

## **PROPOSAL FOR A POST DOCTORAL POSITION AT METEO-FRANCE (DCLIM) EXTRAFLO PROJECT**

Applications are invited for a 12\* months post-doctoral position starting in April 1<sup>st</sup>, 2010 or asap after that date, to work on the following topic: "Prédétermination des valeurs extrêmes de pluies et de crues (acronym of the project : EXTRAFLO) under the responsibility of the Climatology Department of Météo-France: Toulouse, France.

The deadline for application is **1<sup>th</sup> of December 2009**.

(\*) Possible extension of 6 months

### Context:

Météo-France is funded for EXTRAFLO following the call from ANR "Programme RiskNat 2008. EXTRAFLO is a multidisciplinary project coordinated by the CEMAGREF with a duration of 4 years, which Météo-France is a partner with EdF , HydroSciences Montpellier and GéoSciences Montpellier

Extreme rainfall and flood estimation is often a difficult task, as the various design methods give a large range of possible values. There is a need, from an operational point of view, to know the advantages and limitations of each methods, with their respective domain of application.

The aim of the project EXTRAFLO is to compare the design methods, in order to know which method to use regarding the available data , the hydrological characteristics of the case study, and the target accuracy level.

The main issues of the project are :

- to collect dataset of long series and regional data sets
- to agree on a methodology for comparison and validation
- to apply the various design on the data sets, considering gauged or non gauged sites
- to conclude on the domain of application of the various methods and propose prospective research issues for their improvement, especially in the context of a changing climate
- to propose some operational tools for stakeholder in charge of flood mitigation and design rainfall or flood assessment

Under this project, Météo-France is particularly involved in assessing the contribution of data rescue actions, the comparison of methods for determination of extreme rainfall and their behaviour in non-stationary climate.

### Work description:

The work plan for the selected candidate will include the following steps :

- Evaluation of the inputs from data rescue and digitization to the knowledge of rainfall extremes in different time scales and globally the sensitivity of the quality of input data for rainfall extreme estimations
- Comparison of adjustment method on punctual series as GEV with spatialized method as SHYREG at daily and sub-daily time step and over varied territories in terms of climate and density of rainfall information; contribution of weather types or seasonal approaches for the characterization of rainfall extreme;
- Development and evaluation in the GEV and Pareto laws, applied to extreme rainfall, of trend series parameters with a changing climate
- Participation in the animation project and reflections on the implementation of various laws

Required qualifications:

- 1) A Ph.D. in climatology/ meteorology / hydrologic or environmental sciences, or a valid engineer diploma .
- 2) A good experience in statistical techniques for extreme law
- 3) An expertise computing languages (R language including).
- 4) Influent in both French and English practical information

The successful applicant will be based at the Climatology Department of Météo-France (Toulouse, France),. The position will start on April 1<sup>st</sup>, 2010, or asap after that date and for a 12\* month duration.

(\* ) Possible extension of 6 months

Wages depends on level of expertise and follows CNRS rules: monthly net about 2300 €

In order to be fully considered the application letter must include a detailed statement of research interest, along with the most recent curriculum vitae with two recommendations. The package should be sent via E-mail before the 1<sup>st</sup> of December 2009 to: jean-michel.soubeyroux@meteo.fr; jean-michel.veysseire@meteo.fr; olivier.Mestre@meteo.fr and Philippe.Dandin@meteo.fr

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