Job Reference

579_23_ES_HPCES_R2

Position

Postdoc Researcher in earth system applications (R2)

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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
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.

Context And Mission

Within the Barcelona Supercomputing Center the Earth Sciences Department, led by Prof Francisco Doblas-Reyes, aims to deliver novel, advanced, and well-evaluated high-resolution global climate models capable of simulating and predicting climate estimations with unprecedented reliability. The successful candidate will be part of the Performance Team, a sub-group in the section of Computational Earth Sciences.

This team, composed of 10 members but steadily growing, performs R&D tasks in the field of Earth Science
Model (ESM) performance: its goal is to identify models bottlenecks, research how to remove them and develop efficient code. The team has at its disposal cutting-edge performance tools, able to evaluate and represent different performance metrics. Possible solutions can go from using more efficient numerical algorithms to modifying the way the model exploits the HPC infrastructure.

The candidate will work on researching for earth system applications as IFS or NEMO, working on visualization, data compression and other topics through a research project to be developed during the first months. The research to be done will be conducted using the upcoming EuroHPC Pre Exascale systems.

Key Duties

- Contribute to the work in progress in visualization and data compression
- Introduce a new research line around HPC topics
- Coordinate research activities with other research engineers of the group
- Collaborate with the team in an Agile framework and attend project meetings with members of the department and other institutions for the project interest.

Requirements

- Education
  - Having a Bachelor and master in Computer Science, Telecommunications, Physics or related discipline.
  - Having a PhD will be mandatory

- Essential Knowledge and Professional Experience
  - Good development skills and experience with UNIX/LINUX environments.
  - Excellent computing skills in high-level computer languages (especially FORTRAN or C/C++).
  - Understanding of HPC computer architecture issues including CPU, accelerators, memory, interconnect, parallel I/O, and computational performance
  - Knowledge of development and execution of scientific applications on parallel computers.

- Additional Knowledge and Professional Experience
  - Experience of version control in a collaborative environment, including Git or SVN.
  - Experience in Python programming and/or scripting languages (Bash).
  - Previous experience in a scientific area related to the research position will be appreciated

- Competences
  - Earth system models are sophisticated tools and High Performance Computers are complex systems. The candidate needs to have excellent problem-solving skills and a proactive attitude to address new challenges and perfect the current solutions so they gain reliability and efficiency.
  - This is a specialized position so the successful candidate is expected to have a demonstrated learning capacity and the motivation to maintain a learning progression during the contract.
  - The BSC Earth Sciences department is an international and interdisciplinary environment, so the candidate must be fluent in English and have good written and verbal skills.
  - The candidate will work for an international collaborative project, so it is mandatory to be able to fulfill schedules and coordinate with members from other institutions, as well as disseminate the advances in international workshops.
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: January 2023

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