NTNU

Kunnskap for en bedre verden

Jobbnorge-ID: 102438
Søknadsfrist: Avsluttet
Nettside:
Omfang:
Varighet:

PhD position within Numerical methods for fast and accurate simulation of multimaterial flows

At the Norwegian University of Science and Technology (NTNU), a PhD scholarship on Numerical methods for fast and accurate simulation of multi-material flows 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 **SIMCOFLOW - a framework for complex 3D multiphase and multi physics flows** carried out by SINTEF Materials and Chemistry, Trondheim, from July 2014 until June 2017 and funded by the Research Council of Norway. Within the SIMCOFLOW research project, another PhD position on Extended treatment of multiphase flows in the framework of Cartesian Cut-Cells is announced separately.

The objective of the SIMCOFLOW research project is to develop an open source computer code for the simulation of complex multiphase flows and fluid-structure interactions.

The PhD project Numerical methods for fast and accurate simulation of multi-material flows will involve one or more of the following research tasks:

- Improved numerical discretization of the transport part of diffuse interface models for multi-material flows.
- Improved numerical discretization of stiff source terms due to relaxation terms in the multiphase flow models.
- Development, implementation and evaluation of entropy-stable methods for multiphase flow models.
- Development, implementation and evaluation of numerical methods for multi-material flows at all Mach numbers.

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 mathematics 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 Bernhard Müller (bernhard.muller@ntnu.no), Research Scientist Dr. Tore Flåtten (tore.flatten@sintef.no), Professor Marica Pelanti (marica.pelanti@ensta-paristech.fr), and Senior Scientist Ernst A. Meese (Ernst.A.Meese@sintef.no).

PhD Candidates are remunerated in code 1017, and are normally remunerated at wage level 50, gross NOK 420 800 before tax. The salary is adjusted according to the recent wage negotiations, and given subject to the final approval of the Storting (the Norwegian Parliament). There will be a 2 % deduction for superannuation.

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. 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. Applications with CV, possible publications and other scientific works, certified copies of transcripts and reference letters should be submitted electronically via this website. Mark your application with ref.no. IVT- 87/14.

Anticipated commencement 01.07.2014.

Application deadline 31.05.2014.

Tilleggsinformasjon

Arbeidssted: