



Międzynarodowa Środowiskowa Szkoła Doktorska
przy Centrum Studiów Polarnych
w Uniwersytecie Śląskim w Katowicach

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IEDS/2026/IO/03

Evolution and Fate of Glacier-Derived Suspended Matter in Hornsund Fjord (Svalbard Archipelago)

The leading unit: Institute of Oceanology Polish Academy of Sciences

Requirements:

1. A second-cycle (Master's) degree in physics, oceanography, or a related field, along with knowledge of research topics related to climate change in the Arctic.
2. Proficiency in programming and familiarity with common tools and methods used in numerical problem-solving.
3. English language proficiency sufficient for effective communication and for reading and writing scientific papers.

Tasks description:

1. Analysis of fjord circulation in the context of seasonal variability and climate change;
2. Acquisition, processing, and analysis of observational data from Hornsund Fjord;
3. Design, organization, and execution of research activities related to numerical modeling;
4. Preparation of scientific manuscripts and conference contributions;
5. Regular reporting of research progress;
6. Participation in the unit's scientific and teaching activities, including co-management of measurement infrastructure.

Summary of a doctoral project:

Within the framework of the project, a circulation model for Hornsund Fjord, including sea ice dynamics, will be configured and implemented. The modelling system will build upon the previously developed CEMS (Climate and Environmental Modeling System), based on the coupled Regional Ocean Modeling System (ROMS) and CICE sea ice model. The model will further account for glacier melt-related processes, including the delivery of suspended particulate matter to the fjord system. The PhD thesis will address the fate of this material under different environmental conditions.

Other information:

The work will be carried out under supervision of:
Jaromir Jakacki & Agata Zaborska (associate professors)



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Website: <https://www.mssd.us.edu.pl/en/admission-2026-2027/>