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High Performance Computing for Computational Science – VECPAR 2010

9th International Conference
Berkeley, CA, USA, June 22-25, 2010
Revised Selected Papers

Springer

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Preface

VECPAR is an international conference series dedicated to the promotion and advancement of all aspects of high performance computing for computational science, as an industrial technique and academic discipline, extending the frontier of both the state of the art and the state of practice. The audience and participants of VECPAR are seen as researchers in academic departments, government laboratories, and industrial organizations. There is now a permanent website for the conference series at http://vecpar.fe.up.pt, where the history of the conference is described.

The 9th edition of VECPAR was organized in Berkeley (USA), June 22–25, 2010. It was the 4th time the conference was celebrated outside Porto after Valencia (Spain) in 2004, Rio de Janeiro (Brazil) in 2006, and Toulouse (France) in 2008.

The whole conference program consisted of 6 invited talks, 45 papers, and 5 posters.

The major themes were:

- Large Scale Simulations in CS&E
- Linear Algebra on GPUs and FPGAs
- Linear Algebra on Emerging Architectures
- Numerical Algorithms
- Solvers on Emerging Architectures
- Load Balancing
- Parallel and Distributed Computing
- Parallel Linear Algebra
- Numerical Algorithms on GPUs

Three workshops were organized before the conference:

iWAPT — Fifth international Workshop on Automatic Performance Tuning
PEEPS — Workshop on Programming Environments for Emerging Parallel Systems
HPC Tools — Tutorial on High Performance Tools for the Development of Scalable and Sustainable Applications

The most significant contributions have been made available in the present book, edited after the conference, and after a second review of all orally presented papers at the conference.

Henricus Bouwmeester, from the University of Colorado Denver received the Best Student Presentation award for his talk on "Towards an Efficient Tile Matrix Inversion of Symmetric Positive Definite Matrices on Multicore Architectures".

VECPAR 2010 took place at the Sutardja Dai Hall of the Center for Information Technology Research in the Interest of Society (CITRIS), University of California, Berkeley, USA. The logistics and organizational details were dealt with by Yeen Mankin, with the kind support of Dany DeCecchis and Jean Piero Suarez (students at San Diego State University).

Paper submission and selection were managed via the conference management system, hosted and operated by the Faculty of Engineering of the University of Porto (FEUP)[1]. Websites were maintained by both FEUP and the Lawrence Berkeley National Laboratory; registrations were managed by the Lawrence Berkeley National Laboratory.

The success of the VECPAR conferences and the long life of the series result from the collaboration of many people. As before, given the widespread organization of the meeting, a large number of collaborators were involved. Here we mention only a few. Through them we thank many others who offered their time and commitment to the success of the conference workshops and tutorial: Takahiro Katagiri, Richard Vuduc, Reiji Suda, Jonathan Carter, John Cavazos, Kengo Nakajima, Lenny Oliker, Nick Wright, Tony Drummond, Sameer Shende, and Jose Roman.

For their contributions to the present book, we must thank all the authors for meeting the deadlines and all members of the Scientific Committee who helped us so much in selecting the papers. We also thank the members of the committees involved in the organization of the workshops held before the conference.

November 2010

José M.L.M. Palma
Michel Daydé
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[1] The VECPAR series of conferences has been organized by the Faculty of Engineering of Porto (FEUP) since 1993.

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