Inici > 235_ES_CES_RE1

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Job Reference

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Position

Atmospheric Composition scientist support engineer

Data de tancament

Dilluns, 25 Desembre, 2017

BSC-CNS (Barcelona Supercomputing Center – Centro Nacional de Supercomputación) is the National Supercomputing Facility in Spain and was officially constituted in April 2005. BSC-CNS manages MareNostrum, one of the most powerful supercomputers in Europe, located at the Torre Girona chapel. The mission of BSC-CNS is to investigate, develop and manage information technology 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 400 staff from 41 countries. To get an idea of what its like to work at the BSC take a look at this video: https://www.youtube.com/watch?v=VRkEii7OzRE

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 spatiotemporal 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 NMMP/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 NMMP/BSC-CTM is in progress.
**Key Duties**

The applicant will provide technical support for both computational and atmospheric composition engineers and researchers to run experiments using shell scripts and workflow tools. Hence, special emphasis will be placed to 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. The applicant will provide also the support necessary to solve the problems found by other researchers and engineers and do the necessary tests to validate and verify all the features of each model. 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.

**Requirements**

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

- **Knowledge**
  - 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).

- **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

**Applications Procedure**

All applications must be applied in LINK 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.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación