The Barcelona Supercomputing Center - Centro Nacional de Supercomputación (BSC-CNS) is the leading supercomputing center in Spain. It houses MareNostrum, one of the most powerful supercomputers in Europe, and is a hosting member of the PRACE European distributed supercomputing infrastructure. The mission of BSC is to research, develop and manage information technologies in order to facilitate scientific progress. BSC combines HPC service provision and R&D into both computer and computational science (life, earth and engineering sciences) under one roof, and currently has over 500 staff from 44 countries.

Look at the BSC experience:

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BSC-CNS Corporate Video

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Context and Mission
The Atmospheric Composition group within the Earth Sciences Department aims at better understanding and predicting the spatiotemporal variations of atmospheric pollutants along with their effects upon air quality, weather and climate. The AC group led by Carlos Pérez García-Pando develops the Multiscale Online Non-hydrostatic AtmospheRe CHemistry model (MONARCH) which MONARCH contains advanced chemistry and aerosol packages, and is coupled online with the Non-hydrostatic Multiscale Model (NMMB), which allows for running either global or high-resolution (convection-allowing) regional simulations, and is coupled with an aerosol data assimilation system. The group contributes to a variety of forecasting activities. The dust component of MONARCH runs operationally at the first WMO Regional Specialized Meteorological Center for Atmospheric Sand and Dust Forecast (i.e., the Barcelona Dust Forecast Center, BDFC), and contributes to multi-model ensemble forecasts both at the WMO Sand and Dust Storm Warning Advisory and Assessment System Regional Center (WMO SDS-WAS RC) for Northern Africa, the Middle East and Europe, and the International Cooperative for Aerosol Prediction (ICAP). Both WMO Regional Centers are co-hosted by BSC and the Spanish Meteorological Agency (AEMET). The group also develops and maintains the CALIOPE air quality system (“CALIdad del aire Operacional Para España”), which provides high-resolution air quality forecasts over Europe and Spain. The models and forecasts are enhanced by an intensive use of up-to-date observations, both for model evaluation and to feed the aerosol ensemble-based data assimilation system. Since October 2016, the group hosts an AXA Chair on Sand and Dust Storms. This 15-year research programme is not only intended to support the two WMO SDS Regional Centers based at BSC, but also to widen the scope and relevance of the mineral dust research at BSC-ES.

Within this context, we are looking for a dust modeller who supports development aspects of the MONARCH model, while contributing to the development dust impact research in the fields of health, solar energy production, transportation and agriculture.

Key Duties

- Contribute to the dust model developments and evaluation activities.
- Contribute to the activities of the WMO SDS Regional Centers at BSC.
- Perform innovative user-oriented research, understanding user needs and facilitating technology transfer.
- Actively participate in the management of work packages in EU projects (participate in teleconferences workshops, meetings and writing deliverables).
- Disseminate the results in peer-reviewed scientific papers and international conferences.
- Interact with scientists in the group and the department to favor synergies.
- Apply for competitive grants and projects.

Successful candidates will benefit from expert training and BSC-CNS staff benefits: international multidisciplinary scientific environment and advanced applied research training. We encourage applications from highly motivated candidates with demonstrated experience in climate science and interest in applied research projects within the context of climate services.

Requirements

- **Education**
  - Having a PhD Degree in atmospheric sciences, physics, engineering or related discipline.
- **Essential Knowledge and Professional Experience**
  - Previous experience in air quality, aerosol physics and chemistry a scientific area related to the research position will be required.
  - Computing skills in high level computer languages (especially FORTRAN 77/90 and C) and experience with UNIX/LINUX environments and scripting languages.
  - Previous experience in model development and application in parallel computing environments will be required.
Additional Knowledge and Professional Experience

- Demonstrable experience in participating in international projects.
- Applicant should have a track record of relevant publications in peer reviewed journals.
- Capacity to interact and build strong relations with a diverse members/stakeholder/staff base.
- Willing to travel.

Competences

- Fluency in spoken and written English, while fluency in other European languages will be also valued
- Excellent written and verbal communication skills.
- Ability to take initiative, prioritize and work under set deadlines and pressure.
- Ability to work independently and in a team.

Conditions

- The position will be located at BSC within the Earth Sciences Department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Salary: we offer a competitive salary commensurate with the qualifications and experience of the candidate and according to the cost of living in Barcelona
- Duration of the contract: 2 years.
- Starting date: July 2018

Applications Procedure

All applications must include:

- A motivation letter with a statement of interest, including two contacts for further references
- A full CV including contact details

Deadline

The vacancy will remain open until suitable candidate has been hired. Applications will be regularly reviewed and potential candidates will be contacted.

Diversity and Equal Opportunity Employment

BSC-CNS is an equal opportunity employer committed to diversity and inclusion. We are pleased to consider all qualified applicants for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability or any other basis protected by applicable state or local law.

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