


IMT Mines Alès
École Mines-Télécom


SCIENCE & CREATIVITY TO INVENT A SUSTAINABLE WORLD

NOUS RECRUTONS

Post-doctoral student
Geothermal projections for the future of the Massif Central regions

Institution	IMT Mines Alès (Ecole Nationale Supérieure des Mines d'Alès)
Main assignment	Centre for Research and Teaching in Environment and Risks (CREER)
Administrative residence	Alès (Gard department - Occitanie region)
Type of contract	12-month fixed-term contract - Public law contract - Full-time
Starting date	**02/03/2026**

Presentation of our institution and the CREER Centre

The Institut Mines-Télécom

The Institut Mines-Télécom (IMT), a major institution within the meaning of the Education Code, is a public scientific, cultural and professional institution (EPSCP) under the principal supervision of the ministers responsible for industry and digital technology. It is the largest group of engineering schools in France, with 11 public engineering schools throughout the country, training 13,500 engineers and PhDs. The ITM employs 4,500 people and has an annual budget of €400 million, 40% of which comes from its own resources. The ITM has 2 Carnot institutes, 35 industrial chairs, produces 2100 A-rank publications annually, 60 patents and carries out €110M of contract research.

IMT Mines Alès

Founded in 1843, IMT Mines Alès currently has 1,400 students (including 250 foreign students) and 380 staff. The school has 3 research and teaching centres of a high scientific and technological level, working in the fields of materials and civil engineering (C2MA), the environment and risks (CREER), artificial intelligence and industrial and digital engineering (CERIS). It has 12 technology platforms and 1,600 partner companies.

Everyone at IMT Mines Alès is a key player in our Sustainable Development and Corporate Social Responsibility (SDRS) approach. We are committed to promoting environmentally friendly practices, fostering diversity and inclusion, and ensuring ethics in our activities. We encourage all our employees to adopt a responsible approach in their daily actions and to propose innovative ideas that strengthen our positive impact on society and the environment.




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CREERT Centre

Within the School, IMT Mines Alès, the Environment and Risk Research and Teaching Centre (CREER) conducts research activities in the fields of the industrial environment and risk. It comprises :

- The "Eau, Ressources et Territoires" team (ERT),
- The 'Etude des RisquEs et de la QUAlité de l'air' (EUREQUA) team.

The ERT research team works on :

- Methodological developments in territorial ecology and territorial Life Cycle Analysis (LCA)
- Methodological developments in environmental diagnostics: characterisation of surface and drinking water contamination
- Methodological developments in artificial intelligence and deep learning for hydro(geo)logy and studies of extreme events
- Methodological developments in virology

More specifically in relation to the proposed position, ERT is interested in integrated water management using a wide range of skills capitalising on research know-how in biology, chemistry, measurement and sensor development, industrial ecology, geology, geostatistics, statistics and hydro(geo)logical and statistical modelling (Machine Learning). The variety of these disciplines makes it possible to meet the major water-related challenges that require a range of skills (monitoring, deployment of sensor networks, modelling, management, etc.), enabling the team to take part in multidisciplinary projects and become involved in several circles and communities, thereby increasing its influence.
The ERT team is made up of 10 lecturer-researchers, including 5 HDRs, 3 technicians and engineers, 3 post-docs and 9 PhD students. It has thus reached a size that allows it to have a rich scientific dynamic and an influence at regional, national and international levels, particularly in the context of joint doctoral contracts. The ERT team is partly housed within the UMR HydroSciences Montpellier (HSM), (University of Montpellier, IRD, CNRS). This UMR is very involved in projects and observatories, some of which are located in southern countries (Tunisia, Côte d'Ivoire, for example), as well as in the observation systems of the IR OZCAR (MEDYCYSS observatory, attached to the OSU OREME and the SNO KARST) and the workshop zones (ZABR).

Presentation of the scientific context

A post-doctorate carried out as part of a structuring project for national subsurface research

This post-doctorate is part of the "ANTICIPATION: the future use of the French subsoil" project of the PEPR Subsoil Common Good[1] . Co-piloted by Mines Paris, IMT Mines Alès and BRGM, this project aims to **analyse the projective capacities of players in the uncertain future of the uses of subsoil resources**.

At the crossroads of the sociology of science and technology, social geography and political sociology, the project is based on the hypothesis that **the players involved in the issue of resource exploitation have different relationships with the future** depending on the knowledge and instruments they use to bring it out, quantify it, and make it possible to relate to or control. These instruments (models, scenarios, standards and regulations, cost/benefit analyses, for example) give different takes on the future because of their epistemology, the assumptions on which they are based, the technologies they envisage or the territories they consider. The project is studying these instruments, their historicity, practices and associated controversies, as well as the way in which they inform or prescribe forms of public action with regard to the subsoil.

[1] The exploratory PEPR "Sous-sol, bien commun" ("Subsoil, a common good"), co-directed by BRGM and CNRS, brings together 35 institutions and laboratories. With an aid budget of 71.4 million euros over 7 years, it aims to develop knowledge of the national subsoil at a time when there is a growing need for a better understanding of its resources and uses, and better management of conflicts of use.




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Research rooted in an experimental area: the Massif Central

This post-doctorate will be anchored **in one of the regional projects** of the PEPR Sous-Sol Bien Commun, namely the **Massif Central.** The French Massif Central, with its geological history dating back more than 600 million years, its mining history and its potential for mineral and energy resources, is a unique area in which to tackle the challenges of future energy, ecological and social transitions. Although mining activity has now virtually ceased everywhere, exploration permits are being granted, which is arousing interest and also raising a number of concerns and mobilisations among local communities and authorities. It is clear that social positions vary on the issue of mining renewal and the future use of deep geothermal energy to meet the country's energy needs. The current state of geological knowledge does not allow for an informed debate on the issues at stake underground. Uncertainties about potential subsoil resources, and about the interest and forms that future exploitation could take, inhibit the formalisation of opinions and the taking of informed decisions. This situation can make it difficult to establish democratic governance of subsoil uses in the future.
The Massif Central project aims to understand the social and geological conditions under which the French Massif Central can contribute to current transitions, and to obtain a shared knowledge of the subsoil at regional and local levels. The notion of "common good" has emerged as a fundamental and priority issue in the intellectual co-construction of this project. It implies an interdisciplinary and transdisciplinary approach, which means that the project is structured around pilot sites identified by the researchers for their geological potential (potential for strategic and critical metals and/or potential for deep geothermal energy), their sociological characteristics (urban versus rural context, old mining site or new deposit) and the interest in producing and crossing different types of knowledge. The working hypothesis of this project is that collective intelligence should contribute to tackling the challenges of transitions.
The main expected outcome of the project is the production and sharing of knowledge co-produced on different pilot sites concerning the geological and social conditions of the Massif Central's contribution to the various current and future transitions. To achieve this, the members of the project wish to build up and federate a hybrid community of knowledge on the Massif Central subsoil, made up of various scientific disciplines and local stakeholders, in order to contribute to an informed debate on questions concerning the subsoil as a common good.

Job description

Scientific contributions to the ANTICIPATION project

This post-doctorate will make a **significant contribution to the objectives of the 'ANTICIPATION' project,** by contributing to a **better understanding of the place of geothermal energy projects in the prospective thinking of territories**. The post-doctoral project that we are proposing opens up a new chapter in 'political geology', which is less concerned with the energy, economic and controversial perspectives hitherto favoured in the study of geothermal energy than with its health dimensions, since it has been shown (1) that these dimensions were decisive in the structuring of movements to combat its local development (Rhine Graben, Switzerland, Massif Central) and (2) that the obstacles currently opposed to the issue of geothermal energy are seen precisely as issues of social representation of risks. However, the question of risk is a factor in arguments that have so far been very little linked to issues of habitability, i.e. both caring for an environment and projecting a sustainable future in a healthy environment. A methodological protocol will be implemented by the post-doctoral student to study the dynamics, risks and potential of geothermal habitability in the Clermont-Ferrand region, based in particular on a series of interviews and focus groups with the institutional players (public and private) and scientists who make it possible to localise geothermal projects. Following on from the work carried out as part of the ANTICIP project, the PEPR Sous-Sol Bien Commun should be considered as a field in which to observe the methods developed by the researchers themselves to work on and implement geothermal energy projects in the Massif Central region. Where appropriate, the post-doctoral researcher will be able to propose ways of collecting data around frontier objects (participatory mapping, research-creation, etc.). Based on a review of the state of the art (scientific literature, grey literature), the definition of this methodological protocol will




lead the post-doctoral student to specify the research question, the geographical and thematic scope of the studies and the panel of people to be approached.

Participation in the scientific life of PEPR Sous-Sol

The post-doctoral student will be invited to take part in the scientific life of the PEPR Sous-Sol (participation in meetings, seminars, scientific days) by promoting the progress of the work carried out as part of his/her contract.

Scientific promotion

The post-doctoral student will be expected to make the most of the work carried out by giving oral presentations at national and/or international conferences and publishing articles in peer-reviewed journals. His/her research work will feed into the final report of the ANTICIPATION project and should be the subject of a dedicated report.

Location of the post-doc: in partnership with Christian Iasio (BRGM Regional Delegation, Clermont Ferrand site), who will be able to contribute his or her geological expertise and knowledge of the field, the post-doc will be able to benefit from a hosting agreement on the BRGM premises in Clermont Ferrand in order to ensure greater proximity to the field of study and facilitate data collection (interviews, participant observation).

Profile sought and general assessment criteria

Skills, knowledge and experience required :

- Fluency in French (spoken and written)
- Field survey skills and experience (semi-directive interviews, transcription, coding, cross-analysis)

Skills, knowledge and experience appreciated:

- Curiosity and ideally knowledge of a number of issues relating to the subsoil (extraction of mineral resources, heritage conservation of the subsoil, geothermal energy, underground architecture, etc.).
- Facilitation of participative processes (multi-stakeholder workshops, focus groups, etc.) and mastery of a number of frontier objects (sensitive mapping, serious games, etc.).

Minimum level of training and/or experience required :

- PhD in social sciences, geography, environmental sciences, political sciences, architecture, etc.
- Interdisciplinary background appreciated

Application

Administrative conditions for application

The position offered by IMT Mines Alès is a 12-month, full-time, public law contract governed by the management framework of the Institut Mines-Télécom, profession P, Post-doctoral fellow, category II.

Salary: to be defined according to profile and experience.




How to apply

Applications (CV and covering letter) should be sent exclusively to :
https://institutminestelecom.recruitee.com/o/post-doctorant-ou-post-doctorante-projections-geothermiques-dans-les-futurs-des-territoires-du-massif-central-cdd-12-mois-imt-mines-ales

Recruitment timetable

Closing date for applications : **19/11/2025**

Approximate date of the jury : **09/12/2025**

Desired starting date : **02/03/2026**

Persons to contact

- **On the content of the post :**
  Juliette CERCEAU, Senior Lecturer
  : juliette.cerceau@mines-ales.fr

- **Administrative aspects:**
  Géraldine BRUNEL, Director of Human Relations
  FOR ADMINISTRATIVE MATTERS:geraldine.brunel@mines-ales.fr