NTNU

Kunnskap for en bedre verden

Jobbnorge-ID: 117463
Søknadsfrist: Closed
Nettside:
Omfang:
Varighet:

PhD position on Numerical simulation of droplet flow due to wave impacts (IVT - 116/15)

At the Norwegian University of Science and Technology (NTNU), a PhD scholarship on Numerical simulation of droplet flow due to wave impacts is available at the Division of Fluids Engineering, Department of Energy and Process Engineering, Faculty of Engineering Science and Technology. The PhD project is a part of a larger research project entitled SprayIce- Characterization of Wave Impact Spray Generation for better prediction of marine icing on structures carried out in collaboration with SINTEF Materials and Chemistry, Trondheim, from July 2015 until June 2018 and funded by the Research Council of Norway. Within the SprayIce research project, another PhD position on Wave-spray experiments has been announced separately.

The objective of the SprayIce research project is to develop a better physics understanding and prediction capabilities of spray properties, formed during wave impacts against structures. This information is critical in order to predict ice accretion on structures in the arctic.

The PhD project ***Numerical simulation of droplet flow due to wave impacts*** will involve one or more of the following research tasks:

- Improve methods to simulate the formation of droplets due to wave impacts towards structures under influence of wind.
- Prediction of wave dynamics and wave impacts towards a given structure
- Multi-scale modeling of the breakup of the liquid into dispersed droplet flow.
- Challenge: How model the large scale flows on a relatively coarse grid (LES / U-RANS methods), and at the same time predict the characteristics and statistics of the droplet field.
- Numerical reproduction of detailed and time resolved experiments.
- Application of the developed model to situations relevant to marine icing

A detailed research plan will be formulated in collaboration with the candidate in the beginning of the PhD project.

The project is fundamental in nature and the successful candidate should hold a master's degree in applied mathematics, physics, mechanical engineering or similar. Very good proficiency in fluid mechanics and/or numerical methods for partial differential equations is required. Proficiency in the GNU/Linux environment is an advantage. Excellent communication skills in scientific writing and oral presentation are needed. The candidate is expected to make fundamental scientific contributions in applied physics and/or numerical analysis in collaboration with an international group of active researchers in the field.

The PhD position is limited to 3 years. Further information about the position may be obtained from Professor Stein Tore Johansen (Stein.T.Johansen@sintef.no), Research Scientist Dr. Tore Flåtten (Tore.Flatten@sintef.no), and research scientist Dr. Mihaela Popescu (Mihaela.Popescu@sintef.no).

Conditions of appointment:
PhD Candidates are remunerated in code 1017, and are normally remunerated at wage level 50, gross NOK 430 200 before tax. There will be a 2 % deduction to the Norwegian Public Service Pension Fund from gross wage.
Engagement as a PhD Candidate is done in accordance with “Regulation concerning terms and conditions of employment for the posts of post-doctoral research fellow, research fellow, research assistant and resident”, given by the Ministry of Education and Research of 19.07.2010. The goal of the positions is to obtain a PhD degree. Applicants will engage in an organized PhD training program, and appointment requires approval of the applicants plan for a PhD study within three months from the date of commencement.

See http://www.ntnu.edu/ivt/phd for more information.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants. The positions adhere to the Norwegian Government's policy of balanced ethnicity, age and gender. Women are encouraged to apply.
According to the new Freedom of Information Act, information concerning the applicant may be made public even if the applicant has requested not to be included in the list of applicants.

The application must contain information of educational background and work experience. Certified copies of transcripts and reference letters should be enclosed.
Applications with CV, grade transcripts and other enclosures should be submitted.

Anticipated commencement 30.11.2015, or in agreement with the department

Application deadline 31.10.2015.

Tilleggsinformasjon

Arbeidssted: