237_ES_CES_R2

Job Reference

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Position

HPC Performance Earth Science Researcher - R2

Data de tancament

Dilluns, 25 Desembre, 2017

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 of Barcelona Supercomputing Center, led by Prof Francisco Doblas-Reyes, the climate prediction group aims at developing a climate prediction capability for time scales ranging from a few weeks to a few decades into the future (sub-seasonal to decadal climate prediction) and from regional to global scales. In the framework of the H2020 PRIMAVERA project, this will deliver novel, advanced and well-evaluated high-resolution global climate models, capable of simulating and predicting regional climate with unprecedented fidelity.

The successful applicant will join the Computational Earth Sciences group to conduct the HPC Performance activities for the optimization of earth science systems like EC-Earth. Furthermore, the successful applicant will devise and help to implement efficient and novel procedures to ensure the operation of the EC-Earth model components under high resolution configuration with attention to all technical aspects such as throughput, load balancing and coupling, and reproducibility.
Moreover, the successful applicant will contribute to the ongoing strategy for the development of the Earth Sciences Department tools, thereby increasing the applicability and international visibility—and hence the impact—of the research coming out of present and future projects. This work will be carried out interacting closely with the climate prediction group and external collaborators/software vendors.

Requirements

- **Education**
- **Having a PhD**
- **Knowledge and professional experience**
  1. Proven experience as team manager
  2. Excellent computing skills in high-level computer languages (especially FORTRAN and C/C++) and experience with UNIX/LINUX environments and scripting languages (bash, Python, etc)
  3. Excellent programming skills to manage big and collaborative projects and experience with git and SVN
  4. Good knowledge of HPC performance and profiling tools like (Extrae, Dimemas and Paraver)
  5. Previous experience in a scientific area related to the position, in particular climate or ocean modeling
  6. Previous experience in running and optimizing weather science codes on large HPC systems.
  7. Previous experience in supervision of PhD and Master students.
  8. Previous experience in HPC architecture and parallel programming (multi-threaded applications) will be valued
  9. Proven experience in the design and Implementation of strategies to assess reproducibility, coupling and load balancing on earth science models like EC-Earth
  10. Demonstrated skill in the usage and support of Unix- or Linux-based HPC systems including system optimization through application performance optimization, understanding of application scaling properties, workflow management, job scheduling, user resource management and user problem resolution.

Conditions

- A competitive salary will be provided, matched to the cost of living in Barcelona, depending on the value of the candidate

Applications Procedure

All applications must be done through the BSC website:


Including:

1. 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.