

**OPEN POSITION FOR A RESEARCH ASSISTANT  
(TENURE TRACK)  
GEOMECHANICS - GEOTECHNICS**

**Institution :** MINES ParisTech (École Nationale Supérieure des Mines de Paris)

**Location :** Centre de Géosciences / Geoscience Department  
35, rue Saint Honoré  
77300 Fontainebleau

MINES ParisTech invites applications for a position of junior researcher in geomechanics and geotechnics in Geoscience department. The position will be for an initial period of three years maximum; subject to good performance, it will be extended to a permanent associate professor position.

The position offers opportunities for strong collaborations with other industrial and academic R&D groups at European and international level. The successful candidate will also have the opportunity to co-supervise Master and Ph. D. students.

#### **1. THE GEOSCIENCES DEPARTMENT**

The Geoscience research department of MINES ParisTech focuses on research and teaching activities in the field of applied Earth Sciences. It is located in Fontainebleau, 65 km South of Paris.

Research and training activities cover the various fields in relation to the understanding of mining and management of underground resources (mineral raw material, oil&gas, groundwater, deep underground waste storages, tunnelling and underground space management) in the context of a sustainable development.

The Geoscience department is divided into six research teams which cover most of the applied Earth Sciences fields (geology, geophysics, geostatistics, hydrogeology, hydrochemistry, engineering geology and geomechanics). Research activities are generally multidisciplinary and involve several teams of the department, topics spanning from original and fundamental developments to innovative industrial solutions. The department employs about 40 tenured researchers, 35 technicians and administrative staff, and 40 PhD students.

The department also benefits from experimental facilities dedicated to rock and water characterization (ionic microprobe, SEM, XRD, water chemistry analysis...), to soil and rock mechanical testing, and finally to simulate rock cutting and oil&gas drilling processes.

The Geoscience research department takes also part in the MINES ParisTech graduate school and PhD programs in association with several Paris Universities. Besides, the department offers several professional trainings (6 to 10 months; about 40 trainees per year) in the fields of public administration of mining activities, geostatistics, and technical and economic evaluation of mining projects.

(see <http://www.geosciences.mines-paristech.fr> for more information)

#### **2. DESCRIPTION OF THE POSITION**

### **The Engineering Geology and Geomechanics team**

The position concerns the Engineering Geology and Geomechanics team (GIG), one of the six teams of the Department. With 15 permanent teachers-researchers, this team is the most significant team of the Geoscience department. The research activities of the GIG team can be classified into two major fields : management and exploitation of underground resources and spaces; control of geotechnical hazards and risks. The research programme deals with experimental and theoretical modelling of – thermo-hydro-mechanical coupled phenomena in Geotechnics, - evolution, stability and failure of geomaterials, -interaction processes between structures and geomaterials and mechanical behaviour of interfaces (reinforcement of soils and rocks, mechanical behaviour of a drillstring assembly inside boreholes, deep rock drillability, wear process of drilling tools, ...).

### **The position – Research**

The candidate is expected to conduct research and teaching-training tasks, specifically in the field of structural analysis and its applications in the design of civil engineering underground works, geological storage of hydrocarbons or waste, as well as in mechanical simulation (static and dynamic) of oil&gaz drilling systems. He/she will contribute to the improvement of the structural analysis software which are developed by the team.

The candidate will take part in the preparation of research actions, including development of partnerships with other research institutions, in France and abroad, and looking for co-financings from companies, national agencies or European funds. He/she will actively contribute to the recognition of the team by promoting the research undertaken with the industrial world through participation to scientific events and publications.

### **The position – Teaching**

The candidate will be in charge of courses dealing with his research topics in the frame of the teaching and training activities of the team

### **Specificities of the candidate**

The candidate should have good skills to develop static and dynamic numerical modelling of the mechanical behaviour of structures. He/she has to be able to use numerical simulation tools (mainly FEM codes) and to contribute to their development. Finally, he/she will have the necessary skills to develop and monitor a lab or *in situ* experimental program.

Candidates should have completed their PhD. They should have an excellent academic background, but also a strong interest in applied questions. Good knowledge of English is required. An experience abroad will be strongly appreciated.

### **Contacts for additional information about the position**

For additional information about scientific issues :

- Hedi Sellami, [hedi.sellami@mines-paristech.fr](mailto:hedi.sellami@mines-paristech.fr)  
Phone : + 33 (0)1 64 69 47 10

For additional information on administrative issues :

- Isabelle Olzenski, [isabelle.olzenski@mines-paristech.fr](mailto:isabelle.olzenski@mines-paristech.fr)  
Phone : + 33 (0)1 64 69 49 56

## 2. To apply

**Applications must be submitted by December 31<sup>th</sup>, 2013.**

All applications must include:

- a detailed curriculum vitae;
- a list of publications and recent projects;
- a cover letter indicating presenting the **research project** of the candidate;
- if possible, three recommendation letters. In any case at least the names and contact information of three references.

Applications should be sent via E-mail or by post to:

Isabelle Olzenski

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