

Postdoc in Merging Soil Physics Knowledge and Data-driven Modeling of Soil Processes and Properties

The Department of Agroecology at Aarhus University, Denmark, is offering a postdoctoral position in merging soil physics knowledge and data-driven modeling of soil processes and properties, starting 01-05-2026 or as soon as possible thereafter. The position will be available for a 3 -year period.

You will be part of a research environment focusing on soil physics. You will be contributing to specifically the area of soil water retention and transport in the vadose zone and the main focus of your position will be to develop hybrid differentiable models that combine soil physics and soil science knowledge with data-driven components to predict soil properties and processes under sparse, uneven, or incomplete datasets, with an emphasis on modeling water and solute transport in the vadose zone. You will work experimentally with already established datasets of soil hydraulic and physical properties, including soil water retention and hydraulic conductivity measurements, and supporting datasets such as soil texture, bulk density, and organic carbon.

We expect that you will be an important part of the research environment and that you will contribute positively to the social working environment. We also expect that you will take part in our teaching activities and that you will report research results in high-impact scientific journals.

Your profile

We are searching for a highly motivated candidate who has

- A PhD in soil physics, environmental science, hydrology, geoscience, or similar fields
- Collaborative skills and ability to demonstrate commitment in teams. A fondness of taking the initiative and the motivation to pursue a scientific career
- Documented experience in scientific writing and publication in peer-reviewed scientific journals
- Research experience in some of the areas of pedotransfer functions, soil hydraulic properties, developing differentiable models

Additional qualifications

Further, we will prefer candidates with some of the following qualifications:

- Teaching and supervision experience at the BSc and MSc level
- Interest and experience in developing competitive national and international research applications
- Experience in planning and conducting field-work
- Experience in planning and conducting laboratory work.
- Insight into applied mathematics, linear algebra, process-based modeling, and soil health indicators.
- Experience with Python, applied statistics, and gradient-based optimization

Who we are

At the Department of Agroecology, our main goal is to contribute to sustainable solutions to some of the world's biggest problems within the areas of soil, plants, animals, humans, and the environment. We want to make a difference by contributing to both fundamental knowledge generation and the attainment of sustainable production systems via innovative research, contracted policy advice, and education. We offer professional laboratories, greenhouses, semi-field, and field-scale research facilities, advanced computing capacities as well as an extensive national and international researcher network. The department consists of nine research sections with around 350 highly skilled employees, of which approximately 50% are scientific staff. More information can be found [here](#).

Application Deadline:
05 January 2026

Institute/Faculty:
Department of
Agroecology

Faculty:
Faculty of Technical
Sciences

Academic contact person:
Lis Wollesen de Jonge
Professor
lis.w.de.jonge@agro.au.dk
+4524940550

Vacant positions:
1

Number of months:
36

Hours per week:
37

Expected date of accession:
01/05/2026

We believe in encouraging inclusion, acceptance, and understanding by employing staff who bring unique perspectives to our department.

What we offer

- A collaborative, international research environment that combines high academic standards with an informal and supportive atmosphere. We value accountability, curiosity, flexibility, and teamwork in everything we do.
- An inclusive and respectful workplace culture, where mutual trust, kindness, and professional dialogue are part of daily life. We encourage open communication and develop a cohesive sense of community across teams and disciplines.
- A flexible working environment that supports work-life balance and individual needs.
- An active institutional commitment to diversity, equity, and inclusion – in recruitment, career development, and everyday interactions.
- An innovative and meaningful workplace where your work contributes to solving real-world challenges. No two days are alike, and we welcome creative thinking and new ideas.
- Support for international researchers and their families, including [Relocation Service](#) and an [Expatriate Partner Programme](#)

Living and working in Denmark

- Subsidised childcare and free education from primary school through university.
- Universal healthcare for you and your family as residents.
- Five weeks of paid holiday per year.
- Generous parental leave – up to 52 weeks shared between parents, with full or partial salary.

Place of Work

The place of work is Aarhus University, Campus Viborg, Blichers Allé 20, 8830 Tjele. The affiliation will be with the Department of Agroecology.

More information can be obtained from Professor Lis Wollesen de Jonge (lis.w.de.jonge@agro.au.dk) or Professor Mogens Humlekrog Greve (greve@agro.au.dk).

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/