UNIVERSITETET I OSLO

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Omfang: Heltid
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PhD Research Fellowship in Biogeosciences

Job description

A PhD Research Fellowship in Biogeosciences is available at the Department of Geosciences at the Faculty of Mathematics and Natural Sciences.

The fellowship period is 3 years and devoted to carry out a project entitled “Winter-proofing land surface models - quantifying the critical role of cold season processes in vegetation-permafrost feedbacks”, funded by the Norwegian Research Council under grant nr. 274711. Preferred starting date no later than 01.10.2018

More about the position

Climate change has an amplified impact on the Arctic, which is warming two to three times faster than the rest of the world. These fast changes can lead to large climate feedbacks through a change in the land-atmosphere exchange of energy and carbon. Accurate predictions of future arctic climate feedbacks require well-informed land surface models (LSMs) that are able to simulate the complex snow-vegetation-permafrost interactions responsible.

Despite strong advances in recent years, LSMs are still missing key winter-time processes. Observations have shown that large bursts of methane and CO2 can be released from permafrost soils during the autumn freeze-in, while winter extremes can cause widespread damage to shrubs - contributing to arctic browning. The poor representation of the cold season in land surface models (LSMs) adds to the large uncertainty of the future trajectory of the arctic carbon cycle.

The successful PhD candidate will work with the regional Earth System model WRF-CLM with a focus on the Community Land Model (CLM5, i.e. the LSM of WRF-CLM). The project and the successful candidate will develop new cold season processes in CLM related to soil gas fluxes and frost tolerance of vegetation, which will be tested at the site level and the pan-Arctic scale. Once the new modules are operational, coupled model runs in WRF-CLM will be used to quantify the role of changing arctic winters on permafrost carbon release and arctic vegetation trends.

The work will be done in an active collaboration with the strategic research area ‘LATICE’ of the Faculty of Mathematics and Natural Sciences at the University of Oslo. The successful candidate will collaborate internationally with a partner project at the University of Lund, Sweden, which also focuses on the representation of winter-time processes in land surface models. The specific focus of these two projects will be closely coordinated with each other, and the PhD fellow is expected to go on an extended visit to Lund (~3 months).

A detailed project plan will be developed in collaboration with the successful candidate, depending on qualifications and interests and new projects for the center.

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.

- Applicants must hold a Master’s degree or equivalent in the biogeosciences, physical geography, ecology, or a related field.
  - 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 average grade point for courses included in the Bachelor’s degree must be C or better in the Norwegian educational system
- Applicants must demonstrate experience in working with complex systems through numerical modelling. Experience with an LSM and the interpretation of carbon flux measurements is advantageous.
- Applicants must demonstrate good programming skills.
- Applicants must be willing to work in a multidisciplinary manner, drawing on both the fields of physical geography and ecology.
- All Ph.D. candidates must demonstrate high English language skills. International applicants must document these skills prior to admission to the PhD programme by passing one of the following tests with these or better grades:
  - TOEFL - Test of English as Foreign Language, internet based test (IBT). Minimum total score: 80
  - IELTS - International English Language Testing Service. Minimum overall band score: 6.5
  - Certificate in Advanced English (CAE) and Certificate of Proficiency in English (CPE) from the University of Cambridge
  - PTE Academic - Pearson Test of English Academic. Minimum overall score: 62
  - Please see here for exemptions to the English requirements.

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

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

Application and admission to the PhD programme in natural sciences.

We offer

- Salary NOK 436 900 - 490 900 per year depending on qualifications and seniority as PhD Research Fellow, (position code 1017)
- Attractive welfare benefits and a generous pension agreement, in addition to Oslo's family-friendly environment with its rich opportunities for culture and outdoor activities

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 educational certificates, transcript of records and letters of recommendation
- Documentation of English proficiency
- 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)

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).

Applicants may be called in for an interview.

Formal regulations

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

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

According to the Norwegian Freedom and 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

Frans-Jan W. Parmentier, f.j.w.parmentier@geo.uio.no

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For technical questions about the recruitment system, please contact HR Officer Helene Jansen, h.b.jansen@mn.uio.no, +47 22857196

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 geosciences are the studies of planet Earth; the atmosphere, the hydrosphere and cryosphere, the earth's surface and it's interior. **The Department of Geosciences** is Norway's widest ranging academic geoscience

research environment, encompassing four sections (Meteorology and Oceanography, Geography and Hydrology, Geology and Geophysics, Physics of Geological Processes) and one Centre of Excellence (Centre of Earth Evolution and Dynamics). In addition we participate in other centres and hold several ERC grants. The staff consists of 40 professors and associate professors, in addition to postdoctoral fellows, PhD students, researchers, technical staff and administrative personnel, to a total number of 240.

Tilleggsinformasjon

Arbeidssted:

Problemveien 7 0313 Oslo (Oslo Kommune)