#### **Job Title**

Co-leader of the Climate Prediction Group

#### **About the host institute - BSC**

BSC-CNS (Barcelona Supercomputing Center – Centro Nacional de Supercomputación) combines unique high performance computing facilities and in-house research departments on computer, life, and Earth sciences, and computational applications, counting more than 400 researchers and students from more than 40 different countries. BSC-CNS has been accredited as one of the first eight Severo Ochoa Centers of Excellence. This award is given by the Spanish Government as recognition for leading research centers in Spain that are internationally well known institutions in their respective areas. BSC-CNS 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. To get an idea of what it is like to work at the BSC take a look at this video: <https://www.youtube.com/watch?v=VRkEii7OzRE>

#### **Context**

Within the Earth Sciences Department of Barcelona Supercomputing Center (BSC-ES), led by Prof Francisco Doblas-Reyes, the climate prediction group, led by Dr Virginie Guemas and Dr. Pablo Ortega, aims at developing climate prediction capability for time scales ranging from a few weeks to a few decades into the future, from regional to global scales. This objective relies on expanding our understanding of the climate processes responsible for the predictable part of the climate variability through a deep analysis of the strengths and weaknesses of state-of-the-art climate forecast systems in comparison with the most up-to-date observational datasets, and on exploiting these detailed analyses to refine the representation of these climate processes in our climate forecast systems and their correct initialization.

Positioned at the cutting-edge of climate prediction research, the climate prediction group is composed of nearly 20 scientists, most of which are early-career scientists, and combines a large variety of expertise on climate processes from the stratosphere down to the deep ocean and from tropical to polar latitudes, together with expertise in climate modeling and data assimilation. The group can rely on a team of more than 15 engineers and technicians to support the computer infrastructure in place, improve the computational performance of the climate model and develop new tools required by the scientific team. It also collaborates closely with the services group within the department providing top-notch climate information to large variety of stakeholders within the energy and insurance sector. Finally, the group is part of the development team and a key user of the EC-Earth European global climate model ([http://www.ec-earth.org](http://www.ec-earth.org/)) and as such collaborates closely with all the members from the EC-Earth consortium.

#### **Key duties and opportunities**

This position requires an ambitious researcher with interest in coordinating and supervising the group scientific activities, representing the group on international panels (e.g. CLIVAR) and international scientific meetings, nourishing the group with innovative lines. Furthermore, the candidate will be expected to obtain, with the support of the group, competitive funding (e.g. H2020, C3S, MINECO) and computing time (e.g. PRACE) at both the national and the international level to sustain the research activities of the group. These duties will be shared with the current group leaders, Dr Guemas and Dr. Ortega. The position requires to be available for a certain amount of traveling during the year, mostly at the European level.

#### **Requirements**

Applicants must have obtained a PhD in physical oceanography, atmospheric physics, fluid dynamics, applied mathematics or in a related discipline preferably less than 10 years before the application date, but should have at least four years of postdoctoral experience. Ideal candidates must have several of the following attributes:

\* Proven ability to prepare and submit research proposals for funding or computing resources,

\* Experience as (co-) Principal Investigator or Work Package leader of national or international projects,

\* Experience in mentoring / advising post-doctoral researchers and/or PhD students,

\* Knowledge in climate, oceanography or atmospheric sciences,

\* Experience in ocean/atmosphere modeling or environmental modeling,

\* Proven ability for independent and innovative thinking,

\* Fluency in spoken and written English, while fluency in other European languages will be also valued.

The following aspects will also be considered:

\* Knowledge of version control systems (git, svn, cvs…),

\* Experience in handling large databases, and a minimum knowledge of NetCDF encoding,

\* Good knowledge of R, cdo, nco and Python, fortran

\* Experience in the use of HPC and parallel computing (multi-threaded applications), preferably with climate models.

This position implies co-leading a dynamic, multi-national research group that develops cutting-edge research, performs highly-demanding climate prediction experiments and participates in a number of international initiatives.

#### **Conditions**

The applicant will work at the BSC (Barcelona, Spain) within the Earth Sciences Department. The position will start as soon as possible. The contract will be for three years initially, with the possibility of renewal depending on performance. The salary will be commensurate with experience. The department and BSC will in addition support the applicant for applying yo highly prestigious national (Ramon y Cajal, ICREA) and international (e.g. ERC) personal grant and permanent position since the main intention is to stabilise this position for the long term.

#### **Application procedure**

All applications must be uploaded before September 17th to <http://www.bsc.es/about-bsc/employment/vacancies/cpgleader> including:

1. A motivation letter.

2. A full CV including contact details.

3. Two reference contacts.