

Tenure-track Junior Professor Positions

Profile No. 2: Mathematics at the Interfaces of Mechanics and Applications (MAïA)

Keywords: Mathematics at the interfaces, Transdisciplinarity, Modelling and computation in mechanics, Mechanics, Acoustics.

Tenure as a full University Professor expected at the end of a 3-year contract.

Chair open at the Laboratory of Mechanics and Acoustics (LMA) on the Marseille campus, with a dual affiliation to Sections 26 and 60 of the French National Council of Universities (CNU).



Context and Challenges

The strategic project of Centrale Méditerranée (formed from the Ecole Centrale de Marseille) is built around three pillars : attracting through its educational offering, innovating through science, and growing through collective effort. Research plays a central role, ensuring scientific rigor and territorial anchoring around three priority themes : energy and the environment in the Mediterranean context, bioengineering and health, and digital sciences and cybersecurity.

The MAïA chair – Mathematics at the Interfaces of Mechanics and Applications – fits squarely within the school's transdisciplinary vision, strengthening its theoretical and numerical capabilities in mechanics at the crossroads of applied mathematics and Artificial Intelligence, while drawing on exceptional experimental resources that are rare on an international scale.

The Laboratory of Mechanics and Acoustics (LMA), a joint research unit of the CNRS, Aix-Marseille University, and Centrale Méditerranée, is an internationally recognized center of excellence for its work in solid mechanics and acoustics, combining rigorous theoretical approaches with cutting-edge experiments organized into shared platforms. It offers a unique scientific environment, bringing together advanced mathematical developments, physical modelling, and exceptional experimental resources, in service of applications spanning energy, transportation, health, and the environment.

The chairholder will join the laboratory's structured networks, notably the LAFCUS International Research Project (a French-Canadian collaboration on acoustics and ultrasound) and the ABEL and ELYTMAX International Research Laboratories and will contribute to the international profile of these structures. They will help welcome international students within the Centrale Méditerranée engineering degree and the Erasmus Mundus Joint Master Degree programs WAVES and Complex System Engineering at ECM. Their involvement in CISM's international courses will further enhance the institution's international visibility. They will draw on an active network of collaborations with the laboratory's European and international partners (Norway, United States, Canada, United Kingdom, Argentina, Japan) and will be encouraged to lead or co-lead European projects (MSCA, ERC, Horizon Europe).



Scientific Project

The LMA's research in mechanics focuses on materials (metals, composites, polymers, concrete) and structures, studying their static and dynamic mechanical behavior (homogenization, interfaces, nonlinearities, damage) as well as the propagation of sound waves in these media. In acoustics, the research covers a broad spectrum, from infrasound to ultrasound: propagation in fluids and solids, sound synthesis, active control, underwater acoustics, geoseismics, material characterization, musical acoustics, sound perception, and bioacoustics. These approaches -whether disciplinary or interdisciplinary- are supported by advanced mathematical developments and exceptional experimental resources organized into platforms. The applications address major societal challenges: the environment, transportation, energy, and health.

The need for mechanical and acoustic modelling is growing and strategic. The advent of Artificial Intelligence, for example, now makes it possible to push the boundaries of engineering and innovation. The primary objective will be to develop new modelling solutions based on the LMA's research themes, within a disciplinary or interdisciplinary framework in collaboration with its teams. These approaches require the integration of experimental data, physical modelling, and advanced numerical methods; they could lead to advanced digital twins of materials and structures, or proposals for new materials or methods, all of which are aligned with current societal challenges in the areas of health, decarbonization, and energy sovereignty and independence. With an increasingly strategic role, applied mathematics would help bring together internal exchanges and thereby foster collective progress leading to significant scientific advancements.



Teaching Project

Centrale Méditerranée is committed to an approach that places engineering education at the heart of the transformation challenges facing businesses and organizations in a rapidly changing world. In this spirit, it incorporates environmental and societal considerations into all of its missions, with a systemic vision. Students joining our programs, whatever the track, expect a commitment to action that impacts content, teaching methods, and skills alike. The chairholder will be invited to actively engage in the school's reflections, initiatives, and responses to calls for projects (see the Cap 2030 strategic plan).

The chairholder's teaching will be fully integrated into Centrale Méditerranée's engineering program, contributing to courses in applied mathematics and mechanics broadly defined, with a focus on rigorous theoretical grounding for both high scientific value courses and professionally oriented engineering courses. They will bring a strong theoretical dimension to the international Master's in Complex System Engineering, particularly in advanced numerical methods and Artificial Intelligence applied to modeling. The chairholder will also teach in the Erasmus Mundus WAVES Master's program and in doctoral training, contributing to research-based education across the site. These courses, taught in French and/or English, will ensure a coherent link between the engineering program, master's degrees, and doctoral training.

Application and Evaluation Criteria

Candidates must meet one of the following conditions :

- Hold a doctorate as defined under Article L. 612-7 of the French Education Code ;
- Hold a state doctorate or a third-cycle doctorate ;
- Hold a doctoral engineering degree (“docteur ingénieur”) ;
- Hold a foreign university degree deemed equivalent to the above qualifications ; in this case, a request for equivalence and a translation are required;
- Provide evidence of qualifications or scientific work deemed equivalent to the above degrees ; in this case, candidates must submit a request for equivalence.

Application procedure:

Applications must be submitted online via the French Ministry's GALAXIE platform.

Timeline :

Applications open: September 16, 2026, 4:00 p.m. (Paris time) – Date to be confirm -

Application deadline: October 16, 2026, 4:00 p.m. (Paris time) – Date to be confirm -

The chairholder's start date is set for December 1, 2026.

Evaluation criteria:

- Candidate's excellence, motivation, and pedagogical and scientific supervisory ability.
- Quality and originality of the teaching and research projects.
- Relevance and structuring effect of the project within the laboratory and at the partnership level.
- Consistency of the projects with the institution's policy.
- Adequacy of resources to the proposed project and ability to mobilize additional resources.

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