

JOB OFFER – CDI
CFD Researcher
Specializing in Lattice Boltzmann Method

OFFER INFORMATION

Reference: CFD-2025-BOU-01
Team: AAM

Location: 42 Avenue Gaspard Coriolis – 31057 Toulouse
Contact person: Jean-François BOUSSUGE

Starting date: As soon as possible
Salary: Based on experience
Level of education required: Ph.D

Key words: Development of Numerical Methods and Advanced Simulations using **Lattice-Boltzman Method**

CERFACS

Cerfacs is a private research, development, transfer and training center for modeling, simulation and high-performance computing. Cerfacs designs, develops and proposes innovative software methods and solutions to meet the needs of its partners in the aeronautics, space, climate, environment and energy sectors. Cerfacs trains students, researchers and engineers in simulation and high-performance computing.

Cerfacs works closely with its seven partners: [Airbus](#), [Cnes](#), [EDF](#), [Météo France](#), [Onera](#), [Safran](#) et [TotalEnergies](#).



HOSTING TEAM - AAM

The Advanced Aerodynamic & Multiphysics (AAM) team is dedicated to developing cutting-edge numerical methods, physical modeling, and High-Performance Computing (HPC) techniques for new Computational Fluid Dynamics (CFD) solvers. The work focuses on fluid dynamics simulations for aircraft, rockets, and turbomachinery, in close collaboration with Cerfacs partners.

CONTEXT

We are seeking an experienced researcher to join the AAM team at CERFACS, with a primary focus on the Lattice Boltzmann Method (LBM). Your main role will be to manage and contribute to the development and application of ProLB, an LBM solver jointly developed by Airbus, Safran, Renault, CS, M2P2, LMFA, ONERA, and CERFACS.

MISSION

- Actively contributing to the development and enhancement of the ProLB solver, including the implementation of new physical models and numerical methods.
- Performing LBM simulations to support industrial applications in sectors such as aeronautics, energy, and transport.
- Collaborating with doctoral students, engineers, and interns, providing guidance on the effective use of LBM for various research projects.
- Contributing to the adaptation of the LBM approach for emerging high-performance computing architectures, with a focus on performance optimization and efficient resource management.

DESIRED PROFILE

- PhD in Computational Fluid Dynamics (CFD) or a related field, with a strong focus on LBM methods.
- Significant experience in the development of CFD codes, particularly LBM-based solvers.
- Proficiency in C++ programming and solid experience with modern software development practices.
- In-depth knowledge of numerical methods for fluid flows, particularly in the context of LBM.
- Strong understanding of aerodynamics, especially in the context of aircraft and turbomachinery.
- Excellent communication skills and a strong interest in working in a multidisciplinary research environment.

WHAT WE OFFER AT CERFACS

- Broad access to technology, a rich interpersonal environment, in-house skills recognized nationally and internationally.
- An inclusive and equitable work environment.
- A structure accessible to people with disabilities.
- A complementary health insurance scheme offering excellent health care coverage in addition to social security, with the possibility of enrolling family members (spouse and children).
- 6 weeks' annual leave (with the possibility of 22 extra days' leave per year linked to your choice of a 39-hour rather than 35-hour working week).
- Flexible working arrangements, with the possibility of working from home up to two days a week.
- A sustainable mobility package enabling employers to pay up to a maximum of 500 euros a year to cover the home-to-work travel costs of staff who cycle to work.

HOW TO APPLY ?

To apply, please send your CV and covering letter to boussuge@cerfacs.fr, applications are open until 30/04/2025.

See you soon at CERFACS!