

**NTNU - knowledge for a better world**

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

Faculty of Information Technology and Electrical Engineering

Department of Mathematical Sciences (IMF)

## PhD fellowship/Postdoctoral fellowships in “Waves and Nonlinear Phenomena (WaNP)”

Two new PhD fellowship/Postdoctoral fellowships in partial differential equations are available at the Department of Mathematical Sciences at NTNU. The successful candidates will be offered a three-year position as a PhD fellow or a two-year position as a Postdoctoral fellow with the possibility of up to one-year extension. The Department may offer a six to twelve-month extension with teaching duties. The workplace will be Trondheim.

### About the research project and the job description

*Funding:* The positions are funded by the project “Waves and Nonlinear Phenomena (WaNP)” (<https://wiki.math.ntnu.no/wanp>) supported from Research Excellence program (“Toppforsk”) of the Research Council of Norway. The project involves five senior researchers (prof. H. Holden (PI), prof. M. Ehrnström, asso.prof. K. Grunert, prof. E. R. Jakobsen, prof. P. Lindqvist) and about 10 PhD fellows and Postdoctoral fellows.

*Objectives:* Partial differential equations constitute the dominant tool to describe the physical nature. The main goal of *WaNP* is to analyze the interplay of singularities and nonlocal effects in a class of carefully selected wave equations. As singularities appear, our tools to understand their behavior break down; and as nonlocal effects come into play, the study of essentially local singularities requires a global understanding of the problem. As part of our program we shall study these and related problems both for deterministic equations and equations with uncertainties.

*Methodology:* We will use advanced techniques based on mathematical analysis, and where necessary, stochastic analysis and numerical analysis.

*Expected results:* We expect to obtain improved understanding for the equations that are analyzed. The results will be communicated in premier international research journals and at scientific meetings.

### Qualifications

We seek candidates with a good mathematical background at master/PhD level or equivalent. Ability to work in teams and to collaborate with other scientists with a different background are very important, as well as strong motivation for working on the project.

The successful candidate must have a strong background in partial differential equations. Basic knowledge of advanced mathematical analysis is desirable. A familiarity with numerical analysis or stochastic analysis is an advantage.

The applicants who do not master a Scandinavian language must document a thorough knowledge of English, both written and spoken. The following tests can be used as such documentation: TOEFL, IELTS or Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE). Minimum scores are:

TOEFL: 600 (paper-based test), 92 (Internet-based test)  
IELTS: 6.5, with no section lower than 5.5 (only Academic IELTS test accepted)  
CAE/CPE: grade B or A

The PhD applicants must have a Master’s degree in mathematics. They must satisfy the requirement for entering the PhD program at NTNU; please see <http://www.ntnu.edu/ime/research/phd>. The admission to PhD education at NTNU requires an average grade of A or B within a scale of A-E for passing grades (A best) for the last two years of the MSc, and C or higher for the BSc. MSc students who expect to complete their Master’s degree studies by summer 2018 are encouraged to apply. Employment will then be postponed until the Master’s degree is finished.

The postdoctoral applicants must have a PhD degree in partial differential equations, in mathematical analysis, or a corresponding education. They must hold a PhD degree or have submitted their thesis at the time of the application.

### The application

The application must include the following:

- A short research statement explaining the experience and interest of the candidate for the research topic, and describing the relevance of the candidate's background to the research project (maximum 1 page).
- CV including a full list of publications with bibliographical references.
- The most important publications that are relevant for the evaluation of the applicant's qualifications (maximum 10 publications), mostly relevant for postdoc applicants.
- 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.
- Documentation of fluency in the English language.

Other documents which the applicant would find relevant may also be included, such as information about teaching experience, testimonials and certificates.

Incomplete applications will not be considered.

Applications are to be submitted electronically through this page. Preferably, the attachments should be submitted as a single file.

Please state if you are applying for the PhD or postdoctoral fellowship.

### **Terms of employment**

The position adheres to the Norwegian Government's policy of balanced ethnicity, age and gender. NTNU wishes to increase the number of women in its workforce, and female candidates are therefore encouraged to apply.

The appointment will be made according to Norwegian guidelines for universities and university colleges and to the general regulations regarding university employees. Applicants to the PhD fellowship must agree to participate in organized doctoral study programs within the period of the appointment and have to be qualified for the PhD-study.

The PhD fellowship is placed in salary code 1017, with a gross salary of NOK 436 500 per year before tax. A pension contribution of 2% of the salary will be deducted as an obligatory premium to the Norwegian Public Service Pension Fund.

The position as Postdoctoral fellow follows code 1352, and is remunerated at level 57 on the Norwegian government salary scale, with a gross salary of NOK 490 500 a year. A pension contribution of 2% of the salary will be deducted as an obligatory premium to the Norwegian Public Service Pension Fund.

The PhD/Postdoctoral fellows will be part of the Department of Mathematical Sciences at NTNU and will have their workplace there, and will join the group of Differential Equations and Numerical Analysis. See <http://www.ntnu.no/imf>.

Under Section 25 of the Freedom of Information Act, information about the applicant may be made public even if the applicant has requested not to have his or her name entered on the list of applicants.

For further information, please contact Professor Helge Holden, e-mail: ([helge.holden@ntnu.no](mailto:helge.holden@ntnu.no)).

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Closing date: 01.04.2018.

Jobbnorge-ID: 149193, Søknadsfrist: Avsluttet