



**Centre
for Polar
Studies**

Centre for Polar Studies
ul. Będzińska 60
41-200 Sosnowiec
POLAND
polarknow@us.edu.pl



PhD student position at environmental Interdisciplinary Polar Studies

in Centre for Polar Studies, Leading National Scientific Centre (KNOW)

Reference No: CSP/2015/IO/2

Title of PhD project:

A statistical analysis of Arctic climate system variability in the era of satellite observations

Location: Centre for Polar Studies/ Institute of Oceanology, PAS

Deadline: 15th August 2015 r.

Interviews: 10th – 13th September 2015, venue will be indicated later

(http://www.polarknow.us.edu.pl/wp-content/uploads/Location_CPS_partners.pdf)

In the case of students from abroad the interview will be performed in the form of video conferencing.

Mode of study: full-time

Degree to be obtained: Doctor of Philosophy in Earth Sciences, discipline – Oceanology

Duration: 4 years (8 semesters), from October 2015

Language: Polish and English, Polish is not obligatory for students from abroad

Scholarship: citizens of Poland, EU citizens and owners of Card of the Pole can apply for scholarships funded by the KNOW (Leading National Scientific Centre) 2 000 – 4000 PLN/month (paid no longer than during four academic years)

Fees applicable: EU citizens applying on a regular basis – no fees; Non-EU citizens: 3 000 EUR per year; More information are available on website <http://admission.us.edu.pl/english/admission-rules>

Required documents and registration online:

http://www.polarknow.us.edu.pl/en/isp_eng/required-documents-and-registration-online/



Krajowy Naukowy
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Institute of Oceanology
Polish Academy of Sciences
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www.iopan.gda.pl



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Conditions of recruitment:

1. The final result of the completion of the candidate's higher university degree (maximum 6 points, the conversion of diploma ratings: 6.0 (excellent) - 6 pts.; 5.0 - 5 pts. ; 4.5 - 4 pts.; 4.0 - 3 pts.; 3.5 - 2 pts.; 3.0 - 1 point).
2. Interview with a candidate will assess the knowledge, skills (an ability to design experiments to investigate new phenomena, test hypotheses and solve experimental problems), knowledge of English and scientific level of the submitted project of the doctoral dissertation (maximum 15 points).
3. The minimum number of points, which has to be obtained to be selected for the studies, is at least 14 points.
4. Eligible for studies shall be a person who obtain the highest number of ranking points up to fill the limit of places, subject to point 3.
5. Project implementation of doctoral dissertation (max. 2 pages) must be submitted by 15th August 2015.

Requirements:

1. MSc degree (or equivalent) in Physics, Applied Mathematics or equivalent science discipline. A candidate may submit application if the MSc Degree will be received not later than on 9th September 2015.
2. General knowledge of Physics and Applied Mathematics.
3. General knowledge of the Earth's climate system and its polar component in particular.
4. Skills in a programming language (e.g. Matlab, Fortran or another) and knowledge of numerical methods.
5. Communication, reading and writing skills in English. (Polish is not required).

Tasks description:

1. Selection of appropriate oceanic, atmospheric and cryospheric datasets from the Arctic region.
2. Numerical and conceptual analysis of the chosen datasets using statistical and diagnostic methods in climate research.
3. Acquiring a thorough and up-to-date knowledge of the scientific literature related to the research aims of the project.
4. Contributing to journal papers and conference presentations.



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5. Regular reporting on the research progress according to the agreed schedule.
6. Help in the maintenance of the day-to-day work of the Marine Ecohydrodynamics Laboratory at the Institute of Oceanology PAS.

Abstract

Seasonal-to-decadal prediction has become a leading topic in climate research aimed to fill a gap between weather forecasting and climate projections. One of the factors which at present hinder successful seasonal-to-decadal prediction is a lack of understanding of the relevant physical processes and feedbacks between the climate subsystems. Recent studies point out the Arctic sea ice cover anomalies as a significant source of seasonal predictability of wintertime atmospheric variability over adjacent continents. Some other studies indicate that strong interactions between the atmosphere, sea ice and ocean that exist in the sub-Arctic region of the North Atlantic sector should contribute to seasonal predictability of the local climate system. Much more research is however needed to fully understand this system and elucidate its links to the large-scale climate variability.

This thesis project proposes to extract useful information from available oceanic, atmospheric and cryospheric datasets from the era of satellite observations (1979-present) in order to improve understanding of the Arctic climate system in the context of seasonal predictability. A focus will be on the climatic impact of re-emerging sea surface temperature anomalies in the Nordic (Greenland-Iceland-Norwegian and Barents) seas.

The ideal candidate is expected to have an experience in the statistical analysis of climate data. A candidate with a general background in computational physics or applied mathematics may also be considered. Skills in Matlab and English will be appreciated.

Other information:

1. The thesis supervisor will be **Professor Pawel Schlichtholz (IO PAS)**.
2. In addition to the candidate's application submitted to KNOW it would be mandatory to send CV and the motivation letter to: schlicht@iopan.gda.pl.
3. Contact: polarknow@us.edu.pl – Leading National Research Centre (Dr. D. Ignatiuk)