PhD position:

Numerical study on ice accretion on fan blades and compressor stages

Within the Engineering Fluid Dynamics group a vacancy exists for a PhD position on a numerical study of ice accretion on fan blades and compressor stages. This research is carried out in the framework of the HAIC (High Altitude Ice Crystals) project funded by the European Commission under Framework 7. HAIC is a large research project, led by EADS-Airbus, whose goal it is to provide the European aeronautical industry acceptable means of compliance (numerical and test capabilities) and appropriate ice particle detection awareness technologies for use on-board of commercial aircraft in order to enhance safety when an aircraft is flying in such adverse weather conditions. As such a strong cooperation with many foreign research institutes and industries is foreseen.

Job description

The objective of this study is to develop a computational tool to predict the ice accretion on fan blades and the first compressor stages of commercial jet engines. From the known (unsteady) flow field the trajectories of ice particles are computed and it is determined where the impact takes place. On impact several physical phenomena have to be taken into account to determine the actual ice accretion on the surface of the fan, rotor and stator of the compressor. Due to the large computational effort needed for these simulations, massively parallel computing platforms will be employed.

Our Offer

The successful applicant will be appointed on a 4 year contract.
The salary for PhD research starts at € 2042 gross per month for the first year and extends to a maximum of € 2492 gross per month in the fourth year (in accordance with the Collective Labour Agreement for Dutch Universities). In addition, the University of Twente offers attractive fringe benefits.

Profile

Candidate must be able to demonstrate competence in Computational Fluid Mechanics under the supervision of Prof. H. Hoeijmakers and Dr. E. van der Weide. A working knowledge of .C++ and MPI is advantageous.

Information

For more information about this vacancy you can contact Prof. H. Hoeijmakers, telephone +31-53-4894838 (e-mail: h.w.m.hoeijmakers@utwente.nl) or Dr. Edwin van der Weide, telephone +31-53-4892593 (e-mail: e.t.a.vanderweide@utwente.nl).

Application

Your application, provided with a CV, list of three persons for reference, a list of publications (if applicable), and a summary of the M.Sc thesis should be sent before December 1, 2012 through the application link http://www.utwente.nl/vacatures/en/ -
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The organization

The University of Twente. We stand for life sciences and technology. High tech and human touch. Education and research that matter. New technology which drives change, innovation and progress in society. The University of Twente is the only campus university in the Netherlands; divided over six faculties we provide more than fifty educational programs. The University of Twente has a strong focus on personal development and talented researchers are given scope for carrying out pioneering research.

The Faculty of Engineering Technology (CTW) is one of the six University of Twente's faculties. CTW combines Mechanical Engineering, Civil Engineering and Industrial Design Engineering. Our faculty has approximately 1800 bachelor's and master's students, 300
employees and 150 PhD candidates. The faculty is organized in a matrix: the departments cooperatively conduct the educational programs and participate in interdisciplinary research projects, programs and the following research institutes: MIRA, CTIT, IBR and IGS.