

## **JOB DESCRIPTION**

**Ref:**

**Job Title:** Postdoctoral researcher in atmospheric dynamics

### **About BSC**

BSC-CNS (Barcelona Supercomputing Center – Centro Nacional de Supercomputación) is the National Supercomputing Facility in Spain and manages MareNostrum, one of the most powerful supercomputers in Europe. The mission of BSC-CNS is to investigate, develop and manage information technology in order to facilitate scientific progress. With this aim, special dedication has been taken to areas such as Computer Sciences, Life Sciences, Earth Sciences and Computational Applications in Science and Engineering.

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### **Context and Mission of the role**

Within the Earth Sciences department at the Barcelona Supercomputing Center (BSC-ES), directed by Francisco J. Doblas-Reyes, the Climate Prediction group (CPG), led by Virginie Guemas, develops forecasting capabilities for time-scales ranging from a few weeks to a few decades into the future, and from regional to global scales. This objective relies on expanding our understanding of the processes responsible for the predictable part of climate variability through a comprehensive analysis of the strengths and weaknesses of state-of-the-art climate models, in comparison with the most up-to-date observational datasets, and on exploiting this knowledge to refine the representation of these processes in our climate forecast systems and ensure their correct initialization.

The position is framed within the national project DANAE – *Dynamics and predictability of the ENSO teleconnection in the North Atlantic-European (NAE) region* (MINECO-funded CGL2015-68342-R). The research will focus on the dynamical mechanisms involved in the stratospheric pathway of the ENSO-NAE teleconnection. Specifically, the aim of the work is to explore the seasonality of ENSO-related changes in the shallow and deep branches of the Brewer-Dobson circulation, as well as the troposphere-stratosphere coupling that occurs via interference with the climatological stationary waves. The predictability of the upwelling across the tropical tropopause induced by ENSO will also be assessed. The successful applicant will collaborate with researchers at the *Universitat de Barcelona* (UB; Ileana Bladé), *Universidad Complutense de Madrid* (UCM; Marta Ábalos), and *Max-Planck-Institut für Meteorologie* (MPI; Daniela Matei, Elisa Manzini). Further information can be requested to the PI of DANAE, Javier García-Serrano ([javier.garcia@bsc.es](mailto:javier.garcia@bsc.es)).

### **Responsibilities**

- Analysis of observational data (atmospheric reanalysis) and coupled model simulations [EC-EARTH, MPI]
- Assessment of forecast quality in seasonal hindcasts [EUROSIP, NMME, EC-EARTH, MPI]

### **Requirements**

- **Education**
  - PhD in Meteorology, Oceanography or Environmental Sciences
- **Knowledge and professional experience**
  - Experience in statistical analysis
  - Experience in scientific software and tools (e.g. CDO, NCO, R, GrADS, ...)
  - Experience in programming and shell scripting

- Knowledge of version control systems (e.g. git, svn, ...)

### **Competences**

In order to be successful the candidate should have:

- Communication skills in English (fluency in spoken and written)
- Ability to work independently and to interact within a team
- Ability to efficiently communicate results and share tools
- Highly-collaborative spirit

### **Conditions**

The applicant will work at BSC-ES. The position will start in autumn-winter of 2017, no later than January 1st of 2018. The contract will be initially for 12 months, extendable for 6 months. The salary will be commensurate with experience.

### **Applications Procedure**

All applications must be done through the BSC website:

<http://www.bsc.es/about-bsc/employment/vacancies>

Including:

1. Motivation letter and a statement of interest
2. A full CV including contact details

### **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.