



HPC engineer

CEA - Maison de la Simulation

The French Commissariat à l'Énergie Atomique (CEA) is inviting applications for an HPC engineer position at Maison de la Simulation, Saclay, France, with a focus on C++ parallel programming for high-end HPC applications

This is a 20 months position within the long-running Energy-oriented Center of Excellence (EoCoE-III), an ambitious, Europe-wide project that develops exascale lighthouse applications targeting critical energy sectors.

The successful candidate will join a vibrant and diverse team working on the cutting edge of High-Performance Computing (HPC) technologies.

To apply, please send your application (CV and covering letter) to contact@eocoe.eu

If you have any questions about the position, please use the same address.

Context

The Energy-oriented Centre of Excellence for exascale HPC applications (EoCoE-III) aims to support Europe's transition to decarbonized energy by utilizing advanced computational methods. Building on the success of two previous projects, EoCoE-III focuses on four key energy domains: Energy Materials, Water, Wind, and Fusion. The project brings together 18 partners from six countries, including three top European supercomputing centers. EoCoE-III will develop new modeling capabilities to overcome performance challenges and demonstrate the benefits of HPC for the energy industry, with applications like photovoltaic device design, wind farm modeling, and plasma interactions in fusion reactors.

Position Overview

The candidate will contribute to the fifth work package of the EoCoE-III project, focusing on performance optimization and portability and on testing new programming models and new hardware. He/she will be working closely with the WP5 team in CEA and in close collaboration with Dr. Harald Koestler (FAU Erlangen-Nürnberg).

This role offers the unique opportunity to be part of a large-scale international project aimed at driving the next generation of energy research and innovation through state-of-the-art HPC methodologies. He/she will have access to innovative and high-end HPC hardware, in particular through collaboration with the major vendors and be part of a team with unique expertise on the topics.

Key Responsibilities:

- Contribute to the performances evaluation of the EoCoE-III lighthouse application codes on exascale systems.
- Test small kernels extracted from these applications on prototype hardware.
- Test innovative programming models.
- Collaborate with a team of international experts in the field of performance monitoring and optimization.
- Contribute to research publications and presentations at international conferences.
- Work closely with other teams within the EoCoE-III consortium, including partners across Europe, to achieve project goals.
- Engage in regular reporting and communication with the project leadership.

Opportunities and Benefits

- Join a leading European research institution with a reputation for excellence and innovation.
- Work alongside a dynamic and international team of experts in HPC and energy research.
- Be part of an ambitious and vast international project that addresses critical energy challenges.
- Access to cutting-edge HPC technologies and resources at Maison de la Simulation.
- Professional growth and networking opportunities through collaboration with top-tier researchers and institutions across Europe.
- CEA offers competitive salaries depending on your qualifications and experience.
- Up to 3 remote working days per week.
- 75% reimbursement on public transport and a free transport network throughout the Ile-de-France region.
- An attractive supplementary pension scheme and several company savings plans.
- 5 weeks' paid holiday and 4 weeks' RTT (days off) per year.

Qualifications

You have a Ph.D. in Computer Science, Applied Mathematics, Physics, or a related field with a focus on HPC, parallel programming, or performance optimization.

You already have an experience in C++ programming, particularly in a parallel computing context.

You are familiar with HPC environments and performance profiling tools.

You are able to work independently and collaboratively in a multidisciplinary and multicultural environment.

You have excellent communication skills in English.

Knowledge of French is a plus but is not required.

Application Process

Interested candidates are invited to submit the following documents:

- A detailed CV including a list of publications.
- A cover letter explaining your interest in the position and how your experience aligns with the requirements.

- Contact information for at least two academic references.

Deadline for Application: Applications will be evaluated from 20/01/2025 and until the position is filled. Please send your application materials to contact@eocoe.eu with the subject line " HPC engineer Application - EoCoE-III."