



SCIENCE & CREATIVITY TO BUILD A SUSTAINABLE WORLD



Postdoctoral Researcher

in groundwater resource forecasting using machine learning and uncertainty analysis

Institution:	IMT Mines Alès (National School of Mines of Alès)
Primary assignment:	Center for Research and Teaching in Environment and Risks (CREER)
Administrative location:	Alès (Gard Department – Occitanie Region)
Contract type:	21-month fixed-term contract – Public-law contract – Full-time
Start date:	October 1, 2026

About our institution, CRÉER

The Institut Mines-Télécom

The Institut Mines-Télécom (IMT), a “grand établissement” under the French Education Code, is a public scientific, cultural, and professional institution (EPSCP) primarily overseen by the ministers responsible for industry and digital affairs. As the leading group of engineering schools in France, it brings together 11 public engineering schools across the country, which train 13,500 engineers and PhDs. IMT employs 4,500 people and has an annual budget of €400 million, 40% of which comes from its own resources. IMT comprises 2 Carnot Institutes, 35 industrial chairs, produces 2,100 A-level publications annually, holds 60 patents, and conducts €110 million in contract research.

IMT Mines Alès

The school’s mission: “Drawing on its affiliation with IMT and its regional roots, IMT Mines Alès provides its students with the best opportunities to achieve professional fulfillment, enabling them to become responsible contributors to the nation’s development while preserving the planet’s resources.” The values that drive us: boldness, commitment, collaboration, and excellence.

Founded over 180 years ago, IMT Mines Alès currently has 1,400 students (including 250 international students) and 380 staff members. It has two campuses in Alès and also has locations in Montpellier and Pau. Its students include general engineers, specialized engineers (through apprenticeship programs), doctoral candidates, and students in master’s or specialized master’s programs. It hosts over 500 trainees in continuing professional education.

The school has three high-level scientific and technological research and teaching centers, which operate in the fields of materials and civil engineering (C2MA), the environment and risk (CREER), and artificial intelligence and industrial and digital engineering (CERIS). These entities bring together approximately 85 permanent faculty members (half of whom hold HDR status), 40 research support staff, and 100 doctoral and postdoctoral students, who produce over 130 top-tier publications and secure €3 million in research contracts annually, including a third- e of direct contracts with companies. These research staff contribute to 6 research units, including 4 UMRs. IMT Mines Alès is accredited to award doctoral degrees through 4 doctoral schools.



It has 12 technology platforms and 1,600 partner companies. Creativity is a defining characteristic that permeates all its activities. The school was the first to establish an incubator in 1984 (200 companies created to date, 1,000 jobs). The school offers rich and varied career paths: faculty members have opportunities for professional mobility across the various IMT schools and may also, if they wish, take on responsibilities within the school's functional departments (academic affairs, research, international relations, economic development, etc.) for part of their time.

IMT Mines Alès is a Sustainable Development & Social Responsibility (DD&RS) certified institution. Within the school, every individual is a key player in our approach. We are committed to promoting environmentally friendly practices, fostering diversity and inclusion, and ensuring ethical conduct in our activities. We encourage all our staff to adopt a responsible approach in their daily actions and to propose innovative ideas that strengthen our positive impact on society and the environment.

The Center for Research and Teaching in Environment and Risk (CREER)

Within the school, IMT Mines Alès, the Center for Research and Education in Environment and Risk (CREER) conducts research in the fields of industrial environment and risk. Its research staff participate in:

- The HydroSciences Montpellier-HSM Joint Research Unit (University of Montpellier, IMT Mines Alès, CNRS, IRD),
- Or the "Study of Risks and Air Quality" (EUREQUA) Lab

The staff at HSM work on integrated water management using a wide range of skills that draw on research expertise in biology, chemistry, sensor measurement and development, industrial ecology, geology, geostatistics, statistics, and hydro(geo)logical and statistical modeling (Machine Learning).

The diversity of these disciplines enables the team to tackle major water-related challenges that require varied skills (monitoring, sensor network deployment, modeling, management, etc.), allowing the school's staff to participate in multidisciplinary projects and engage with various networks and communities, thereby expanding its influence. HSM's research team comprises 1 faculty member (including 4 with HDR status), 3 technicians and engineers, 5 postdocs, and 9 doctoral students. This size enables a vibrant scientific dynamic and a significant regional, national, and international impact, particularly through joint doctoral supervision agreements. The research conducted by CREER faculty members takes place within five of the six teams at the HSM UMR. This UMR is deeply involved in projects and observatories, some of which are based in countries of the Global South (Tunisia and Côte d'Ivoire, for example), as well as in the observation networks of IR OZCAR (the MEDYCYSS observatory, affiliated with OSU OREME and SNO KARST) and the workshop zones (ZABR). The successful candidate will contribute in particular to research activities conducted within the HYTAKE teams: *Hydrology and Transfers in Karstic and Heterogeneous Aquifers* and HEC: *Hydrology, Ecohydrology, Climate*; as well as to the cross-cutting theme "Characterization and Modeling of the Eco-hydro(geo)logical Functioning of the Critical Zone," which brings these two teams together.

Job Description:

The position is part of the PREV'IA project, an ambitious research initiative focused on understanding and forecasting water resources in the Pliocene-Quaternary aquifer of the Roussillon Plain, as well as calculating and visualizing the uncertainties associated with a statistical model previously developed by IMT Mines Alès for the source of the Lez River, as part of Ms. Line Kong A Siou's thesis (<https://theses.hal.science/tel-00649103>). It follows several projects and theses carried out by the CREER team at HydroSciences Montpellier, focusing on both low-flow and flood conditions at the Lez Spring.

The work requested follows an initial 9-month postdoc that enabled the initial collection of data and statistical and spectral analyses of the meteorological and hydrogeological data available at each of the two sites. Based on the results of these studies, the goal will be to supplement the data and continue developing hydrodynamic statistical models that account for spatial heterogeneities, thereby enabling an understanding of the impact of anthropogenic withdrawals on water levels within the various compartments of the Roussillon aquifer.

In a third phase of the postdoc, the focus will be on developing prediction models that can be used in another study to determine how these variables evolve in response to climate change; for this purpose, we can incorporate the output data from the "Explore 2" project.



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Key terms to consider include: scale changes, uncertainties, non-stationarities, methods for describing distributed and time-varying phenomena, geomatics, karsts, aquifer recharge, low water levels, uncertainties, and climate change. The research activities of the successful candidate will be part of a sustainable development approach aligned with the United Nations Sustainable Development Goals (SDGs), particularly Goal 6 regarding the scarcity of water resources and their sustainable management.

Desired Profile and General Evaluation Criteria

Your supervisor and the existing team will support you in developing your skills, while valuing your experience and talents:

Minimum required education and/or experience:

Beyond your degree, your personality will make the difference. 

- ▶ Ph.D. in a field related to hydrogeology, hydrology, or environmental modeling.

Required skills, knowledge, and experience:

- ▶ Experience in machine learning for modeling complex natural phenomena.
- ▶ Experience in organization and teamwork: organizing meetings, planning actions, contributing to the drafting of administrative documents
- ▶ Proficiency in scientific English

Desired skills, knowledge, and experience:

- ▶ Ability to apply skills in multidisciplinary projects
- ▶ Ability to work in a team, lead training sessions, and contribute to research or collaborative projects

Required technical and soft skills:

- ▶ Dynamism
- ▶ Independence
- ▶ Commitment
- ▶ Teamwork
- ▶ Organizational skills
- ▶ Diligence and methodical approach
- ▶ Initiative
- ▶ Adaptability
- ▶ Intellectual curiosity
- ▶ Creativity and innovation

Application



Administrative requirements for application

The position offered by IMT Mines Alès is a 21-month, full-time, fixed-term contract under public law governed by the management framework of Institut Mines-Télécom, job category P (Postdoctoral Researcher), category II.

Salary: €35,400 gross annually.



Application Procedures

Applications (CV and cover letter) should be sent **exclusively to:**



<https://institutminestelecom.recruitee.com/o/post-doctorante-en-prevision-de-la-ressource-en-eau-souterraine-par-apprentissage-statistique-et-etude-des-incertitudes-cdd-24-mois-imt-mines-ales>

The recruitment team will carefully review your application.



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Recruitment Schedule

A panel of several people will meet with you and ensure you have the best possible conditions to succeed in this interview.

Application deadline: 05/31/2026

Estimated date of the selection committee meeting: 06/30/2026

Desired start date: 10/01/2026



Contact Information

If you need further clarification on any aspect of the application, please feel free to contact the individuals listed below:

Regarding the job description:

Anne JOHANNET, PREV'IA Project Manager

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For administrative matters:

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Onboarding

A smooth onboarding process for a successful start

From the moment you arrive, you'll benefit from an onboarding period to help you get acquainted with your responsibilities and your work environment. You'll be welcomed by your HR contact, who will guide you through all the steps necessary for a smooth transition into your new role.