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Bringing over 100 researchers together in Barcelona, the 7th edition of the Programming and Tuning Massively Parallel Systems summer school (PUMPS) started today.

The summer school 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

The following is a list of some of the topics that will be covered during the course:

- CUDA Algorithmic Optimization Strategies
- Dealing with Sparse and Dynamic data
- Efficiency in Large Data Traversal
- Reducing Output Interference
- Controlling Load Imbalance and Divergence
- Acceleration of Collective Operations
- Dynamic Parallelism and HyperQ
- Debugging and Profiling CUDA Code
- Multi-GPU Execution
- Architecture Trends and Implications
- Introduction to OmpSs and to the Paraver analysis tool

- OmpSs: Leveraging GPU/CUDA Programming
- Hands-on Labs: CUDA Optimizations on Scientific Codes; OmpSs Programming and Tuning

Instructors

Distinguished Lecturers: **Wen-mei Hwu** (University of Illinois at Urbana-Champaign) and David Kirk (NVIDIA Corporation)
Local Organizers: Antonio J. Peña (BSC) and Victor Garcia (BSC and UPC)
Invited Lecturer: Juan Gómez-Luna (Universidad de Córdoba)
BSC / UPC Lecturers: Xavier Martorell and Xavier Teruel
Teaching Assistants: Abdul Dakkak, Carl Pearson, Simon Garcia de Gonzalo, Marc Jorda, Pau Farre, Javier Bueno, Aimar Rodriguez

You cand find the summer school programme here.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación