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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 Politecnica 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