

Department of Applied Mathematics and Computational Sciences – research position in numerical mathematics with applications to computational sciences

Offer description

We are looking forward **PhD students, research assistants and researchers** on a full time/part time job interested in a wide range of topics among numerical mathematics and computational geosciences that are specified below. The position(s) is available since October 2024.

Research topic

The [Institute of Geonics of the Czech Academy of Sciences](#) (UGN) located in Ostrava, Czech Republic, is carried out scientific research on the Earth's crust and its landscapes, to contribute to the utilization of its research results, and to provide a research infrastructure. [Department of Applied Mathematics and Computational Sciences](#) (DAMCS) has research activities in development, analysis, implementation and application of models and numerical methods motivated by geo-applications like deep nuclear waste repositories, geotechnical stability assessment or classification of seismic events. The focus is on elastic and plastic models, flow in porous media with or without fractures and heat transport. The research of the DAMCS includes advanced topics as coupling of these models (thermo-hydro-mechanics), inverse analysis, limit load analysis, uncertainty treatment, Bayesian inverse analysis or machine learning. Particular interest is in iterative techniques, solvers, high-performance computing methods for demanding applications and software development.

The activities performed by the AMCS Team attempts to encourage interactions between mathematical and engineering communities, and we would like to get benefit from the fact that engineering motivates development or extension of many mathematical theories and, conversely, a contemporary mathematical background can substantially improve engineering computations.

Responsibilities

Your responsibilities will include:

- Carrying out research related to team activities and projects.
- Close collaborations with our partners.
- Presenting project results at international conferences and in scientific journals.
- Activity in preparation new projects (national and international).

There are no teaching duties associated with the position. Nevertheless, the cooperation with universities is welcome.

Candidate profile

We are looking for candidates who:

- Hold at least a master degree (or equivalent) in Applied Mathematics, Optimization, Computer Science, Computational Mechanics or related fields.
- Have very good skills in at least one of the following computer languages: Matlab, Python, C/C++, PETSc, Fortran. Experiences with commercial codes are welcome;
- Have the ability to work in a research team and learn new things;
- Possess good written/verbal knowledge of English;

We offer

- Participation in interdisciplinary research programs and in international collaborations;
- Friendly atmosphere at DAMCS;
- Opportunities for professional growth by contributing to the Department's research mentioned above;
- 5 weeks of vacation, 5 days of medical leave, allowance for meals, allowance for pension insurance products after one year of employment.

Application procedure

The applications are to be sent to podatelna@ugn.cas.cz and should contain:

- Academic curriculum vitae including a detailed list of publications;
- Motivation letter (up to two pages), stating personal goals and research interests and their relation to the research topics of DAMCS;
- A proof of the obtained degrees.
- Optionally, letters of recommendation, sent directly to podatelna@ugn.cas.cz.

For full consideration, complete applications must be received by **6th September 2024**, but applications will be accepted until the position is filled.

Evaluation procedure

After the application deadline, the evaluation committee will review the applications and invite shortlisted candidates to the interview stage, no later than **20th September 2024**.

For more information

- Please feel free to contact [Mgr. Stanislav Sysala, Ph.D.](mailto:stanislav.sysala@ugn.cas.cz) at stanislav.sysala@ugn.cas.cz