

## [BSC holds the fifth edition of the PUMPS Summer School](#)

The PUMPS is aimed at enriching the skills of researchers, graduate students and teachers with cutting-edge technique and hands-on experience in developing applications for many-core processors.



The fifth edition of the Programming and Tuning Massively Parallel Systems summer school ([PUMPS](#)) is aimed at enriching the skills of researchers, graduate students and teachers with cutting-edge technique and hands-on experience in developing applications for many-core processors with massively parallel computing

resources like GPU accelerators.

*Summer School Co-Directors:* **Mateo Valero** (BSC and UPC) and **Wen-mei Hwu** (University of Illinois at Urbana-Champaign)

*Organized by:*

Barcelona Supercomputing Center ([BSC](#))

University of Illinois at Urbana-Champaign ([University of Illinois](#))

Universitat Politècnica de Catalunya ([UPC](#))

HiPEAC Network of Excellence ([HiPEAC](#))

PUMPS is part of this year [PRACE Advanced Training Centre program](#)

**Date: Monday, 7 July, 2014 - 09:00 to Friday, 11 July, 2014 - 18:00**

Objectives:

- Instructors Wen-mei Hwu (University of Illinois) and David B. Kirk (NVIDIA), co-authors of [“Programming Massively Parallel Processors, A Hands-on Approach”](#), will provide students with knowledge and hands-on experience in developing applications software for many-core processors, such as general purpose graphics processing units (GPUs).
- By the end of the summer school, participants will:
  - Be able to design algorithms that are suitable for accelerators.
  - Understand the most important architectural performance considerations for developing parallel applications.
  - Be exposed to computational thinking skills for accelerating applications in science and engineering.
  - Engage computing accelerators on science and engineering breakthroughs.

Agenda:

- Topics:

The following is a list of some of the topics that will be covered during the course. The updated full program will soon be available

  - CUDA Parallel Execution Model
  - CUDA Performance Considerations
  - CUDA Algorithmic Optimization Strategies
  - Data Locality Issues
  - Dealing with Sparse and Dynamic data
  - Efficiency in Large Data Traversal
  - Reducing Output Interference
  - Debugging and Profiling CUDA Code
  - GMAC Runtime
  - Multi-GPU Execution
  - Introduction to OmpSs
  - OmpSs: Leveraging GPU/CUDA Programming
  - Hands-on Labs: CUDA Optimizations and OmpSs Programming

The programme is available [here](#)

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