

# Press Release



University  
of Cyprus

Press & Public Relations Office,  
Promotion and Development Sector



University of Cyprus  
Oceanography Centre



Telephone: 22894304

Email: [prinfo@ucy.ac.cy](mailto:prinfo@ucy.ac.cy)

Website: [www.ucy.ac.cy/pr](http://www.ucy.ac.cy/pr)



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## University of Cyprus Oceanography Center Monitoring Arctic Climate



The Oceanography Center, University of Cyprus, has recently signed a research agreement for climate monitoring in the Arctic Ocean with Centre National de la Recherche Scientifique (CNRS) and Sorbonne Université's Laboratoire d'Océanographie et du Climat (LOCEAN), France to cooperate for an oceanographic campaign in the Fram Strait involving research vessels, moorings, and underwater gliders. In cooperation with other research groups through the Integrated Arctic Observation System (INTAROS), funded by the European Commission, the agreement has resulted in the preparation, deployment, and

operation of one University of Cyprus glider west of the archipelago of Svalbard (78° N, 10° E). The study will quantify the pathways and volume transports of the Atlantic Water inflow to the Arctic Ocean, an important component to the overturning circulation of the global ocean and the future of the European climate.

On 25 July 2020, glider "Pheidippides" took its first plunge in Arctic Waters, with the assistance of crew of the Polish *R/V Oceania*. Controlled remotely from Cyprus by researcher Dr. Daniel Hayes of the University of Cyprus, the glider is instructed to follow a specific course and collect data about currents, temperature, salinity, dissolved oxygen, phytoplankton, and sediments. The glider measures data profiles reaching 1000 m depths and sends the results via satellite every few hours for analysis. Commands are also sent during the data transfer. So far, the glider has collected over 700 profiles and travelled over 1400 km. Strong currents, essentially an extension of the Gulf Stream and nearby sea ice, have made this mission more challenging than most. Recovery is planned in late September 2020 in one of the many fjords of Svalbard.

CNRS-LOCEAN has carried out several glider missions in the west Spitsbergen Current (in Fram Strait) since 2017. The missions provide high resolution snapshots of the Atlantic water flow entering the Arctic Ocean in order to better assess the effect of eddies and recirculation on the mean transports of heat and salt in and out of the Arctic. Regular monitoring is required to gain statistical confidence on individual missions while snapshots from gliders are needed to ensure that short-term variability is not confused with spatial variability.

The knowledge of physical and biological processes in the Arctic Ocean is limited because the conditions are harsh, travel and equipment are expensive and operations are risky, and ice cover severely restricts on-site observations. There is a lack of in situ multidisciplinary data for the Arctic Ocean and significant patterns of the Arctic ecosystem are not regularly monitored. Autonomous platforms for distributed observations (e.g. moorings, floats, ice-based observatories and gliders) can contribute year-round measurements over extended time periods from the most under-sampled regions of the Arctic Ocean. Among those, only gliders can move along sampling lines to measure spatial patterns.



*UCY glider "Pheidippides" on deck of the R/V Oceania near the Arctic island of Svalbard shortly before launch on 25 July 2020.*

*Photo: Waldemar Walczowski, The Institute of Oceanology of the Polish Academy of Sciences.*

**For more information:**

Dr. Daniel Hayes, Research Scientist, Oceanography Center, University of Cyprus

Email: [dhayes@ucy.ac.cy](mailto:dhayes@ucy.ac.cy)

Tel: 22893987

<http://euclid.mas.ucy.ac.cy/~cyocean/gliders.html>

<https://www.ego-network.org/dokuwiki/doku.php?id=public:plotdeployment&glid=74&dId=1157>

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