

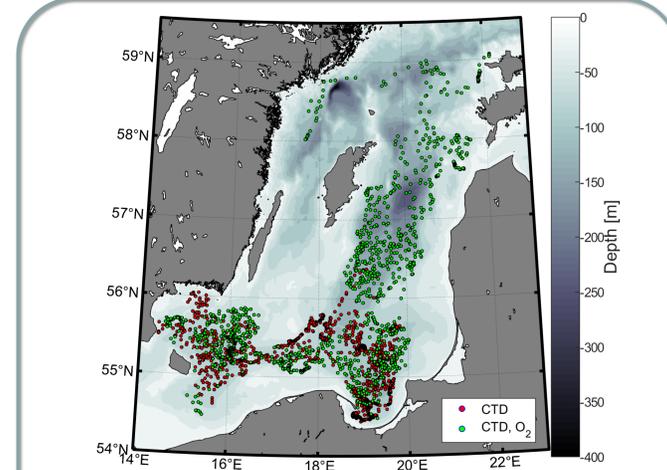
Argo floats in the South Baltic Sea – five years of use

Małgorzata Merchel, Waldemar Walczowski, Piotr Wieczorek
Institute of Oceanology Polish Academy of Sciences
merchel@iopan.pl

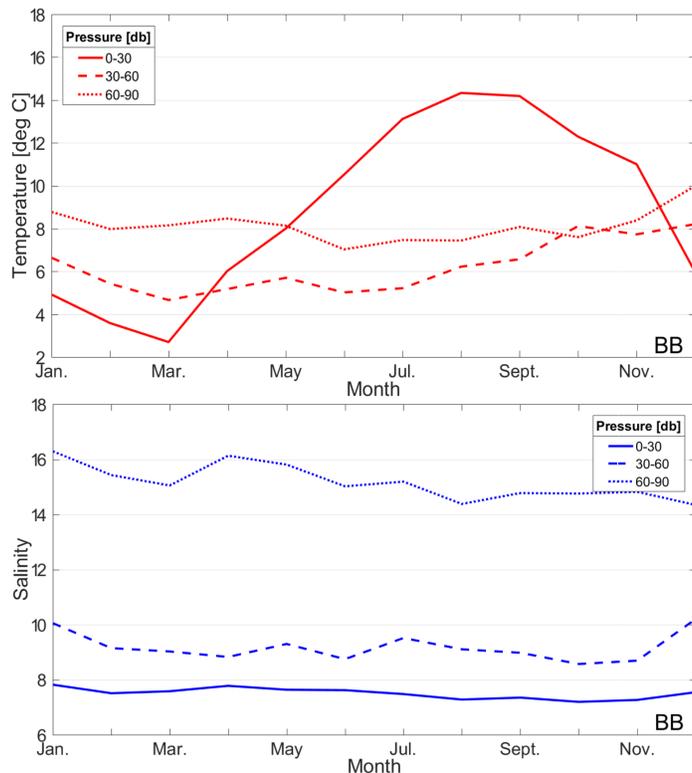


- ❖ The Baltic Sea is a semi-enclosed, brackish sea with limited connection to the ocean.
- ❖ Baltic Sea hydrography is maintained by the rivers runoff and inflows of saline, oxygen rich waters from the North Sea.

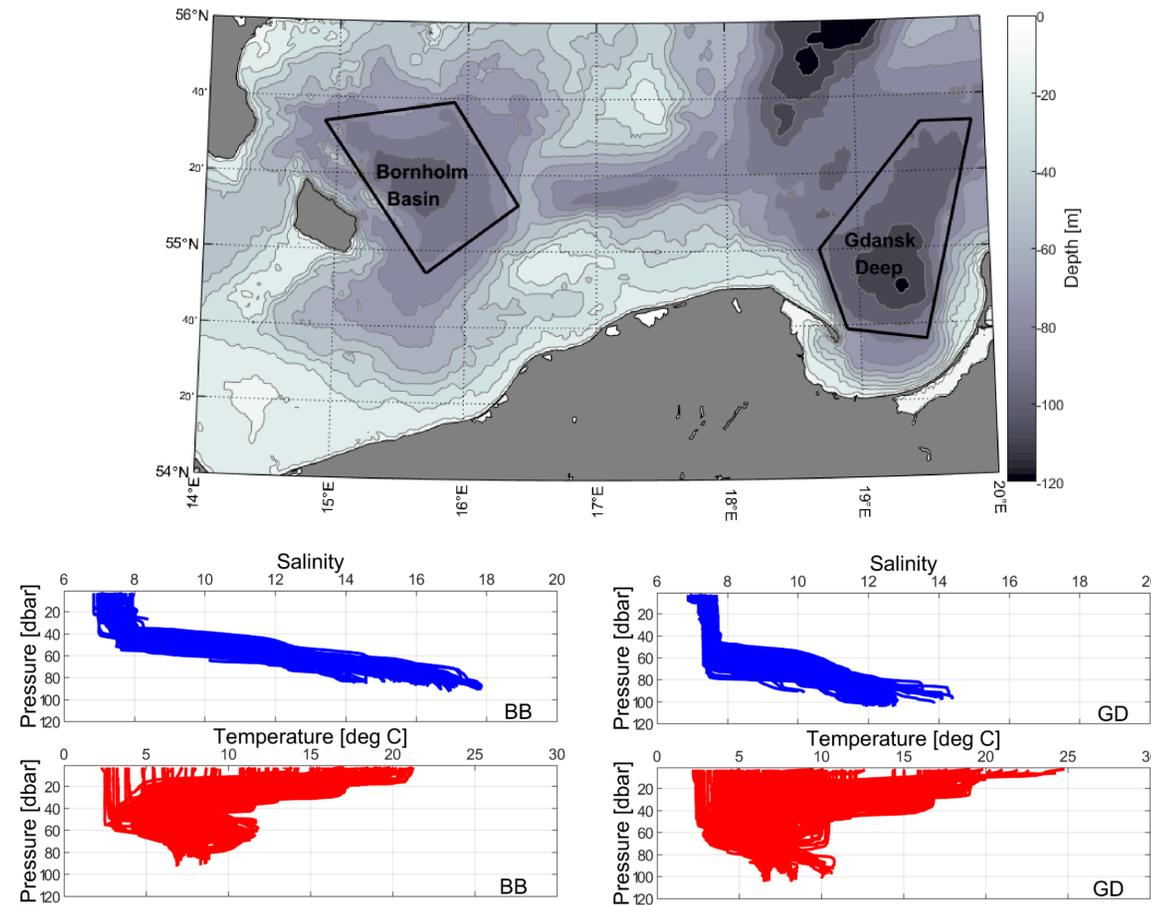
- ❖ Poland started launching Argo floats in the Baltic Sea at the end of 2016.
- ❖ Data from Argo floats allow for a much more accurate determination of the seasonal cycle of temperature and salinity in the waters we have studied: the Gdansk Deep and the Bornholm Basin.
- ❖ Some floats are additionally equipped with an oxygen sensor. This significantly increased the value of the collected data, especially in such an ecologically sensitive reservoir as the Baltic Sea.
- ❖ The advantage of measurements made with Argo floats is their independence from weather conditions, thanks to which we obtain measurements from all seasons.



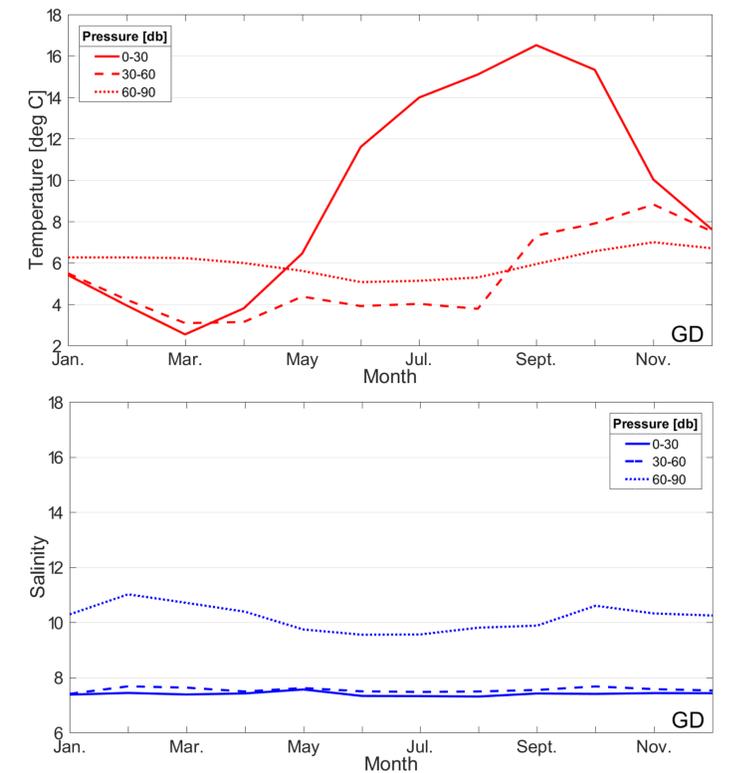
- ❖ Within 5 years, IOPAN launched 11 floats in the South Baltic Sea. Five of them were additionally equipped with oxygen sensors.
- ❖ All floats collected approx. 5500 CTD profiles, including over 2700 O2 profiles.



Seasonal cycles of temperature and salinity in the Bornholm Basin (BB).



Temperature and salinity profiles in the Bornholm Basin (BB) and the Gdansk Deep (GD) in 2017-2021.



Seasonal cycles of temperature and salinity in the Gdansk Deep (GD).

Conclusions:

- ❖ The Baltic Sea, thanks to its small size, makes it possible to recover and re-launch floats;
- ❖ Contact with the bottom, proximity to the shore and collisions with the ship are not as dangerous for the floats as previously thought;
- ❖ Argo floats significantly improve the possibility of observing important processes and their interpretation: seasonal cycles of temperature, salinity and oxygen; inflows from the North Sea; water dynamics (currents) etc.;
- ❖ Argo Poland <https://old.iopan.pl/hydrodynamics/po/Argo/argo.html>.

