

## TCCM School of Parallel Computing

### Objectives

The objectives of this course are to understand the fundamental concepts supporting message-passing and shared memory programming models. The course covers the two widely used programming models: MPI for the distributed-memory environments, and OpenMP for the shared-memory architectures. It also presents the main tools developed at BSC to get information and analyze the execution of parallel applications, Paraver and Extrae. Moreover it sets the basic foundations related with task decomposition and parallelization inhibitors, using a tool to analyze potential parallelism and dependences, Tareador.

Additionally, it presents the Parallware compiler, which is able to automatically parallelize a large number of program structures, and provide hints to the programmer with respect to how to change the code to improve parallelization. It deals with debugging alternatives, including the use of GDB and Totalview. The use of OpenMP in conjunction with MPI to better exploit the shared-memory capabilities of current compute nodes in clustered architectures is also considered. Paraver will be used along the course as the tool to understand the behavior and performance of parallelized codes.

The course is taught using formal lectures and practical/programming sessions to reinforce the key concepts and set up the compilation/execution environment.



**This school is by invitation only and available to collaborators of the TCCM ITN project.**

**PLEASE BRING YOUR OWN LAPTOP.**

**Comments:**

**Catering:**

1. Buffet Breakfast in the room of the training (VS208) 9:00 am.
2. Buffet Lunch on the FIB Bar patio, weather permitting 1:00 pm.
3. Afternoon coffee break in the room of the training (VS208) 4:00 pm.
4. Dinner Service in FIB Bar.

**Recommended Accommodation:**

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

### Contact Us:

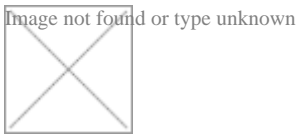
education [at] bsc [dot] es (CONTACT US) for further details about MSc, PhD, Post Doc studies, exchanges and collaboration in education and training with BSC.

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

### Sponsors:

If you want to learn more about TCCM Project, please visit the [website](#).

### [Materials](#)



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