

**POST RESEARCH OPPORTUNITY
IN ATMOSPHERIC PHYSICS AND CLIMATE
(Atmospheric Modelling)**

SCIENCES 2007 – Fundação para a Ciência e a Tecnologia (FCT)
Ministry of Sciences, Technology and High Education - Portugal
Centro de Geofísica de Évora (CGE) - Évora University (UE)
Reference:C2007-UE/CGE/CTAE/05

Job summary

The candidate is expected to develop research activities in the domain of mesoscale and/or climate modeling, namely in:

New parameterizations (namely of aerosols, clouds and surface-atmosphere interactions) in mesoscale and climate models; Planetary boundary layer; Pollutants and aerosols dispersion in the atmosphere; Climate and forecast of extreme events, namely high rainfall, heat waves, intense fog and pollution episodes

Job description

1. Job Description

The Centro de Geofísica de Évora, created in 1991 has become one of the most visible and productive research groups in earth and atmospheric sciences in Portugal. The range of research topics, its publications and its international cooperations are outstanding. The Centro de Geofísica de Évora (CGE) received the classification of *Excellent* from the Fundação para a Ciência e Tecnologia (FCT) of the Portuguese Ministry of Science and Higher Education. The City of Évora has formally recognised in 2005 the work of CGE with the award of *the City's Gold Medal*.

The CGE develops activities in scientific research and advanced teaching in the areas of Internal Geophysics/Seismology, Dynamic of Geological Processes, Atmospheric and Climate Physics (with particularly emphasis in aerosols, clouds and mesoscale modeling) and Transfer Phenomena in Geosphere (with particularly emphasis in exergy flows in the atmosphere, on the earth surface and in the crust and energy and mass transfer in porous media).

The CGE is currently involved in a large number of research projects, foremost of them including the development of different observation systems (remote sensing and in situ observations), the development analytical and numerical modelling of transfer phenomena in porous media, particularly in bio-porous media, the development of advanced numerical computing applied to atmospheric studies and solid earth mechanisms, the latter particularly related with seismic risk assessment. Some of these projects are contributing to the reinforcement of the Earth and Atmospheric Observatory in both aspects (internal and external geophysics). The Observatory currently includes three observational platforms: an atmospheric and physics site in Évora and Cabo da Roca, which are included in the AERONET (AEROSOL ROBOTIC NETWORK) monitoring network from NASA, a seismological observatory that is part of National Geophysical network and of trans-frontier networks in Europe and the Western Mediterranean with a strong connection to the Maghreb. Internal geophysics also has a geothermal-climatological observatory situated in Évora. Advanced computer facilities (computational cluster of 12 node dual core with a storage capacity unit of 2Tbytes and several notebooks with WiFi access to

the CGE servers and cluster), numerical atmospheric models (MESO-NH and AROME models are available at the CGE, under the existing cooperation with the Portuguese Meteorological Institute (IM) and the Centre National de Recherche Meteorologiques (CNRM / Meteo France), seismological models, radiative transfer models applied to aerosol and cloud systems and seismological, meteorological and aerosol data sets are also available.

CGE has also been involved in international Programmes, like GMES, GEO Programmes and the Scientific Committee on Antarctic Research (SCAR), in international monitoring networks, such as AERONET (AERosol RObotic NETwork) network, EMSC (European- Mediterranean Seismological Center) network, and the Western Mediterranean Seismological Network ROA/UCM. Recently CGE joined the National Geophysical Network, created by FCT under the framework of the National Scientific Re-equipment Program.

For more information about the CGE: <http://www.cge.uevora.pt>

The post holder will join an Atmospheric Physics and Climate team already existing at CGE. This team develops research activities namely in the fields of: atmospheric aerosol climatology and monitoring, interaction aerosol-clouds, radiative transfer modelling, atmospheric mesoscale modeling, surface-atmosphere interactions, PBL thermal circulations and pollutants transport in the atmosphere.

The new researcher is expected to develop research activities in the domain of mesoscale and/or climate modeling; the candidate is expected to test and develop new explicit schemes and parameterizations (namely of aerosols, aerosol-cloud interactions, clouds and surface-atmosphere interactions) in mesoscale and climate models. Also numerical simulation of planetary boundary layer flows as well as of pollutants and aerosol dispersion in the atmosphere are expected to be developed.

*The new PhD may also develop research activities in **the field of atmospheric quality monitoring and data assimilation**. The climatology and the numerical forecast of extreme events, namely high rainfall, heat waves, intense fog and pollution episodes are also envisaged to be achieved by the senior researcher.*

There are no teaching obligations but she/he can choose to collaborate in post graduation teaching. The post holder will have the opportunity to initiate her/his own projects, but will also coordinate with colleagues and contribute to the design and execution of related studies.

2. Qualifications and Experience

Applicants should hold a PhD and display evidence of managerial skills, independent research and significant scientific accomplishments with 3 years of research experience. Applicants with less than 3 years of research experience can, **exceptionally and when properly justified**, be accepted. The successful candidate will have a strong publication record and propose an innovative research project relevant to the Atmospheric Physics and Climate team that she/he wants to integrate. Candidates are also expected to have competed for external research funding, and to have supervised graduate students. The successful candidate will enjoy working in a team.

3. Contract

An initial contract of 5 years will be offered to the successful candidate. Another contract may be considered, depending on circumstances at the time of review by an external advisory panel.

Gross Salary: approximately 42,500€ per annum. There is also the possibility to consider a complement to the salary, if the profile of the candidate is considered outstanding.

The Centro de Geofísica de Évora is an inclusive, equal opportunity employer

Starting date: 30th November 2008

4. Application

To apply, please send a CV (including names and addresses of 3 people we can contact who might recommend you for the job), a motivation letter, a research proposal and covering letter, by email, to: asilva@uevora.pt. Deadline for sending the applications: **31st March 2008**

5. Results

It is expected to announce the result by the end of **May 2008**