biogeochemical (BGC) Argo float and one BGC Argo float with dissolved oxygen sensor only is now finished and the vendor choose was NKE that will deliver these floats during 2022.

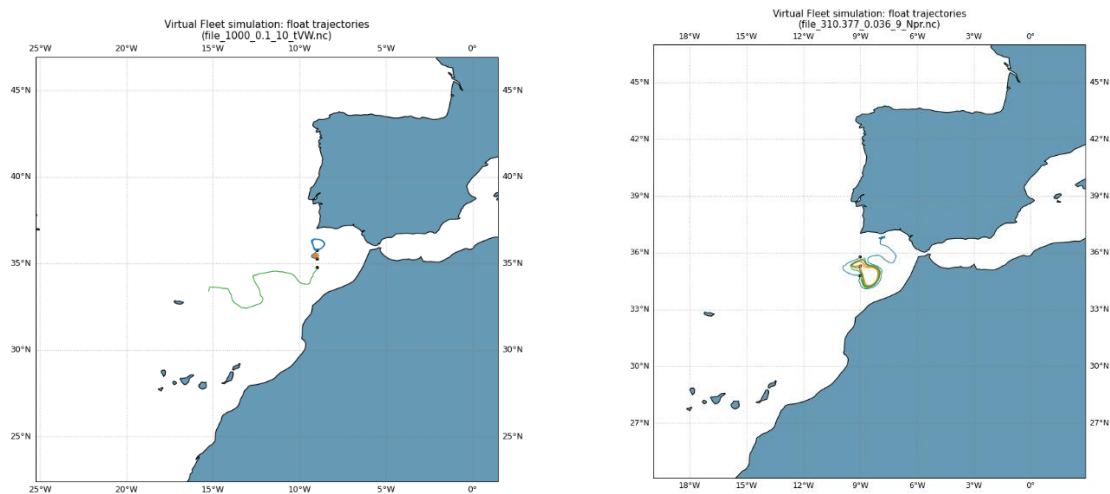


Figure 1. In the left it is the an example of a simulation with core Argo configuration and in the right with optimize parameters.

Plans for 2021

1. Potential deployment of the four core Argo floats in the Gulf of Cadiz.
2. Publish Le Jeune et al.(in preparation) paper.
3. Starting again the process for Portugal's participation as a full member of Euro-Argo ERIC.

References

Le Jeune, M., Piecho-Santos, A.M., Balem, K., Maze, G. (in preparation). Monitoring the Gulf of Cadiz, NE Atlantic, with Argo floats. To be submitted to *Oceans*.