UNIVERSITETET I OSLO

Jobbnorge ID: 294736
Deadline: 3/1/2026
Website: http://www.uio.no/
Scope: Fulltime
Duration: Temporary

PhD Research Fellow in Mathematics and Fluid Mechanics

About the position

Position as PhD Research Fellow in Mathematics and Fluid mechanics available at the Department of Mathematics.

Starting date no later than October 1st, 2026.

The fellowship period is three years.

A fourth year maybe considered and it will involve 25% of other career-promoting work. Other career-promoting work may consist of teaching, supervision, and/or research assistance. This is dependent upon the qualification of the applicant and the current needs of the department.

No one can be appointed for more than one PhD Research Fellowship period at the University of Oslo.

Place of work is the Department of Mathematics at Blindern, Oslo.

Ocean waves follow complex patterns influenced by wind, currents, and the shape of the seafloor. Predicting extreme events like freak waves (unexpectedly large waves), frequency downshift (a permanent shift to lower wave frequencies) and transverse modulations remains a challenge. These phenomena are critical for offshore engineering, ship design, and coastal safety, but their occurrence is highly uncertain due to natural variability in wave conditions. Computational tools for simulating waves and quantifying such uncertainties will help scientists and engineers to accurately predict when, where and how likely it is that extreme waves might occur.

The candidate will conduct research and develop computational tools for simulation and modeling of wave dynamics, and for uncertainty quantification of extreme events. The project will combine stochastic mathematical models of wave physics with advanced computational methods for uncertainty quantification, such as the multilevel Monte Carlo method. For access to experimental data to validate mathematical models for wave motion, it will be natural to interact with ongoing experimental activities carried out in the Hydrodynamical Laboratory at the Department of Mathematics.

What skills are important in this role?

The Faculty of Mathematics and Natural Sciences has a strategic ambition to be among Europe's leading communities for research, education and innovation. Candidates for these fellowships will be selected in accordance with this, and expected to be in the upper segment of their class with respect to academic credentials.

Required qualifications:

- Master's degree, or equivalent, in Applied/Computational Mathematics or Fluid Mechanics.
- Foreign completed degree (M.Sc.-level) corresponding to a minimum of four years in the Norwegian educational system.
- Strong background in the theoretical foundations and numerical methods for partial differential equations (PDEs), with emphasis on hyperbolic PDEs (e.g., wave equations).
- Fluent oral and written communication skills in English.

Candidates without a master's degree have until **June 30, 2026** to complete the final exam.

Desired qualifications:

- Background in probability theory and Monte Carlo methods, and familiarity with stochastic processes.
- Strong background in hydrodynamic, nonlinear and stochastic wave theory.
- Motivation to pursue interdisciplinary research that bridges mathematical theory, physical modeling and scientific computing.

Language requirement:

- Good oral and written communication skills in English
- English requirements for applicants from outside of EU/ EEA countries and exemptions from the requirements: https://www.mn.uio.no/english/research/phd/regulations/regulations.html#toc8

Grade requirements:
The norm is as follows:

- The average grade point for courses included in the Bachelor's degree must be C or better in the Norwegian educational system
- The average grade point for courses included in the Master's degree must be B or better in the Norwegian educational system
- The Master's thesis must have the grade B or better in the Norwegian educational system

The purpose of the fellowship is research training leading to the successful completion of a PhD degree. For more information see: http://www.mn.uio.no/english/research/phd/

All candidates and projects will have to undergo a check versus national export, sanctions and security regulations. Candidates may be excluded based on these checks. Primary checkpoints are the Export Control regulation, the Sanctions regulation, and the national security regulation.

What are we looking for in you?

Personal skills:

- Ability to work both independently and as part of a team
- Ability to work precise in a structured manner and swiftly adapts to new tasks
- Good communication and collaboration skills
- Positive attitude and the ability to handle hectic periods

Employment in the position is based on a comprehensive assessment of all qualification requirements applicable to the position, including personal qualifications.

We can offer you

- A pleasant and stimulating work environment
- Good welfare schemes
- Opportunity of up to 1.5 hours a week of exercise during working hours
- A workplace with good development and career opportunities
- Career development programmes
- Membership in the Statens Pensjonskasse, which is one of Norway's best pension schemes with beneficial mortgages and good insurance schemes
- Oslo's family-friendly surroundings with their rich opportunities for culture and outdoor activities
- Salary in position as PhD Research Fellow, position code 1017 in salary range NOK from 550 800 - 595 000, depending on competence and experience. From the salary, 2 percent is deducted in statutory contributions to the State Pension Fund

We need different perspectives in our work

UiO is an open and internationally oriented comprehensive university that strives to be an inclusive and diverse workplace and academic environment. You can read more about UiO's work on equality, inclusion, and diversity at uio.no.

We fulfill our mission most effectively when we draw upon our variety of experiences, backgrounds, and perspectives. We are looking for great colleagues, could you be the next one?

We will do our best to accommodate your needs. Relevant adjustments may include modifications to working hours, task adaptations, digital, technical, or physical adjustments, or other practical measures.

If you have an immigrant background, a disability, or CV gaps (Norwegian), we encourage you to indicate this in the job application portal. We always invite at least one qualified candidate from each group for an interview. In this context, disability is defined as an applicant who identifies as having a disability that requires workplace or employment-related accommodations. For more details about the requirements, please refer to the Employer portal (Norwegian).

The selections made in the job application portal are used for anonymized statistics that all state employers include in their annual reports. More information about gender equality initiatives at UiO can be found here.

We hope you will apply for the position with us.

How to apply

The application must include:

- Cover letter - statement of motivation and research interests
- CV (summarizing education, positions and academic work - scientific publications)
- Copies of the original Bachelor and Master's degree diploma and transcripts of records (see below)
- Letters of recommendation: these are not to be submitted with the application, but may be requested later during the evaluation process
- Documentation of English proficiency if applicable
- List of publications and academic work that the applicant wishes to be considered by the evaluation committee, if relevant
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

Application with attachments must be submitted via our recruitment system Jobbnorge, click "Apply for this job". Foreign applicants should attach an official explanation of their University's grading system.

When applying for the position, we ask you to retrieve your education results from Vitnemålsportalen.no. If your education results are not available through Vitnemålsportalen, we ask you to upload copies of your transcripts or grades. Please note that all documentation must be in English or a Scandinavian language.

Contact persons:

For further information please contact: Associate Professor Håkon Hoel, phone: +47 417 93264, e-mail: haakonah@math.uio.no or Professor Karsten Trulsen, phone: +47 413 22402, e-mail: karstent@math.uio.no

For questions regarding Jobbnorge, please contact HR Adviser Ole Rustad, e-mail: ole.rustad@mn.uio.no

General information

The best qualified candidates will invited for interviews.

Applicant lists can be published in accordance with Norwegian Freedom of Information Act § 25. When you apply for a position with us, your name will appear on the public applicant list. It is possible to request to be excluded from this list. You must justify why you want an exemption from publication and we will then decide whether we can grant your request. If we can't, you will hear from us.

Please refer to Regulations for the Act on universities and colleges chapter 3 (Norwegian), Guidelines concerning appointment to post doctoral and research posts at UiO (Norwegian) and Regulations for the degree of Philosophiae Doctor (PhD) at the University of Oslo.

The University of Oslo has a transfer agreement with all employees that is intended to secure the rights to all research results etc.

About the University of Oslo

The University of Oslo is Norway's oldest and highest rated institution of research and education with 26 500 students and 7 200 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The Department of Mathematics is part of the Faculty of Mathematics and Natural Sciences at the University of Oslo. The Department is engaged in teaching and research covering a wide spectrum of subjects within mathematics, mechanics and statistics. The research is on theory, methods and applications. The areas represented include: fluid mechanics, biomechanics, statistics and data science, computational mathematics, combinatorics, partial differential equations, stochastics and risk, algebra, geometry, topology, operator algebras, complex analysis and logic.

We have almost 50 persons in permanent academic positions and a large number of post docs and Ph.D. students. We also have an administrative and technical staff. The department represents a leading research environment in mathematical areas in Norway, and has a highly international profile.

Additional information

Place of service:

Moltke Moes vei 35 0851 Oslo (Oslo Municipality)