

Preface

The International Meeting on High-Performance Computing for Computational Science (VECPAR) is a biannual conference and is the premier venue for presenting and discussing the latest research and practice in high-end computer modeling and complex systems. The audience and participants of VECPAR are researchers and students in academic departments, government laboratories, and industrial organizations. There is a permanent website for the conference series at <http://vecpar.fe.up.pt>. In this 2016 edition, the conference went back to Porto, where it originated. Previous editions of VECPAR were held in Oregon (USA, 2014), Kobe (Japan, 2012), Berkeley (USA, 2010), Toulouse (France, 2008), Rio de Janeiro (Brazil, 2006), Valencia (Spain, 2004), and Porto (Portugal, 2002, 2000, 1998, 1996 and 1993).

This VECPAR edition had a very exciting program with 20 papers accepted from 10 different countries. The acceptance rate was 51%, repeating the pattern of previous editions. We had a varied selection of paper subjects ranging from distributed to shared and hybrid parallel algorithms and systems, but with a strong focus on computational science applications. Examples are epidemic modeling and word searching. Parallel libraries was also a popular subject this year. Studies of parallel platforms range from clouds to multi-core, many-core, and GPUs. The conference also had the contribution of invited talks given by four prominent speakers (Prof. Omar Ghattas, “Scalable Algorithms for Bayesian Inference of Large-Scale Models from Large-Scale Data”, Prof. Bruno Schulze, “HPC as a Service”, Prof. Mateo Valero, “Runtime Aware Architectures”, and Prof. Luc Giraud, “Numerical Resiliency in Iterative Linear Algebra Calculation”), two workshops: the Workshop on “Big Data and Deep Learning in HPC,” on June 30; and the Workshop on “Computational Challenges for Climate Modelling and Weather Prediction,” on July 1; as well as a crash course on Multithreading and Vectorization on Intel®Xeon™ and Intel®Xeon Phi™ Architectures using OpenMP. In the social program, we had a welcome reception and a fantastic social dinner including Port wine tasting.

A co-organized summer school on “Advanced Scientific Computing” was organized in Braga, during the previous week, in collaboration with the Texas Advanced Computing Center (TACC), at Austin, Texas, USA.

The most significant contributions to VECPAR 2016 are made available in the present book, edited after the conference and after a second review of all accepted papers that were presented.

The paper submission and selection processes were managed via the EasyChair conference management system. The website of the conference is maintained by the Faculty of Engineering of the University of Porto.

The success of the VECPAR conference and its long life are a result of the collaboration of many people. For the 2016 edition, we would like to thank Alexandra Ferreira and Isabel Gonçalves, our very efficient secretaries in the Department of Computer Science of the University of Porto. We would also like to thank all the organizers, reviewers, and authors for their fantastic work and for meeting tight deadlines.

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