Position as researcher in Plasma and Space Physics - Ionospheric Plasma Modeling and Experiments

Job description

A position as Researcher in Plasma and Space Physics, with the focus on numerical ionospheric plasma processes in the polar regions, is available at the Department of Physics.

The position is for 3 years. Within the framework of the position, duties may be assigned.

Starting date: 1 September 2020.

More about the position

The position is funded through the ERC Consolidator Grant entitled: “4DSpace: integrated study for space weather at high latitudes”, which combines in-situ experiments by sounding rockets, ground-based measurements, numerical modeling, and satellite data. It aims to determine the role of the auroral particle precipitation at different geomagnetic conditions in forming plasma density irregularities at various altitudes, by accounting also for collisions with neutral background. It will also establish foundations for the physically based forecasting of scintillations of trans-ionospheric radio waves in the polar regions.

The successful candidate will be responsible for large scale numerical simulations with numerical particle-in-cell codes to study the evolution of plasma instabilities and onset of turbulence at kinetic levels, accounting also for auroral particle precipitation and weakly collisional plasmas. The candidate will also relate this work to the results from in-situ sounding rocket experiments in the ionosphere. Another task will also be to address rocket payload-plasma interactions in order to understand the measurement conditions.

The successful candidate will be a part of Section for Plasma and Space Physics at the Department of Physics as well as the 4DSpace Strategic Research Initiative. The main focus of these groups is to advance our understanding of processes in the high-latitude ionosphere, including plasma irregularities, turbulence and space weather effects in the polar regions. The main tools used for this research are ground-based instruments, including radar and optical systems (EISCAT, SuperDARN, all-sky-imagers), advanced numerical models, and instruments on board spacecraft and sounding rockets. For more information, see: [http://www.mn.uio.no/4dspace/](http://www.mn.uio.no/4dspace/).

Qualification requirements

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. Candidates for these positions 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:

- A Ph.D. degree (or obtaining the Ph.D. degree before the end of June) or equivalent.
- Strong background in plasma physics.
- Good experience in numerical modeling and code development, in particular particle-in-cell methods.
- A good command of English.
- Good social and collaboration skills and ability to work independently and in an interdisciplinary scientific environment.

Desired qualifications:

- Experience in data analysis from in-situ plasma measurements, preferably with sounding rockets or another spacecraft.
- Experience in ionospheric plasma physics at high latitudes and dynamic phenomena related to solar wind-magnetosphere-ionosphere coupling.

We offer

- Salary NOK 523 200 - 583 900 per annum depending on qualifications in position as Researcher (position code 1109)
- Attractive [welfare benefits](#) and a generous pension agreement
- Professionally stimulating working environment
- Vibrant international academic environment
- Career development programmes
- Oslo’s family-friendly surroundings with their rich opportunities for culture and outdoor activities

How to apply

An expert committee will evaluate the applications. Information and materials that should be considered by the committee must be submitted within the deadline. Applicants will normally be called in for interview.
The application must include:

- Cover letter (statement of motivation, summarizing scientific work and research interests)
- CV (summarizing education, positions, and other qualifying activity)
- Copies of educational certificates, academic transcript of records and letters of recommendation
- A complete list of relevant publications and thesis that the applicant wishes to be considered by the evaluation committee.
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

Foreign applicants are advised to attach an explanation of their University’s grading system. Please remember that all documents should be in English or a Scandinavian language. Applications with documents missing will not be considered further.

Formal regulations

Please refer to the regulations for the use of researcher positions:

According to the Norwegian Freedom of Information Act (Offentleglova) information about the applicant may be included in the public applicant list, also in cases where the applicant has requested non-disclosure.

The University of Oslo has an agreement for all employees, aiming to secure rights to research results etc.

In accordance with the University of Oslo’s equal opportunities policy, we invite applications from all interested individuals regardless of gender or ethnicity. The University of Oslo has a goal of recruiting more women in academic positions. Women are encouraged to apply.

Contact information

Prof. Wojciech Miloch, w.j.miloch@fys.uio.no, tel. +47 22 85 60 14

For questions regarding the recruitment system, please contact: Elin Thoresen, phone:+47 22 85 71 96, e-mail: elin.thoresen@mn.uio.no

About the University of Oslo

The University of Oslo is Norway’s oldest and highest rated institution of research and education with 28 000 students and 7000 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The research at the Department of Physics covers a broad range of subfields within physics and technology: From space research to medical physics. A good proportion of the research is interdisciplinary, and conducted in close cooperation with collaborators in Norway and abroad. Education and teaching are other essential activities.

We offer a broad range of courses, and the Department is involved in several study programmes at bachelor’s and master’s level. Some of the best lecturers in Norway are amongst our employees, and we are proud of our prizewinning teaching and learning environment. The Department has 200 employees, of which 50 are permanent scientific positions. On a yearly basis 20 students complete their Ph.D. and 50 finish their M.Sc. degree.

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