Day 1 (Tue, Nov. 27)

10:00-10:15 **Welcome and introduction of the BSC Earth Sciences Department.** (Francisco Doblas-Reyes, Head of BSC-ES Department)

10:15-10:30 **Technical and logistic information.** (María Teresa)

10:30-11:30 **Introduction to earth science fundamentals and modelling.** (Rachel White)

11:30-11:50 *Coffee break*

11:50-13:30 **Introduction to Linux and HPC, BSC facilities, PRACE and RES** (Mario)

13:30-14:30 *Lunch break*

14:30-16:00 **HPC hands-on tutorial.** At the end of this tutorial, the students will be able to compile and execute jobs on Mare Nostrum 4. (Mario and Miguel)

16:00-16:20 *Coffee break*

16:20-18:00 **Introduction to analysis and visualisation tools for model outputs** (s2dverification, MapGenerator, CDO, NCO, panoply, ncview) (Francesco and Nicolau)

Day 2 (Wed, Nov 28)

10:00-11:00 **Lecture on the MONARCH model.** (Oriol and María Teresa)

11:00-12:00 **Lecture on setting up and running the model.** (Francesca)

12:00-12:30 *Coffee break*

12:30-14:00 **Model hands-on tutorial.** Students will run a prepared case. (Francesca and Oriol)

14:00-15:00 *Lunch break*

15:00-17:00 **Analysis hands-on tutorial.** Students will apply tools for analysis and visualisation to the outputs created in the morning. (Francesco and Pierre Antoine)

17:00-17:30 **MareNostrum visit [CONFIRMED by Oriol Riu]**

Day 3 (Thur, Nov 29)

10:00-11:00 **Lecture on the EC-EARTH climate model.** (Xavier)
11:00-12:00 **Lecture on setting up and running the model with Autosubmit.** (Miguel)

12:00-12:30 *Coffee break*

12:30-14:00 **Model hands-on tutorial.** Students will run with a prepared case. (Miguel and Mario)

14:00-15:00 *Lunch break*

15:00-17:00 **Analysis hands-on tutorial.** Students will apply tools for analysis and visualisation to the outputs created in the morning. (Núria and Nicolau)

Barcelona Supercomputing Center - Centro Nacional de Supercomputación