

## Position description

### Chaire de Professeur Junior - Applied Mathematics Ecole des Ponts, CERMICS Campaign 2023

École des Ponts ParisTech is opening a Chaire de Professeur Junior for a position in September 2023. This recruitment is aimed at researchers with a strong potential to lead a research team, as well as the ability to participate in national, European or international projects.

#### Terms of recruitment

The terms of this recruitment are taken in application of the décret n° 2021-1710 of December 17, 2021 relating to the status of the Chaire de Professeur Junior. This position is offered on a 6-year tenure-track junior professorship, leading to a tenure as Full Professor (Research Director, DR2). The selection will be carried out by an international jury with a first selection based on the candidate's file, followed by an audition of the pre-selected candidates.

This chair is provided with a very favorable research environment and includes a teaching assignment within the École des Ponts ParisTech (28 hours of lectures or 42 hours of practical or directed work per year) as well as an ANR funding (starting grant, 200 k€ over 6 years).

#### Conditions of enrolment

- There are no age nor nationality requirements to apply;
- The following may apply: holders of a doctorate or equivalent degree or candidates with equivalent scientific qualifications and research work;
- The position is accessible to people with disabilities.

#### How to apply?

- Send your application as a single pdf file by email to [cpi-2023-cermics@enpc.fr](mailto:cpi-2023-cermics@enpc.fr) no later than April 14, 2023 at 11:59 pm.
- Additional documents (see detailed list in the application file) can be submitted at the following link as a single file named Firstname\_Lastname.pdf:  
<https://cloud.enpc.fr/s/gb9SMtJwy7gXixe>
- Do not hesitate to contact Amaury Hayat ([amaury.hayat@enpc.fr](mailto:amaury.hayat@enpc.fr)) or Tony Lelièvre (Director of CERMICS, [tony.lelievre@enpc.fr](mailto:tony.lelievre@enpc.fr)) to discuss the possible insertion in the scientific environment at CERMICS.

#### Research Profile

The position is intended for a researcher in applied mathematics with a broad expertise in control theory and stabilization of finite and infinite dimensional systems, in particular in the area of hyperbolic and parabolic partial differential equations.

CERMICS has a particular interest in the application to road traffic flows, and the candidate is expected to invest some time in this subject. A willingness to learn about reinforcement learning applied to control and stabilization, as well as practical implementation of the obtained algorithms, is also expected.

The candidate will be committed to developing scientific independence and academic recognition at the highest international level, to allow tenure as a Research Director (DR2) within the first 6 years.

### **Teaching Profile**

As part of her or his teaching assignment at Ecole des Ponts, the junior professor will be involved particularly in the courses on analysis, numerical analysis, partial differential equations, and control of systems, with the objective of participating in the creation and being in charge of a course. The junior professor is expected to engage in the M2 of Mathematics and Applications at Ecole des Ponts.

The junior professor will also be involved in teaching through the supervision of projects at Ecole des Ponts as well as the supervision of master and doctoral students, and postdoctoral researchers.

Teaching in English will be possible. However, it is expected that the candidate will be able to teach in French after a few years.

**Corresponding CNU section:** 26 (applied mathematics)

### **Presentation of Ecole des Ponts**

Ecole des Ponts ParisTech is one of the most prestigious French engineering schools, with an excellent international scientific reputation. It trains high-level students with a solid background in mathematics, computer science and engineering sciences. It is the co-lead of several renowned mathematics masters in Paris such as the M2 in Mathematics and Applications, Mathematics of Modeling (with Sorbonne University and Ecole Polytechnique), the Master Mathematics, Vision, Learning (Master Vision Apprentissage), the Parisian Master in Operations Research, the Master in Finance and Data, and the Probability and Random Models Master. The Ecole des Ponts is placed under the responsibility of the Ministry in charge of sustainable development and therefore actively investigates topics related to the Ministry's missions, including the environmental impact of transportations. These topics are at the heart of many academic and industrial projects at the Ecole des Ponts.

### **Presentation of the CERMICS laboratory**

CERMICS is the applied mathematics research center of Ecole des Ponts ParisTech. It is part of the CNRS Federation and the Labex Bézout with the LAMA (Université Gustave Eiffel) and the LIGM (Ecole des Ponts / Université Gustave Eiffel). CERMICS hosts members of several INRIA project-teams. It is organized in three poles: Modeling, Analysis and Simulation; Probability; Optimization. The laboratory has 20 faculty members (including 15 with habilitation), 7 adjunct faculties and about 50 PhD and post-doctoral students. CERMICS maintains a strong research partnership with both academic and industrial partners, in France and abroad.

**Indicators taken into account during the Chair period (during tenure-track)**

- Quality and quantity of publications (scientific journals and conferences).
- Invitations or participation in recognized international conferences.
- Involvement in teaching (participation in courses, responsibility for modules and courses, follow-up of projects and student internships).
- Academic and industrial partnership activities: participation in national or international projects, collaborations with renowned universities and academic partners, contracts with R&D departments of companies or public actors.
- Animation of research and supervision of young researchers.

Finally, the candidate is expected to be able to defend a Habilitation (Habilitation à Diriger des Recherches) in mathematics and to apply for a grant from the European Research Council and/or the Agence Nationale de la Recherche within 5 years.