Postdoc in Climate Modelling and Arctic-Midlatitude Connections

The Department of Environmental Science at Aarhus University invites applications for a postdoc position in climate modelling. The position is part of the research project ArcticPush, which investigates how Arctic climate change influences extreme weather in Europe. The postdoc will focus on understanding the role of surface temperature patterns in shaping Arctic-to-lower-latitude climate interactions.

Application Deadline:
02 May 2025

Faculty:
Faculty of Technical Sciences

Institute/Faculty:
Department of Environmental Science

Academic contact person:
Peter L. Langen
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Vacant positions:
1

Hours per week:
37

Number of months:
28

Expected date of accession:
01/09/2025

Expected start date and duration of employment

The position is available from 1 September 2025 or as soon as possible and is a 28-month appointment.

About the Project

ArcticPush is a research project that seeks to identify how Arctic climate change influences European climate extremes. The Arctic is warming at a much faster rate than the global average, and its impact on jet streams, weather patterns, and extreme climate events remains a subject of debate. Using a combination of climate modelling, statistical methods, and machine learning, ArcticPush aims to uncover the conditions under which Arctic changes influence mid-latitude weather. The project is a collaboration between Aarhus University, the University of Copenhagen, and the Danish Meteorological Institute, with additional international partners.

The postdoc's research focuses on identifying surface temperature patterns that enhance Arctic-to-lower-latitude climate connections. The postdoc will:

- Analyze large-scale temperature and atmospheric circulation patterns to determine conditions that reinforce Arctic-mid-latitude coupling in collaboration with the ArcticPush PhD student at Universtiy of Copenhagen.
- Design and conduct experiments using the EC-Earth earth system model, running simulations to test the robustness of Arctic-lower-latitude interactions in collaboration with colleagues at the Danish Meteorological Institute.
- Investigate the future stability of these connections under different climate scenarios and model configurations.
- Collaborate closely with ArcticPush partners in Denmark and from Germany, Norway and the UK.
- Publish findings in international journals and present results at conferences

Qualifications

We are looking for a highly motivated researcher with a background in climate science, meteorology, atmospheric physics, geophysics, mathematical modelling, or related fields. The ideal candidate should have:

- Experience with numerical climate models (such as EC-Earth or similar GCMs).
- Advanced programming skills in Python, Fortran, or other relevant languages.
- Knowledge of statistical methods for climate data analysis.
- Experience with high-performance computing (HPC) environments.
- A strong publication record relative to career stage.
- Ability to organize tasks and work in an interdisciplinary team.

Further requirements are English fluency, good writing and verbal communication skills.

Application

Please see below for guidance and formalities regarding the application procedure. Per default, the application system requires upload of

- Cover letter – please state your reasons for applying and your relevant qualifications
- Curriculum vitae
- Degree certificate
- Complete list of publications
- Statement of research plans and research activities – please indicate your previous

research and your intentions and visions with regard to carrying out the work involved in the position
- Teaching portfolio – please be aware, however, that apart from possible supervision activities, teaching is not planned for this position

Department of Environmental Science

The Department of Environmental Science is an interdisciplinary unit within the Faculty of Technical Sciences at Aarhus University. Our research covers physics, chemistry, microbiology, social sciences, geography, and environmental economics, addressing global challenges such as pollution control, land and water management, biodiversity protection, and climate change. The department also provides expert advisory services to ministries and authorities. While we do not run a master's program in environmental science, there are some opportunities for teaching and supervision. We value equality, diversity, and a balanced work-life approach. Currently, about 140 staff, postdocs, and PhD students work in the department.

The selected candidate will join the Section for Atmospheric Emissions and Modelling, specifically The Climate Modeling Group working with issues related to climate dynamics, climate change and climate feedbacks on both large and small scales. We work with Arctic warming and feedbacks, ice sheet mass balance, short-lived climate forcers, aerosol-climate interactions, terrestrial ecosystem and carbon cycle modeling, and machine learning for downscaling and estimating local-scale changes and impacts.

Work location

The place of work will be at Aarhus University, Frederiksborgvej 399, 4000 Roskilde, Denmark, and the area of employment is Aarhus University with related departments. The city of Roskilde (www.roskilde.dk) is located approx. 30 km from Copenhagen. The area provides immediate access to a wealth of cultural and recreational pursuits.

International candidates may find information concerning living and working in Denmark at www.workindenmark.dk. AU International Center offers a full range of services to make your transition to Denmark as smooth as possible (http://www.au.dk/en/internationalcentre/ias/), and the department will assist foreign candidates with finding a suitable place to live.

Contact information

Further information may be obtained by contacting Head of Section; Emission and Atmospheric Modelling, Professor Peter Langen plangen@envs.au.dk, +45 2061 8369.

Deadline

Applications must be received no later than May 2, 2025

Application procedure

Shortlisting is used. This means that after the deadline for applications – and with the assistance from the assessment committee chairman, and the appointment committee if necessary, – the head of department selects the candidates to be evaluated. All applicants will be notified whether or not their applications have been sent to an expert assessment committee for evaluation. The selected applicants will be informed about the composition of the committee, and each applicant is given the opportunity to comment on the part of the assessment that concerns him/her self. Once the recruitment process is completed a final letter of rejection is sent to the deselected applicants.

Letter of reference

If you want a referee to upload a letter of reference on your behalf, please state the referee's contact information when you submit your application. We strongly recommend that you make an agreement with the person in question before you enter the referee's contact information, and that you ensure that the referee has enough time to write the letter of reference before the application deadline.
Unfortunately, it is not possible to ensure that letters of reference received after the application deadline will be taken into consideration.

If you wish to add a referee **after** you have submitted your application, you must send this person's details (name, job title, place of work, and email address) as well as the name of the position you have applied for to: HR.Nattech@au.dk

Formalities and salary range

Technical Sciences refers to the Ministerial Order on the Appointment of Academic

Staff at Danish Universities under the Danish Ministry of Science, Technology and Innovation.

The application must be in English and include a curriculum vitae, degree certificate, a complete list of publications, a statement of future research plans and information about research activities, teaching portfolio and verified information on previous teaching experience (if any). Guidelines for applicants can be found here.

Appointment shall be in accordance with the collective labour agreement between the Danish Ministry of Taxation and the Danish Confederation of Professional Associations. Further information on qualification requirements and job content may be found in the Memorandum on Job Structure for Academic Staff at Danish Universities.

Salary depends on seniority as agreed between the Danish Ministry of Taxation and the Confederation of Professional Associations.

Aarhus University's ambition is to be an attractive and inspiring workplace for all and to foster a culture in which each individual has opportunities to thrive, achieve and develop. We view equality and diversity as assets, and we welcome all applicants.

Research activities will be evaluated in relation to actual research time. Thus, we encourage applicants to specify periods of leave without research activities, in order to be able to subtract these periods from the span of the scientific career during the evaluation of scientific productivity.

Aarhus University offers a broad variety of services for international researchers and accompanying families, including relocation service and career counselling to expat partners. Read more here. Please find more information about entering and working in Denmark here.

Aarhus University also offers a Junior Researcher Development Programme targeted at career development for postdocs at AU. You can read more about it here.

The application must be submitted via Aarhus University's recruitment system, which can be accessed under the job advertisement on Aarhus University's website.

Aarhus University

Aarhus University is an academically diverse and research-intensive university with a strong commitment to high-quality research and education and the development of society nationally and globally. The university offers an inspiring research and teaching environment to its 38,000 students (FTEs) and 8,300 employees, and has an annual revenues of EUR 935 million. Learn more at www.international.au.dk/