



Argo-Poland National Report 2017

Waldemar Walczowski, Małgorzata Merchel
IO PAS, Sopot, Poland, 31.12.2017 r.

1. The status of implementation

Since 2009 IOPAS has deployed sixteen Argo floats. Eleven of them were launched in the Nordic Seas from the board of *r/v Oceania* and three in the same region aboard *r/v Horizont II*. Since November 2016, also aboard *r/v Oceania*, IOPAS has launched two floats in the Baltic Sea.

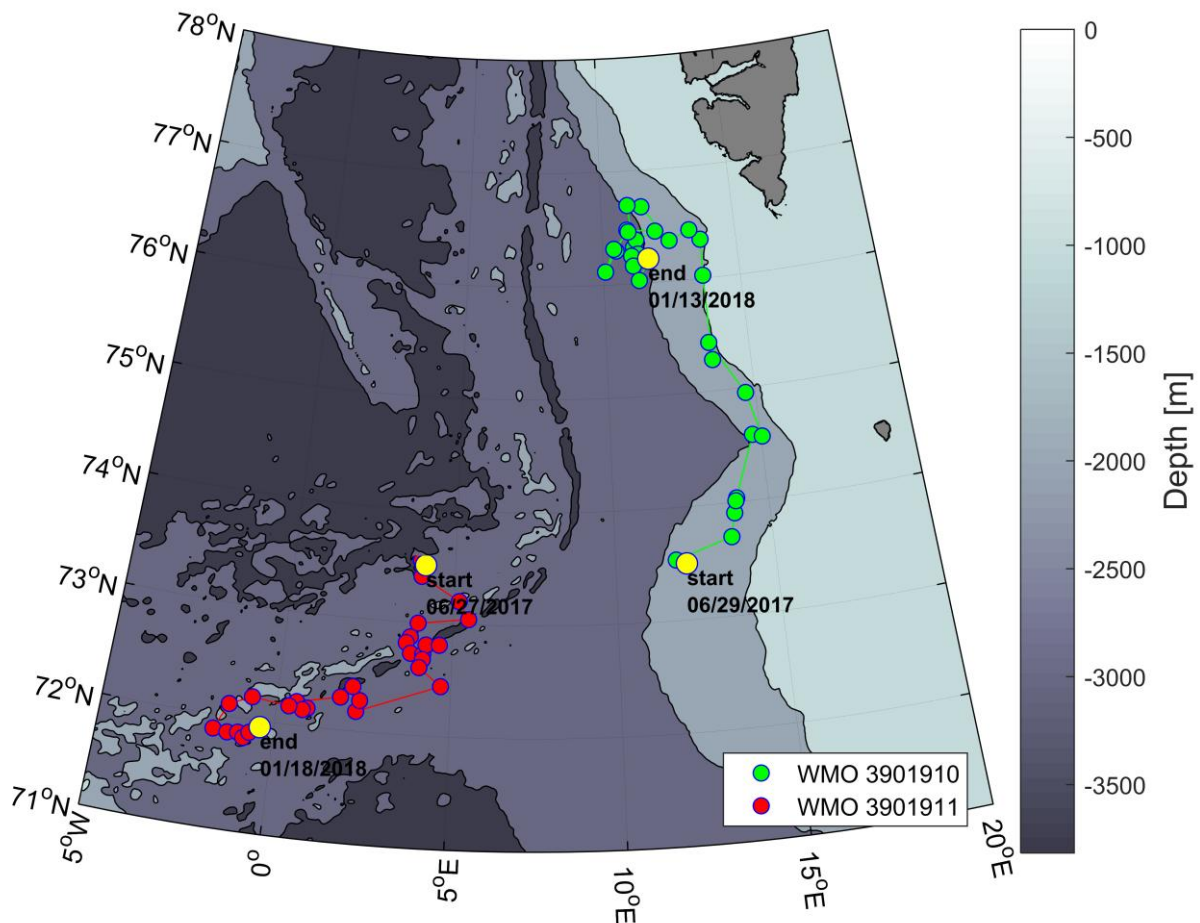


Figure 1. Surface position of two Argo floats deployed in the Norwegian and Greenland Seas in June 2017

Two Argo floats (WMO 3901910, 3901911) were deployed in the Norwegian and Greenland Seas from the board of *r/v Oceania* at the end of June 2017 (Fig.1). All instruments are the ARVOR-I floats with Iridium transmission system. Both floats were deployed under the EU MOCCA Project. The parking depth was set at 1000 dbars and profiling depth at 2000 dbars. They all have cycles of 7 days.

There were no technical problems with the two instruments. Every float was operated for the whole 2017 and has sent 27 complete sets of hydrographic data by the end of year.

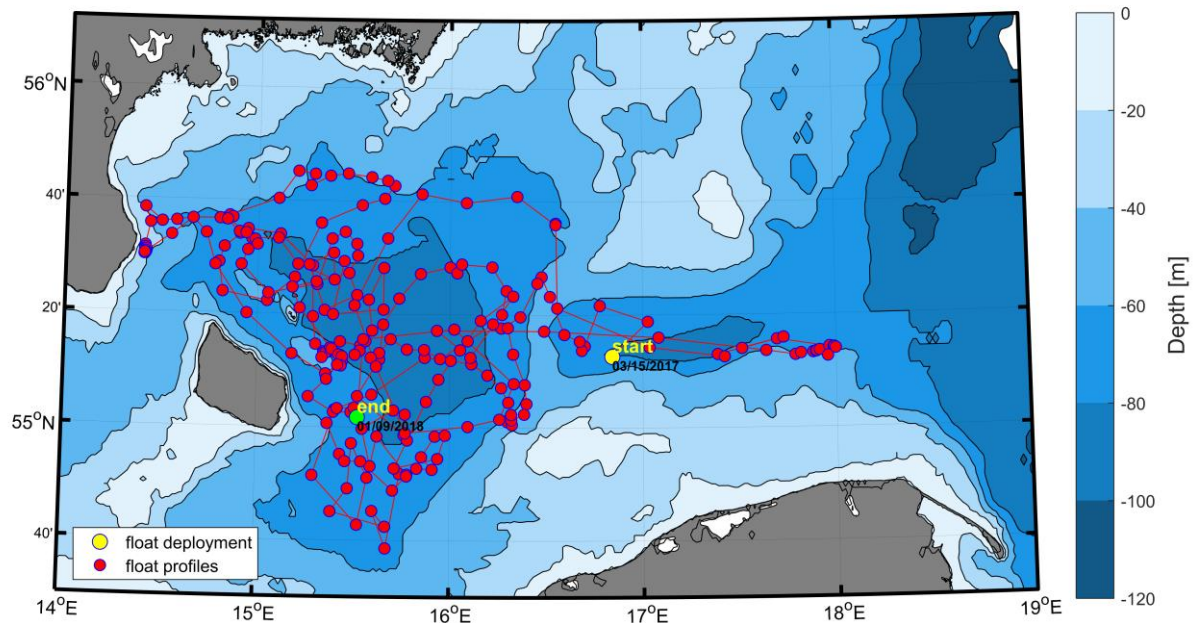


Figure 2. Surface position of Argo float deployed in the Baltic Sea in March 2017

The first Polish Argo float in the Baltic Sea (WMO 6902036) was redeployed from the board of *r/v Oceania* in the middle of March 2017 (WMO 3902100) (Fig. 2). The instrument is the APEX float with Iridium transmission system. The parking depth was set at 50 dbars and profiling depth at 85 dbars. It had cycles of 1-2 days. By the end of 2017 year the float has sent 230 sets of data.

Two floats deployed in June 2016 (WMO 3901850, 3901851) was also active during the 2017 year (Fig. 3). During their whole operating time, the floats have been sent 58 sets of hydrographic data.

Two floats deployed in September 2015 (WMO 6902038, 6902039) stopped transmission in February 2017. The floats have been sent respectively WMO 6902038 - 104, WMO 6902039 - 100 sets of hydrographic data.

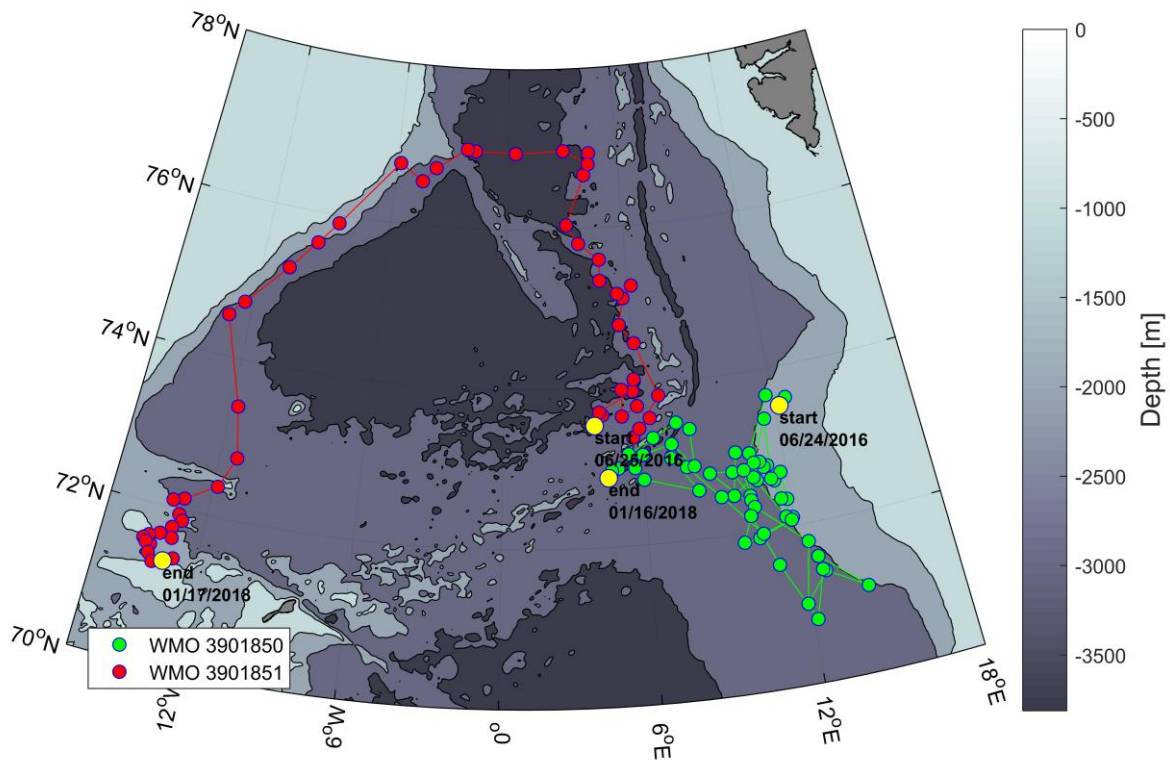


Figure 3. Surface position of two Argo floats deployed in the Nordic Seas in June 2016

2. Present level of and future prospects for national funding for Argo

The present level of the Polish national funding allow for purchase and deployment of two Arctic floats per year and one Baltic Sea float per one-two years (depending on price). There are some funds for coordination, technician works and PhD student. Travel, deployment, technical maintenance is covered. This level of funds is secured to 2020.

3. Summary of deployment plans

Poland committed to launching three Argo floats per year. In 2018 we plan to deploy 3 floats: two in the Nordic Seas region during the IOPAS Arctic cruise and one in the Baltic Sea during the IOPAS Baltic cruise. All of the floats will be launched from the board of *r/v Oceania*.

4. Summary of national research and operational uses of Argo data

IOPAS has been carried the scientific program aimed at investigation of the Atlantic Water inflow into the Arctic Ocean and climatic aspect of this process for over 20 years. Every summer expedition of IOPAS research vessel 'Oceania' to the Nordic Seas and Arctic Ocean is organized. Polish Argo floats are usually deployed during these cruises. The data obtained from the Argo floats support this research, in particular those concerning the advection of the warm Atlantic Water through the Nordic Seas and changes of Atlantic water properties. The Argo results are

compared with data from standard *in situ* measurements, used in calculation of the signal propagation velocities, currents pathways. The Argo measurements complement the lack of data in winter season.

We also use Argo floats to investigate hydrography and dynamics of the Baltic Sea. The Argo Poland program's website is regularly updated by IO PAS:

<http://www.iopan.gda.pl/hydrodynamics/po/Argo/argo.html>

5. Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo.

We have no suggestion at the moment.

6. CTD data

In 2017 two Polish floats were deployed during IOPAS Arctic cruise AREX, when 237 CTD profiles have been done including the stations performed just before the floats deployment. IOPAS can provide this two stations CTD data to compare it with Argo floats. The Argo floats were deployed at section 'H', station H11, ϕ 73°30.610 N, λ 004°03.880 E, station H19, ϕ 73°30.050 N, λ 12°13.518 E.

Rest of the data (237 stations) from the Nordic Seas will be available via IOPAS database. Contact point: Waldemar Walczowski, walczows@iopan.pl.

7. The Argo bibliography

Goszczko, I., *Water mass transformation in the region influenced by the West Spitsbergen Current*, PhD thesis, defended on 22 June 2017.