



**LABEX MMCD**



## Postdoc Position

<b>Title</b>	<b>Experimental study on cracking of heterogeneous porous media</b>
<b>Laboratory</b>	Laboratoire Navier ( <a href="http://navier.enpc.fr">http://navier.enpc.fr</a> )
<b>University</b>	Ecole des Ponts ParisTech, Université Paris-Est
<b>Starting date</b>	November 2017
<b>Funding</b>	<a href="#">Labex MMCD</a> , for 18 months
<b>Supervision</b>	A.M. Tang, M. Bornert, M. Vandamme, Y.J. Cui, J.F. Caron, C. Chateau, J. Yvonnet, J. Guilleminot, A. Pouya, S. Brisard

### Job description

Micro-cracking in geo-materials can be related to both the nature of the material or the external loadings. On one hand, the heterogeneity of material's mechanical properties induces internal stress field that generates cracking. On the other hand, swelling/shrinkage related to wetting/drying of clayey soils can also induce "hydraulic" stresses that generate cracking. Description and prediction of cracking at the microstructural scale of geo-materials (clayey soils or concrete) remain challenging.

The objective of the postdoc is to study the mechanisms of cracking of heterogeneous porous media under mechanical and/or hydraulic loadings by means of experimental approaches. The candidate will work closely with three PhD candidates (whose works focus on numerical approaches) and other staff researchers involving in the transverse project "Multi-scale analysis of micro-cracking of geological and civil engineering materials". Experiments to be performed include: (i) observation of cracks development at the fiber/matrix interface in a fiber-reinforced concrete; (ii) Mechanical loading of a heterogeneous porous media and observation of the induced cracks; (iii) Observation (optical and with X-ray micro-tomography) of desiccation cracking on clayey soils.

### Candidate's profile

- PhD in civil engineering, geotechnical engineering, geosciences or related fields.
- Experience, interest and good skill in laboratory activities.
- Good level in English is mandatory and good level in French is appreciated.

### Application documents

- Letter of motivation
- CV
- Letters of recommendation

**Please submit your application by email before 30<sup>th</sup> of August 2017.**

### Contact:

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