

## **PROPOSAL FOR A POST DOCTORAL POSITION AT CNRS GAME (METEO-FRANCE) : CLIMSEC PROJECT**

Applications are invited for a 12 months post-doctoral position starting in January 1<sup>st</sup> 2010, or asap after that date, to work on the following subject: "Impact du changement climatique en France sur la sécheresse et l'eau du sol" (Impact of climate change in France on drought and soil water content) on the responsibility of the "Centre National de Recherches Météorologiques - Groupe d'Etude de l'Atmosphère Météorologique" a research center of the French meteorological service (Météo-France, CNRM-GAME, URA1357, Toulouse, France) and the Climatology Department (Météo-France, Toulouse, France).

The deadline for application is **15th of October 2009**.

### **Context:**

Météo-France has been funded for this project after the call for tender "évolution climatique, risques engendrés et impact sur la société" (climate evolution, risks and impact on society) by Fondation MAIF.

France is particularly concerned by the risk of increase in frequency and intensity of heatwaves and droughts. Former studies were however focused on the evolution of precipitations and the changes expected at the end of 21<sup>st</sup> century.

The objective of this project is to study of the last and future evolution of the soil water content by stressing the evolutions awaited not only at the end of the century but also for next few decades.

The project which has started in March 2008 has already achieved the following results :

- reanalysis over France for the period 1958-2008 using the Safran-Isba-Modcou hydrometeorological suite and evaluation of its quality
- Climatology of soil water content over France
- Definition of new drought indices and characterization of droughts in the current climate

The study of climate change along the century with a first scenario (A2 from Arpege-Climat model) in 3 time slices (2010-2040, 2040-2070, 2070-2100) will be achieved this autumn

The researcher of the 1st year of the project (Jean-Philippe Vidal) will leave his position on december 2009.

### **Work description:**

The objective of the project's second phase is to evaluate and study the uncertainties on the evolution of droughts and soil water content in France with the application of SIM under climate change hypotheses over the period 1960-2099, using :

- various downscaling method (based on automatic classification, multiple regression and analog research, quantile-quantile correction),
- various global simulations (Arpege and IPCC models)
- various socio-economic scenario (A2,A1B,B2)

All the data sets developed from SIM (drought indicators) and various scripts developed under the R software, will be available to the successful applicant.

### **Required qualifications:**

- 1) A Ph.D. in meteorology / hydrologic or climate sciences or an engineer diploma in the same thematics obtained before the date of the application.
- 2) An expertise of computing languages (Fortran, R).
- 3) An experience in statistics
- 4) A good practice in French or English languages.

**Practical information:**

The successful applicant will be based at the Climatology Department of Météo-France (Toulouse, France), in the vicinity of two other major groups involved in the project : CNRM (National Meteorological Research Centre) and CERFACS (European Centre for Supercomputing) with possibility of on site lodging. The opened position will start in January 1<sup>st</sup> 2010 or asap after that date and for a 12 months duration.

Salary depends on qualification and follows CNRS rules : gross salary around 2300 euros/month (possibly more according to the candidate's experience)

For full consideration, an application letter including a detailed statement of research interest, along with a curriculum vitae (including research experience, publications and conferences, computing skill and different language practise) with two recommendations.

The package should be sent by email before the 15<sup>th</sup> of October 2009 to:

jean-michel.soubeyroux@meteo.fr with copy to philippe.dandin@meteo.fr and joel.poitevin@meteo.fr

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