



Centre for Polar Studies

Centrum Studiów Polarnych
ul. Będzińska 60
41-200 Sosnowiec

tel: (+48) 32 3689 281
(+48) 32 3689 270
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/2014/IGF/2

Title of PhD project:

The impact of the sea ice conditions on the wave propagation and coastal erosion based on Isbjørnhamna and Recherchefjorden (Spitsbergen)

Location: Centre for Polar Studies/ Institute of Geophysics PAS

Deadline: 5th September 2014 r.

Interviews: 15th – 19th September 2014 in the chosen institute

(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 – Geophysics

Duration: 4 years (8 semesters), from October 2014

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

Scholarship: 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

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: <https://www.irk.us.edu.pl/index.php>, more information: http://www.polarknow.us.edu.pl/wp-content/uploads/Resolution_No_273_conditions_and_method_of_recruitment_for_the_first_year_of_doctoral_studies.pdf

Conditions of recruitment: The final result of the completion of the candidate's higher education (up to 6 points, the conversion of diploma ratings: 6.0 (excellent) - 6 points.; 5.0 - 5 points.; 4.5 - 4 points.; 4.0 - 3 points.; 3.5 - 2 point.; 3.0 - 1 point), Foreign grading scale will be converted.

The interview will assess the candidate's intellectual level of the candidate's knowledge of English and professional level of the doctoral dissertation project (maximum 15 points). Delivery the project of doctoral dissertation (max. 2 pages) to 5th September 2014.

Requirements:

1. M.Sc. degree in geography, geology or similar. . It is also possible to submit the application by those who graduate in the coming months and can provide supervisor's opinion about the current state of their M.Sc. thesis.
2. Knowledge of research topic concerning the coastal processes (coastal erosion, sedimentology, physical oceanography, geomorphology). Polar research experience is well seen.
3. Knowledge of the theory and oceanographic research methods (using ADCP, CTD, wave buoy), geodetic (GPS), GIS software.
4. Knowledge of Matlab software.
5. Organizational and teamwork abilities, confirmed by experience.
6. Ability to perform field work in difficult conditions, including work on the boat. Completed first aid training, boat handler, sailing, diving are well seen.
7. English skills sufficient for communication, reading and writing scientific papers.
8. Publications, conference presentations, and participation in past research projects are well seen.

Tasks description:

1. The main objective of the dissertation is to determine the influence of the sea ice conditions on the wave propagation and coastal erosion based on Isbjørnhamna and Recherchefjorden and dynamic model like Delf3D. This work will be conducted partially under the research project "The impact of the sea ice conditions in the nearshore zone and shore ice on the wave propagation and coastal morphodynamics in polar regions on the example of south-western Spitsbergen - the analysis of processes, modeling, and prediction".
2. Participation in the preparation and realization of the field work, project meetings and workshops organization, materials preparation for conferences and publications.
3. Presentation of the research results during both polish and international scientific conferences.

Abstract

Recent climate change manifests itself in shrinking Arctic sea ice cover, decline of glaciers and permafrost, as well as an increase in meteorological extreme events. All those factors are crucial for processes taking place in the polar coastal zones. The decline of permafrost increases the coasts' susceptibility to erosion; the recession of ice sheets and glaciers leads to the increase of the global sea levels; and extreme weather events are associated with storm surges and high wind waves hitting the coast. The most dynamically changing processes are related to sea conditions (wave, currents, sea ice). Sea ice, as well as polygenetic shore ice, are among the most important factors protecting the coasts against erosion. The main objective of this project is a better understanding of the influence of the ice – its presence, amount and type (sea ice, shore ice) – on transformation of the polar coastal zones and on the redistribution of the sediment due to a combined action of wind waves, tides and currents.

Additional information:

1. The work will be carried out under supervision of Assoc. Prof. Agnieszka Herman (Institute of Oceanography University of Gdańsk), and dr Mateusz Moskalik (Institute of Geophysics PAS).
2. In addition to the documents required by KNOW recruitment procedures a CV and Cover Letter should be mailed to dr. Mateusz Moskalik (mmosk@igf.edu.pl)
3. Contact: polarknow@us.edu.pl – Leading National Research Centre (Ph.D. D. Ignatiuk)
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