

## [351\\_24\\_ES\\_HPCES\\_RE3](#)

### Job Reference

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### Position

Senior HPC for Earth Sciences Team Leader (RE3)

### Data de tancament

Dimarts, 16 Juliol, 2024

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**Job title:** Senior HPC for Earth Sciences Team Leader (RE3)

### About BSC

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, was a founding and hosting member of the former European HPC infrastructure PRACE (Partnership for Advanced Computing in Europe), and is now hosting entity for EuroHPC JU, the Joint Undertaking that leads large-scale investments and HPC provision in Europe. 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 900 staff from 55 countries.

Look at the BSC experience:

[BSC-CNS YouTube Channel](#)

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We are particularly interested for this role in the strengths and lived experiences of women and underrepresented groups to help us avoid perpetuating biases and oversights in science and IT research. In instances of equal merit, the incorporation of the under-represented sex will be favoured.

### Context And Mission

The mission of the Earth Sciences Department of the Barcelona Supercomputing Centre, led by Prof. Francisco Doblas-Reyes, is to carry out research and develop methods for environmental forecasting, with a particular focus on the atmosphere-ocean-biosphere system. This includes the management and transfer of technology to support key societal challenges through the use of models and data applications in High Performance Computing (HPC) and AI infrastructures. It also includes the dissemination of real-time air

quality and climate information based on its research expertise in collaboration with the Spanish authorities and the World Meteorological Organisation (WMO).

The successful candidate will join the Computational Earth Sciences group to co-lead the activities of the HPC for Earth Sciences team, which is responsible for the good scalability and efficient hardware resource usage of Earth models and applications by identifying computational bottlenecks and optimizing them using cutting-edge performance tools and HPC techniques, including from more efficient numerical algorithms to architecture-aware approaches.

The HPC for Earth Sciences team plays a crucial role in the research to operations cycle, including initiatives such as Destination Earth and the European Digital Twin of the Ocean. It has strong links with the other teams in the Computational Earth Sciences group and with the research groups in the department.

## **Key Duties**

- Contribute to the coordination and supervision of a team of 15 research engineers and scientists.
- Lead the planning, execution and completion of ongoing and new engineering and research projects within the team, assigning tasks and prioritising them.
- Identify and pursue opportunities for the sustainability of the team and the department's models and tools.
- Contribute to the development strategy of the department's tools, thereby increasing the applicability and international visibility - and hence impact - of the research arising from current and future projects.
- Contribute to the research activities of the team by identifying potential new lines of research and assisting in the publication and dissemination of the team's research activities.
- The selected candidate will lead the HPC for Earth Sciences team, manage tasks and deliverables, and supervise team members. The candidate will report to the Head of the Computational Earth Sciences Group.

## **Requirements**

- Education
  - Possess a bachelor's or master's degree in computer science, physical engineering, mathematics, physics, or a closely related field. A PhD in a related field is not essential but will be appreciated.
- Essential Knowledge and Professional Experience
  - Experience in Earth science research or applied work, with a focus on HPC performance analysis and development.
  - Experience in leading or managing a team, including assigning tasks, setting goals, providing feedback and facilitating collaboration.
  - Excellent communication and interpersonal skills to work effectively within interdisciplinary teams and with external stakeholders.
- Additional Knowledge and Professional Experience

- Proven ability to manage large and collaborative projects, including supervision of PhD or Masters students.
  - Proficiency in high-level programming languages such as FORTRAN and C/C++, with experience in UNIX/Linux environments and scripting languages such as bash and Python.
  - Proven experience in scientific research, particularly in areas related to climate or ocean modelling.
  - Familiarity with large HPC systems, including parallel programming paradigms such as MPI, OpenMP, etc.
  - Familiarity in compiling and deploying large codes from source on different HPC systems.
  - Familiarity with profiling tools such as Intel VTune.
- Competences
    - Proven leadership skills, including the ability to inspire and motivate team members, foster a collaborative and inclusive working environment, and resolve conflict effectively.
    - Ability to interact and build strong relationships with colleagues across scientific disciplines, fostering a collaborative research environment.
    - Strong organisational skills, including the ability to prioritise tasks, manage resources efficiently and meet deadlines.
    - Strategic thinking and problem solving skills, with the ability to anticipate challenges and develop innovative solutions.
    - Proficiency in English, both written and oral. Experience in writing technical reports and/or scientific publications will be appreciated.

## Conditions

- The position will be located at BSC within the Earth Sciences Department
- We offer a full-time contract (37.5h/week), a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, restaurant tickets, private health insurance, support to the relocation procedures
- Duration: Open-ended contract due to technical and scientific activities linked to the project and budget duration
- Holidays: 23 paid vacation days plus 24th and 31st of December per our collective agreement
- Salary: we offer a competitive salary commensurate with the qualifications and experience of the candidate and according to the cost of living in Barcelona
- Starting date: ASAP

## **Applications procedure and process**

All applications must be made through BSC website and contain:

- A full CV in English including contact details
- A Cover Letter with a statement of interest in English, including two contacts for further references - Applications without this document will not be considered

In accordance with the OTM-R principles, a gender-balanced recruitment panel is formed for every vacancy at the beginning of the process. After reviewing the content of the applications, the panel will start the interviews, with at least one technical and one administrative interview. A profile questionnaire as well as a technical exercise may be required during the process.

The panel will make a final decision and all candidates who had contacts with them will receive a feedback with details on the acceptance or rejection of their profile.

At BSC we are seeking continuous improvement in our recruitment processes, for any suggestions or feedback/complaints about our Recruitment Processes, please contact recruitment [at] bsc [dot] es.

For more information follow [this link](#)

## **Deadline**

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

## **OTM-R principles for selection processes**

BSC-CNS is committed to the principles of the Code of Conduct for the Recruitment of Researchers of the European Commission and the Open, Transparent and Merit-based Recruitment principles (OTM-R). This is applied for any potential candidate in all our processes, for example by creating gender-balanced recruitment panels and recognizing career breaks etc.

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.

For more information follow [this link](#)

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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