

[447_24_ES_EMW_RE1/RE2](#)

Job Reference

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Position

Research Engineer - Operational air quality forecast (RE1/RE2)

Data de tancament

Dilluns, 16 Setembre, 2024

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Job title: Research Engineer - Operational air quality forecast (RE1/RE2)

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 1000 staff from 60 countries.

Look at the BSC experience:

[BSC-CNS YouTube Channel](#)

[Let's stay connected with BSC Folks!](#)

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.

We promote Equity, Diversity and Inclusion, fostering an environment where each and every one of us is appreciated for who we are, regardless of our differences.

If you consider that you do not meet all the requirements, we encourage you to continue applying for the job offer. We value diversity of experiences and skills, and you could bring unique perspectives to our team.

Context And Mission

The Earth Sciences Department of the Barcelona Supercomputing Centre, led by Prof. Francisco Doblas-Reyes, is one of the most active groups in air quality and atmospheric composition modeling, climate prediction and climate services in Europe.

The group contributes to various forecasting activities. MONARCH is the operational model of the first WMO Regional Specialized Meteorological Center for Atmospheric Sand and Dust Forecast (i.e., the Barcelona Dust Regional Center), and contributes to the International Cooperative for Aerosol Prediction (ICAP) and the Copernicus Air Quality Regional Production Service of the European Commission. 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 using the in-house emission model HERMES.

Within the Computational Earth Sciences (CES) group, the selected candidate will be part of the Models and Workflows team to contribute to various forecasting activities carried out in collaboration with the Atmospheric Composition (AC) and the Earth System Services (ESS) groups and will be responsible for maintaining and improving the current operational air quality forecasting systems.

Key Duties

- Implementation, execution, and monitoring of atmospheric numerical models (MONARCH, WRF-ARW, CMAQ) in a High-Performance Computing environment.
- Interact with computational earth sciences scientists to improve the performance and reliability of the system. This includes communication with HPC user support at BSC.
- Interact with atmospheric composition scientists to understand processes and model configuration.
- Maintenance of the current operational air quality forecasting systems and development of new features as a result of user interaction.

Requirements

- Education
 - Having a Bachelor in Meteorology, Physics, Computer Science, Mathematics, or a related discipline
 - Having a Master’s degree will be valued.
- Essential Knowledge and Professional Experience
 - Knowledge about the development and execution of scientific applications on parallel computers
 - Experience with UNIX/LINUX environments
 - Experience in Python programming and/or scripting languages (bash, ...)
 - Experience in version control in a collaborative environment, including SVN or Git
- Additional Knowledge and Professional Experience

- Previous experience with NWP or climate modeling and/or operations
 - Familiarity with scientific workflows on large High Performance Computing (HPC) systems, including parallel programming techniques and workflow-managers
 - Previous knowledge or experience with continuous integration tools (e.g., Jenkins)
 - Understanding of HPC computer architecture issues
 - Previous experience in scientific software and tools (R, Python Numpy and Scipy, ...)
 - Familiarity with coding and documentation best practices and standards will be valued
- Competences
 - Capacity to interact and build strong relations with both Earth and Computer scientists
 - Ability to take the initiative, prioritize, and work under set deadlines and pressure
 - Excellent problem-solving skills with a proactive approach
 - Ability to work both independently and within a team
 - Capacity to work and communicate in an international and interdisciplinary working environment

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: Temporary (2 - 2.5 years aprox)
- 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: As soon as possible

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, clearly specifying for which area and specific topics the applicant would like to be considered. Also include 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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