PhD fellowship in Computational Dynamics and Stochastics on Manifolds

About the position

A new PhD fellowship in computational dynamics and stochastics on manifolds (CODYSMA), supervised by Kurusch Ebrahimi-Fard, is available at the Department of Mathematical Sciences at NTNU starting in the end of June 2020. The position is part of the research project ‘Computational Dynamics and Stochastics on Manifolds (CODYSMA), financed by the Research Council of Norway. The successful candidate will be offered a three-year position. The Department may offer a six to twelve-month extension as a teaching assistant. The workplace will be Trondheim, Norway.

Duties of the position

The main objective of the CODYSMA project is to develop novel mathematical tools and numerical algorithms for analysis and solution of stochastic and deterministic differential equations on manifolds. The project is a cooperation between NTNU, Trondheim and the University of Bergen (one PhD position is announced in each site). The CODYSMA project group consists of internationally renowned researchers from Norway, Austria, New Zealand, Switzerland and United Kingdom. Topics of expertise in the group include geometric numerical integration, stochastic analysis, differential geometry, algebra and combinatorics. Research tasks for the PhD project related to this announcement will be adapted to the applicant. Possible topics are numerical analysis of differential equations, with a focus on geometric and algebraic aspects, S(P)DEs, rough paths and renormalization. The PhD project will be conducted in the research group for Differential equations and numerical analysis (DNA) at NTNU (campus Gløshaugen, Trondheim).

Required selection criteria

We are looking for a highly motivated and strong candidate with background in at least one of the relevant areas of mathematics. Interest in working with stochastic differential equations is an advantage. Some coding background is beneficial, but not necessary. Applicants must be able to work independently and in a structured manner and demonstrate good collaborative skills.

The PhD-position's main objective is to qualify for work in research positions. The qualification requirement is that you have completed a master’s degree or second degree (equivalent to 120 credits) with a strong academic background in mathematics or equivalent education with a grade of B or better in terms of NTNU's grading scale. If you do not have letter grades from previous studies, you must have an equally good academic foundation. If you are unable to meet these criteria you may be considered only if you can document that you are particularly suitable for education leading to a PhD degree.

MSc students who expect to complete their master’s degree studies by summer 2020 are also encouraged to apply. Employment will then be postponed until the master’s degree is finished.

The applicants who do not master a Scandinavian language must document a thorough knowledge of English (equivalent to a TOEFL-iBT score of 100 or more (earlier TOEFL score of 600 or more)).

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and national guidelines for appointment as PhD, post doctor and research assistant.

Personal characteristics

- High self-motivation
- Intrinsic curiosity and open-minded attitude
- Independent working style
- Very good communication skills

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, in terms of the qualification requirements specified in the advertisement.

We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and inclusive work environment with dedicated colleagues
- favourable terms in the Norwegian Public Service Pension Fund
- employee benefits

Salary and conditions

PhD candidates are remunerated in code 1017 and are normally remunerated at gross from NOK 479 600 per annum before tax, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.
The period of employment is 3 years with no teaching, but the Department may offer a 4th year with teaching and other duties for approximately 25% of the entire 4-year period.

Appointment to a PhD position requires that you are admitted to the PhD programme in mathematics (http://www.ntnu.edu/ie/research/phd) within three months of employment, and that you participate in an organized PhD programme during the employment period.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants, and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU. After the appointment you must assume that there may be changes in the area of work.

It is a prerequisite you can be present at and accessible to the institution on a daily basis.

About the application

The application must include the following:

- CV including information on educational background, work experience, preprints and publications.
- A short research statement explaining the experience and the interest of the candidate for the research topic and describing the relevance of the candidate’s background to the research project (maximum 1 page).
- A copy of the master thesis, for those who are near to completion of their MSc, an extended abstract combined with a statement of how and when the applicant plans to complete the thesis.
- Any relevant publications. Joint work will only be considered provided that a short summary outlining the applicant's contributions is attached.
- Certified copies of relevant transcripts and diplomas. Candidates from universities outside Norway are kindly requested to send a Diploma Supplement or similar documentation, which describes in detail the program of study, the grading system, and the rights to further studies associated with the degree obtained.
- Contact information for at least two references.
- Documentation of fluency in the English language.
- Other documents, which the applicant find relevant may also be included. We may ask for further documents when it is necessary during the hiring process.

General information

Working at NTNU

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background.

The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the innovation capital of Norway with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

NTNU is committed to following evaluation criteria for research quality according to The San Francisco Declaration on Research Assessment - DORA.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

Information Act (Offentleglova), your name, age, position and municipality may be made public even if you have requested not to have your name entered on the list of applicants.

If you have any questions about the position, please contact Kurusch Ebrahimi-Fard, email kurusch.ebrahimi-fard@ntnu.no.

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates. Applications submitted elsewhere will not be considered. Diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from China Credentials Verification (CHSI).

If you are invited for interview you must include certified copies of transcripts and reference letters. Please refer to the application number 2020/10835 when applying.


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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

Department of Mathematical Sciences

We are Norway’s largest university environment in mathematical sciences. The Department has a particular responsibility for all basis education in mathematical sciences for engineering and natural science students at NTNU. We focus on long-term basic research and applied research at a high international level.

Our aim is to meet the society’s needs for mathematical and statistical expertise in business and public administration as well as in the research and education sector. The Department of Mathematical Sciences is one of seven departments in the Faculty of Information Technology and Electrical Engineering.