

BSC Training Course: Earth Sciences Simulation Environments

Objectives

This BSC Training Course aims to cover the basics of high-performance computing (HPC) environment oriented towards earth science applications, specifically chemical weather modelling and climate modelling.

More precisely, the course will cover:

- Introduction to earth science fundamentals and modelling;
- Basic usage of an HPC environment: shell, compilers, libraries, file systems, queuing system and parallel computing.
- Configure targeted earth science applications with the NMMB-MONARCH atmosphere chemistry model;
- Execute and monitor numerical experiments using a workflow manager;
- Analyse and visualise model outputs with a wide set of tools.

Requirements

Prerequisites:

At least a University degree in progress in Earth Sciences, Computer Sciences or a related area
Basic knowledge of UNIX.

Knowledge of C, FORTRAN, MPI or openMP is recommended.

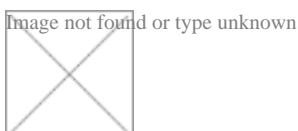
Knowledge of Earth Sciences data formats is recommended (grib, netcdf, hdf,...).

Knowledge of R and Python

Learning Outcomes

Participants will learn and gain experience in accessing an HPC facility, running numerical simulations, monitoring the execution of supercomputing jobs, and analysing and visualising model results.

[Academic Staff](#)



Conveners

Aude Carreric, Recognized Researcher, BSC-ES, Climate Variability and Change Group
Rosa Rodriguez, Recognized Researcher, BSC-ES, Earth System Services Group

Course Lecturers: Earth Sciences Department researchers involved in the group of Computational Earth Sciences, Atmospheric Composition, Climate Prediction and Earth System Services.

Course Lecturers

Oriol Jorba, Leading Researcher, BSC-ES, Atmospheric Composition Group

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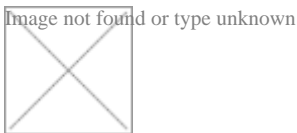
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Materials



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[Further information](#)

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For further details about Postgraduate Studies in UPC - Barcelona School of Informatics (FiB), visit the [website](#).

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Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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