



## EMPLOYMENT OPPORTUNITY

## Experimented researcher in optimisation

CERMICS is a laboratory of École des Ponts ParisTech. The scientific activity of CERMICS covers several domains in scientific computing, deterministic and stochastic modelling, and optimization.

Since its creation in 2000, the focus of the Cermics «Optimization and Systems team » has been on developing numerical methods in stochastic dynamic optimization, with two original contributions:

- the use of variational methods (rather than dynamic programming),
- the discretization of the "measurability constraints" (what factors does the optimal control depend on?).

The models studied are controlled dynamical systems in discrete time, subject to noises, staying thus close to applications and to the numerical implementation. The main concern is not the time discretization, but that of the noise, the state and the measurability constraints. Several PhD theses were defended on the subject, in collaboration with the industrial contact EDF (French Electricity company) and ENSTA ParisTech. This research has given rise to international publications, and a monograph is in preparation.

Recently, the industrial contacts (Thalès, EDF) have solicited the team concerning problems of dynamic optimization under risk constraints, which raises new issues. The "optimization and risk" theme becomes more and more central: formulation of risk constraints (probability, risk measures, utility functions) , dynamic consistency issues and numerical methods.

Ecole des Ponts ParisTech offer a position for an experienced researcher of international level in the team "Optimization and Systems team".

The successful applicant is expected to participate in the scientific animation and development of the team, to supervise PhD theses and to make a commitment in contractual applied activities (energy, transport). The participation in collaborative research with the other teams of the laboratory and other laboratories of Ecole des Ponts ParisTech (for example in transport) is encouraged.

The Ecole des Ponts ParisTech also offers to the successful applicant possibilities of teaching and supervising student projects. The participation in the launching and in the holding of an academic chair (research and teaching grant funded by a private company) is greatly encouraged.

Links:

- CERMICS Laboratory: <http://cermics.enpc.fr/cermics.html>
- «Optimization and Systems » team: <http://cermics.enpc.fr/equipes/optimisation.html>

**Position Start Date: 01 Sep 2010.**

**Address:** Champs sur Marne, France

**Access :** 25 min from Paris downtown (RER A, « Noisy/Champs » station)

Highway A4 – exit 10 « cité Descartes »

### Job profile

Status: french government employee or contract employee (3 years position with one possibility of renewal).

Qualification: French « Habilitation à Diriger des Recherche » or equivalent (roughly equivalent to associate professor or full professor).

The salary will be function of the candidate's qualifications.

Language: English expected, French desirable.

### **Applications**

CV, list of publications and a research statement should be sent to Jean-François Delmas: [delmas@cermics.enpc.fr](mailto:delmas@cermics.enpc.fr)

### **Closing Date: 05 May 2010.**

A committee will give a short-list on Tuesday 11 May 2010. Applicants from the short-list will be interviewed on Thursday 03 June 2010 afternoon.

### **Further inquiries can be addressed to :**

- Serge Piperno, Head of research at Ecole des Ponts ParisTech, [serge.piperno@enpc.fr](mailto:serge.piperno@enpc.fr)
- Jean-François Delmas, Head of Cermics, [delmas@cermics.enpc.fr](mailto:delmas@cermics.enpc.fr)
- Michel De Lara, in charge of the team Optimization and Systems, [delara@cermics.enpc.fr](mailto:delara@cermics.enpc.fr)