82_ES_CE_RE2

Job Reference

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Position

Atmospheric Composition and data Assimilation scientist support engineer

Data de tancament

Dimecres, 03 Abril, 2019
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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, and is a hosting member of the PRACE European distributed supercomputing infrastructure. 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 500 staff from 44 countries.

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Context And Mission

Within the Earth Sciences Department of Barcelona Supercomputing Center, led by Prof Francisco Doblas-Reyes, the Atmospheric Composition (AC) group aims at better understanding and predicting the spatio-temporal variations of atmospheric pollutants along with their effects upon air quality, weather and climate. The group contributes to a variety of forecasting activities. The dust component of the MONARCH model (previously known as NMMB/BSC-CTM) runs operationally at the first WMO Regional Specialized Meteorological Center for Atmospheric Sand and Dust Forecast (i.e., the Barcelona Dust Forecast Center, BDFC), and contributes to multi-model ensemble forecasts both at the WMO Sand and Dust Storm Warning Advisory and Assessment System Regional Center (WMO SDS-WAS RC) for Northern Africa, Middle East and Europe, and the International Cooperative for Aerosol Prediction (ICAP). Both WMO Regional Centers are co-hosted by BSC and the Spanish Meteorological Agency (AEMET). 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. CALIOPE is currently based on the WRF and CMAQ systems, and its transition to use the MONARCH is in progress.

Key Duties

- Provide technical support for both computational and atmospheric composition engineers and researchers to run experiments using shell scripts and workflow tools.
- Make the scripts flexible and robust, as well as efficient from a computational point of view.
- Optimizing the scripts to adapt them for the needs of the group and developing new features in case.
- Additional support will be offered to those partners to include their own solutions into the set of scripts managed from the BSC.
- The codes will be appropriately documented and updated using SVN and GIT tools.
- The successful candidate will also work on the development of highly-scalable methodologies to ensure an efficient ensemble data assimilation.

Requirements

- Education
  - Having a Bachelor in Computer Science, Telecommunications, Physics or related discipline.

- Essential Knowledge and Professional Experience
  - Excellent computing skills in high-level computer languages (especially FORTRAN and C/C++) and experience with UNIX/LINUX environments and scripting languages (bash, Python …).
  - Excellent programming skills to manage big and collaborative projects and experience with git and SVN.
  - Basic knowledge of climate data formats (GRIB, NetCDF) and data dissemination technologies (e.g. ESGF, OPeNDAP).

- Additional Knowledge and Professional Experience
  - Previous experience in a scientific area related to the position, in particular climate or ocean modeling.
  - Previous experience in scientific software and tools (R, CDO, Python Numpy and Scipy, …).
  - Previous experience in HPC architecture and parallel programming (multi-threaded applications) will be valued.
  - Computer programming experience related to solving scientific computing problems involving the handling of very large projects.

- Competences
  - Capacity to interact and build strong relations with both climate and computer scientists.
  - Fluency in English.
  - Excellent written and verbal communication skills.
  - Ability to take initiative, prioritize and work under set deadlines and pressure.
  - Ability to work both independently and within a team.
Conditions

- The position will be located at BSC within the Earth Sciences Department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Temporary - 2 years renewable
- 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: 01/04/2019

Applications Procedure

All applications must include:

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

Deadline

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

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.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación