

POST-DOCTORAL RESEARCH FELLOWSHIP

Place : National Meteorological Research Center (CNRM) in Toulouse, France (<http://www.cnrm.meteo.fr/>)

Application deadline : 15 March 2007

Starting dates/duration: May - July 2007 / 9 months, possibly prolonged by one 3-month time period.

Context :

This position is linked to the CYPRIM (CYclogenesis and heavy Precipitation Impacting the Mediterranean regions) project (<http://www.cnrm.meteo.fr/cyprim/>). It is 3-years project (2005-2008) funded by the French Research Ministry (ACI-FNS "aléas et changements globaux") gathering scientists in meteorology, hydrology and oceanography, studying from the mesoscale to the climate scales the high impact weather phenomena in the Western Mediterranean area.

CYPRIM is organized into three topics: i) Improvement of the knowledge on intense cyclogenesis and heavy precipitation systems through dynamical and climatic studies; ii) Synoptic and mesoscale predictability issues and observation targeting; iii) Evolution of the frequency of extreme events at the end of the 21th century for an enhanced greenhouse climate (following GIEC-A2 scenario).

The present proposal is part of the third topic.

Work description :

The aim of the work is to participate to the development and application of a downscaling method of climate model outputs in order to address whether frequency or intensity of Mediterranean storms driven flash-floods might be changing. A clustering method for identifying weather regimes propitious to high-impact weather has been already designed for ERA40 re-analyses and will be applied on ARPEGE Climate/OPAMED regional coupled model outputs in order to study the evolution of the frequency of synoptic situations propitious to heavy precipitation within the future climate. Then, a limited subset of the selected representative situations will be simulated with a high-resolution non-hydrostatic model (MESO-NH or AROME models) and the associated hydrological impact assessed through the hydrological TOPMODEL model. The successful candidate will contribute more specifically to the realisation of the high-resolution simulations. She/he will share her/his time between teams having experience in large scale dynamics, in the use of reanalyses to document events and patterns using several tools and techniques (<http://www.cnrm.meteo.fr/fastex/>) and in studying and modelling flash-flood events at high-resolution (<http://www.cnrm.meteo.fr/gmme/TEAMS/MICADO/>).

Required qualification :

A PhD in atmospheric sciences or related fields is required.

Research experience in mesoscale atmospheric modelling is recommended, experience with the MESO-NH model is welcome.

The applicant should be familiar with programming languages (Fortran, Unix,...).

The net monthly salary will be about 1700 euros.

For full consideration, an application letter including a detailed statement of research interest, along with a Curriculum Vitae, a publication list and the names, telephone and email address of 2 referees should be sent by email to :

Veronique.Ducrocq@meteo.fr and to Alain.joly@meteo.fr