PATC: Earth Sciences Simulation Environments

Objectives

The objective of this PATC course is to cover the basics of a 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;
- Build and configure targeted earth science applications with the NMMB/MONARCH chemical transport model and with the EC-EARTH climate model;
- Execute and monitor numerical experiments using a workflow manager;
- Analyse and visualise model outputs with a wide set of tools.

Learning outcomes: Participants will learn and gain experience in accessing an HPC facility, installing earth science numerical models and related utilities and libraries, running numerical simulations, monitoring the execution of supercomputing jobs, analysing and visualising model results.

Requirements

Prerequisites:
At least University degree in progress on Earth Sciences, Computer Sciences or related area
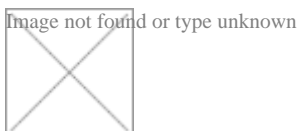
Basic knowledge of UNIX

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

[Academic Staff](#)

Image not found or type unknown

Course Conveners: Louis-Philippe Caron and Andrea Manrique

[Materials](#)

Image not found or type unknown

INTELLECTUAL PROPERTY RIGHTS NOTICE:

• The User may only download, make and retain a copy of the materials for his/her use for non?commercial and research purposes.

• The User may not commercially use the material, unless has been granted prior written consent by the Licensor to
do so; and cannot remove, obscure or modify copyright notices, text acknowledging or other means of identification or disclaimers as they appear.

• For further details, please contact BSC?CNS patc [at] bsc [dot] es

[Further information](#)

Image not found or type unknown

All PATC Courses at BSC do not charge fees.
PLEASE BRING YOUR OWN LAPTOP.

Recommended Accomodation: Please follow [the link](#) for map of some local hotels.

[CONTACT US](#) for further details about MSc, PhD, Post Doc studies, exchanges and collaboration in education and training with BSC.
For further details about Postgraduate Studies in UPC - Barcelona School of Informatics (FiB), visit the [website](#).

Sponsors: BSC and PRACE 4IP project are funding the PATC @ BSC training events.
If you want to learn more about PRACE Project, visit the [website](#).

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

---

Source URL (retrieved on *12 Ago 2024 - 00:27*): https://www.bsc.es/es/education/training/patc-courses/patc-earth-sciences-simulation-environments