

Recruitment of a “Long-term Planning and Optimization” Research Associate

Establishment: **MINES ParisTech (Ecole Nationale Supérieure des Mines de Paris)**

Posting: **CMA - Centre de Mathématiques Appliquées – Centre for Applied Mathematics**

Location: **Sophia-Antipolis, France**

MINES-ParisTech (Ecole Nationale Supérieure des Mines de Paris) is recruiting a Research Associate for its Centre for Applied Mathematics.

The position is a permanent contract.

JOB DESCRIPTION

Research and teaching activities at the Centre for Applied Mathematics concern Optimization, Decision-making Support and Control. They are led in close collaboration with industrial partners in the fields of climate, economics, markets and energy.

The chosen candidate will work as a lecturer-researcher in the following domains:

Research:

The candidate will join the “planning and optimization” research team. The Centre for Applied Mathematics has been working on this project, backed by the French Energy Council, since 2003, and bases its work on the development of a MARKAL/TIMES model (MARKAL for Market Allocation). MARKAL/TIMES is a long-term planning tool that generates normative information based on analyses of scenarios reflecting different policies, measures or incentives concerning all economic sectors. This approach involves the constrained optimization of a system describing energy flows associated with a given geographic zone and is based on modelling optimization problems.

The CMA’s “planning and optimization” research project enjoys national and international recognition, highlighted by the following:

- Selected by the French Strategic Analysis Council (reporting to the Prime Minister) as part of work done by the Energy Commission, to evaluate scenarios for France with the target of quartering CO₂ emissions by 2050.
- Invited to the United Nations conference on climate change (UNFCCC) in Nairobi in November 2006, to present the anticipatory approach proposed by the CMA in partnership with Schneider Electric, in 2007 in Bali, in 2009 in Copenhagen, in 2010 in Cancun.

In addition, through numerous collaborations, the project is associated with:

- Academia: partnership with CIRED (EHESS/ENPC/CNRS laboratory)
- The industrial sphere: partnerships with EDF (three PhDs underway), association with SCHNEIDER Electric, TOTAL, ADEME, EDF and RENAULT, in the scope of the Chair on Modelling and Forecasting for Sustainable Development.
- The institutional world: IFP partnership coming under the TUCK Foundation
- Europe: partner on several European projects – NEEDS, RES2020, OPTIMATE.

Economic stakeholders are increasingly turning towards a prospective approach in a current climate of major environmental constraints and uncertainty regarding resources. This compels us to reinforce and perpetuate our “planning and optimization” activities and developments.

The candidate’s role on this project will be to focus on development and modelling using MARKAL/TIMES.

In addition, the candidate will help lead the project and connect it to industry and academia, in particular within the scope of the CMA’s Prospective Modelling Chair set up with ParisTech.

Teaching:

The candidate will help teach the Master’s course on Optimization of Energy Systems for which CMA is responsible.

He or she will participate in defining its educational programme and give lectures and seminars to students.

He or she will also teach the civil engineering course on the following themes: applied mathematics option and specialized tuition.

Necessary qualifications:

The candidate must have a doctorate (PhD) specializing in Economics/Optimization.

The candidate should be competent in prospective modelling, have significant experience of MARKAL/TIMES and experience in developing specific modules.

Recognition within the international community and the MARKAL-centred ETSAP consortium is indispensable.

Along with capabilities in optimization, experience of IT development and knowledge of energy conversion processes would be appreciated.

To contribute to the centre’s international influence, a research assignment abroad working in a laboratory involved in one of the above-mentioned fields would be a plus.

APPLICATIONS:

Applications should include:

- a detailed curriculum vitae
- a list of works and publications
- a cover letter
- a scientific project
- letters of recommendation by scientific or industrial figures

and should reach us by 23 August 2011

For the attention of Nadia Maïzi, Director of the Centre,
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