UNIVERSITETET I OSLO

Jobbnorge ID: 186031
Deadline: 5/7/2020
Website: http://www.uio.no/
Scope: Fulltime
Duration: Fixed Term

PhD Research Fellowship in Plasma and Space Physics - Space Weather Effects and Modeling

Job description

A position as PhD Research Fellow in Plasma and Space Physics, with the focus on modeling of space weather effects in the polar regions, is available at the Department of Physics.

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

The PhD position is of 3 years duration. If the candidate has the necessary qualifications and based on the teaching need of the Department, the candidate can apply for an additional 25 % teaching duty resulting in a total length of the fellowship of 4 years.

Starting date no later than 01.10.2020.

More about the position

The successful candidate will be the member of the 4DSpace Strategic Research Initiative, as well as the Section for Plasma and Space Physics at the Department of Physics. 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 (all-sky-imagers, EISCAT, SuperDARN), advanced numerical models, and instruments on board spacecraft and sounding rockets. For more information, see: http://www.mn.uio.no/4dspace/

The PhD project will be related to the development of the physically based model for space weather and will be a part of a larger project within 4DSpace. We will here focus on the relationship between irregularities in the plasma density and scintillations of transionospheric radio signals. The PhD candidate will put together observations from the in-situ and ground-based observations and will identify plasma conditions for severe disturbances in the signal propagation.

The candidate will also be assisted by numerical simulations to study the role of small-scale plasma irregularities and modulations by other processes, such as currents and auroral particle precipitations, on the propagation of radio signals. Thus, in the scope of the project, we will study the signal propagation through a turbulent ionosphere, analyse ground based and satellite data and correlate observed effects to physical processes in plasma that will be inferred from simulations. This will contribute to establishing the physically based forecasting of scintillations of trans-ionospheric radio waves in the polar regions. The data analyzed will be from the ionospheric sounding rockets, satellites, and ground based instruments (e.g., scintillation receivers, all-sky-imagers, radars) located in the Arctic and in Antarctica.

Qualification requirements

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. 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.

- Master’s degree or equivalent in physics or related discipline.
- Experience in ionospheric plasma physics at high latitudes and dynamic phenomena related to solar wind-magnetosphere-ionosphere coupling.
- Documented experience in data analysis.
- Fluent oral and written communication skills in English. Please see English requirements for applicants from outside of EU/ EEA countries.
- Good social and collaboration skills and ability to work independently and in an interdisciplinary scientific environment.

Candidates without a Master’s degree have until 15 August, 2020 to complete the final exam.

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

https://www.mn.uio.no/english/research/phd/application/application.html

Desired qualifications:

- Good background in plasma physics.
- Experience in working with data from in-situ plasma measurements, such as from satellites or sounding rockets.
- For candidates who apply for a fourth year including teaching, good knowledge of Norwegian or another Scandinavian language is strongly preferred.

The purpose of the fellowship is research training leading to the successful completion of a PhD degree.

The fellowship requires admission to the PhD program at the Faculty of Mathematics and Natural Sciences. The application to the PhD program must be submitted to the department no later than two months after taking up the position. For more information see:

http://www.uio.no/english/research/phd/

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We offer

- Salary NOK 479 600 - 523 200 per annum depending on qualifications and seniority as PhD Research Fellow (position code 1017)
- Vibrant international academic environment
- Attractive welfare benefits and a generous pension agreement
- Oslo's family-friendly surroundings with their rich opportunities for culture and outdoor activities

How to apply

The application must include:

- Cover letter including a description of scientific interests and the motivation for applying for the position (max. 2 pages)
- CV (summarizing education, positions and academic work - scientific publications)
- Copies of the original Bachelor and Master's degree diploma, transcripts of records and letters of recommendation
- Documentation of English proficiency if needed (please see admission criteria)
- List of publications and academic work 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)
- Applicants who are interested in teaching need to add to this application a description of their motivation for teaching.

The application with attachments must be delivered in our electronic recruiting system, please follow the link "Apply for this job". Foreign applicants are advised to attach an explanation of their University's grading system. Please note that all documents should be in English (or a Scandinavian language). Note that applications with missing documents will not be considered further.

Applicants will normally be called in for an interview

Formal regulations

Please see the guidelines and regulations for appointments to Research Fellowships at the University of Oslo.

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.

The University of Oslo aims to achieve a balanced gender composition in the workforce and to recruit people with ethnic minority backgrounds.

Contact information

Prof. Wojciech Miloch, w.j.miloch@fys.uio.no, tel. +47 22856014

For technical questions regarding the application system, please contact HR Adviser Elin Thoresen, +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.

Additional information

Place of service:

Fysisk Institutt, UiO 0313 Oslo (Oslo Municipality)