Status of Argo Poland, 1st March 2012

The Polish Argo programme is carried out by the Institute of Oceanology Polish Academy of Sciences (IOPAS) (http://www.iopan.gda.pl/index-pl.html). Institute of Oceanology (IOPAS) is the biggest Polish institution with a focus on marine science, carrying the extensive field work in the Baltic Sea, North Atlantic and Nordic Seas. IOPAS is the first in Poland who started to deploy the ARGO floats in 2009, at the same time it joined the EURO-ARGO consortium. IOPAS is not only a leader of the Polish EURO-ARGO, it also collaborates with other scientific institutions working in the Arctic, as Institute of Geophysics, Polish Academy of Sciences, University of Silesia, University of Torun. Results from ARGO floats lunched in the Nordic Seas by IOPAS are used in common projects. IOPAS also deployed floats in collaboration with the German AWI.

1. The status of implementation

Two ARGO floats were deployed by Poland in July 2010 in the Nordic Seas during the Arctic cruise of the IOPAS research vessel RV Oceania. During the same expedition, two more floats from Alfred Wegener Institute in Bremerhaven were deployed from RV Oceania in frame of joint field experiment in the Nordic Seas. One of the Polish float (WMO# 6901387) was active until 28 of May, 2011. It collected all in all 111 profiles. Second one unfortunately finished transmission after only two profiles. There were not new Polish ARGO floats deployments in 2011. However, we cooperate closely with the German company Optimare which provided the innovative NEMO floats equipped with RAFOS technology and Iridium modems for data transfer which were deployed in summer 2010. The continuation of the collaboration is planned in 2012
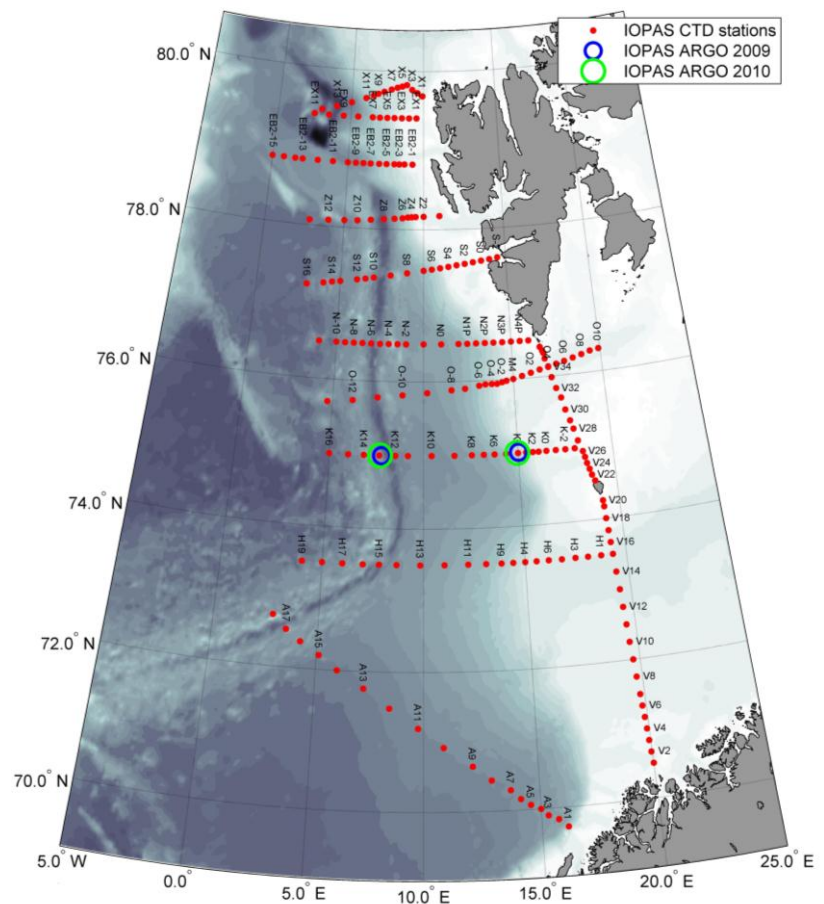

Figure. Locations of all Argo deployments from Argo Poland.

Delayed mode and CTD for Reference DataBASE

The OPTIMARE, Bremerhaven maintains and controls the IOPAS floats data.

IOPAS has the long and extensive experience in field observations in the Nordic Seas. Every summer since 1996 IOPAS has been carrying 2-months-long cruises to the Norwegian and Greenland Seas. Our multiyear CTD and ADCP data from the Nordic Seas are available to the EURO-ARGO community for ARGO floats calibration. We are going to contribute to the ERIC project by working out the strategy for deployments of floats in the Nordic Seas. Our research vessel RV Oceania can be used by the EURO-ARGO partners who are interested in floats deployment both in the Norwegian and Greenland Seas as well as in the Fram Strait. In 2009 and 2010 we succeeded in first Polish deployments of Argo floats, gathering the first-hand experience in this new technology. In 2012 we plan to continue floats deployment in the subpolar regions, working at the same time on securing more sustainable funding scheme for the national EURO-ARGO activities.

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

The project has so far been funded by IOPAS. The total float purchase has cost about 55 kEURO. There are not devoted any funding for scientific analysis, but some persons are partly working with the Argo floats data collection and management in frames of the IOPAS projects. The scientific analysis is done in the research projects financed from the external sources.

As part of the EURO-Argo preparatory phase, IOPAS as a Polish representative, carried the negotiations with the funding agency (Ministry of Science and Higher Education) to develop strategy of the ARGO project and to secure a sustainable funding. The proposal got positive evaluation and the Polish EURO-ARGO project is on the priority list (roadmap) of the Polish ESFRI projects, but the general funding scheme for all ESFRI projects is still under development and has been not yet decided on the governmental level.

Recently IOPAS sent a proposal to the National Science Center (NCN) for a long-term funding which should cover purchasing and deployment of two floats per year and also a membership in the Euro-Argo ERIC as an observer. We wait for the call results.

3. Summary of deployment plans

In 2012 we plan to continue floats deployment in the subpolar regions, working at the same time on securing more sustainable funding scheme for the national EURO-ARGO activities.

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

In 2007 IOPAS started to use ARGO floats data for the studies focused on circulation in the Nordic Seas and the Fram Strait. Data have been used for a comparison with the results from standard *in situ* observations conducted in the Nordic Seas.

The aims of our summer deployments are:

- Investigation of the West Spitsbergen Current structure and velocity in its various branches;
- Field tests of various data transmission technologies (ARGOS vs. IRIDIUM);
- Feasibility tests of RAFOS technology for floats tracking in the Fram Strait.

Data received from IOPAS floats and other ARGO data sets were used to construct the mean hydrographic fields in the West Spitsbergen Current (WSC) for a comparison with the WSC structure obtained from the ship-borne hydrographic measurements. ARGO data were used in Polish-Norwegian Research project AWAKE, which purpose was to investigate changes of climate in the European Arctic. Floats data were also used for the validation and evaluation of the output from the high resolution (2 km) numerical model of circulation in the Nordic Seas and Arctic Ocean.

5. Bibliography

Cisek M., Walczowski W., Wieczorek P., Observations of Atlantic Water pathways and velocities in the Nordic Seas, 3rd Euro-Argo User Workshop, 17-18 June, 2010. Paris, France, poster presentation.

Walczowski W., Deep sea circulation, AWAKE Progress Meeting, 4-5 November, 2010, IOPAS, Sopot, Poland, oral presentation.

Osinski R., Maslowski W., Jakacki J., Eddy-resolving ocean modeling of the pan-arctic region, AWAKE workshop "Ocean influence on climate and cryosphere in the Arctic", 28-30 November 2011, IOPAS, Sopot, Poland, oral presentation.

6. Issues we wish to be considered and resolved
At the moment we have no suggestion.