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Computational Science – ICCS 2007

7th International Conference
Beijing, China, May 2007
Proceedings, Part III

3 Part III

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Preface

The Seventh International Conference on Computational Science (ICCS 2007) was held in Beijing, China, May 27-30, 2007. This was the continuation of previous conferences in the series: ICCS 2006 in Reading, UK; ICCS 2005 in Atlanta, Georgia, USA; ICCS 2004 in Krakow, Poland; ICCS 2003 held simultaneously at two locations in, Melbourne, Australia and St. Petersburg, Russia; ICCS 2002 in Amsterdam, The Netherlands; and ICCS 2001 in San Francisco, California, USA. Since the first conference in San Francisco, the ICCS series has become a major platform to promote the development of Computational Science. The theme of ICCS 2007 was "Advancing Science and Society through Computation." It aimed to bring together researchers and scientists from mathematics and computer science as basic computing disciplines, researchers from various application areas who are pioneering the advanced application of computational methods to sciences such as physics, chemistry, life sciences, and engineering, arts and humanitarian fields, along with software developers and vendors, to discuss problems and solutions in the area, to identify new issues, and to shape future directions for research, as well as to help industrial users apply various advanced computational techniques.

During the opening of ICCS 2007, Siwei Cheng (Vice-Chairman of the Standing Committee of the National People's Congress of the People's Republic of China and the Dean of the School of Management of the Graduate University of the Chinese Academy of Sciences) presented the welcome speech on behalf of the Local Organizing Committee, after which Hector Ruiz (President and CEO, AMD) made remarks on behalf of international computing industries in China. Seven keynote lectures were delivered by Vassil Alexandrov (Advanced Computing and Emerging Technologies, University of Reading, UK) - Efficient Scalable Algorithms for Large-Scale Computations; Hans Petter Langtangen (Simula Research Laboratory, Lysaker, Norway) - Computational Modelling of Huge Tsunamis from Asteroid Impacts; Jiawei Han (Department of Computer Science, University of Illinois at Urbana-Champaign, USA) - Research Frontiers in Advanced Data Mining Technologies and Applications; Ru-qian Lu (Institute of Mathematics, Chinese Academy of Sciences) - Knowledge Engineering and Knowledge Ware; Alessandro Vespignani (School of Informatics, Indiana University, USA) -Computational Epidemiology and Emergent Disease Forecast; David Keyes (Department of Applied Physics and Applied Mathematics, Columbia University) - Scalable Solver Infrastructure for Computational Science and Engineering; and Yves Robert (Ecole Normale Suprieure de Lyon , France) - Think Before Coding: Static Strategies (and Dynamic Execution) for Clusters and Grids. We would like to express our thanks to all of the invited and keynote speakers for their inspiring talks. In addition to the plenary sessions, the conference included 14 parallel oral sessions and 4 poster sessions. This year, we

received more than 2,400 submissions for all tracks combined, out of which 716 were accepted.

This includes 529 oral papers, 97 short papers, and 89 poster papers, spread over 35 workshops and a main track. For the main track we had 91 papers (80 oral papers and 11 short papers) in the proceedings, out of 360 submissions. We had some 930 people doing reviews for the conference, with 118 for the main track. Almost all papers received three reviews. The accepted papers are from more than 43 different countries and 48 different Internet top-level domains.

The papers cover a large volume of topics in computational science and related areas, from multiscale physics to wireless networks, and from graph theory to tools for program development.

We would like to thank all workshop organizers and the Program Committee for the excellent work in maintaining the conference's standing for high-quality papers. We would like to express our gratitude to staff and graduates of the Chinese Academy of Sciences Research Center on Data Technology and Knowledge Economy and the Institute of Policy and Management for their hard work in support of ICCS 2007. We would like to thank the Local Organizing Committee and Local Arrangements Committee for their persistent and enthusiastic work towards the success of ICCS 2007. We owe special thanks to our sponsors, AMD, Springer; University of Nebraska at Omaha, USA and Graduate University of Chinese Academy of Sciences, for their generous support.

ICCS 2007 was organized by the Chinese Academy of Sciences Research Center on Data Technology and Knowledge Economy, with support from the Section Computational Science at the Universiteit van Amsterdam and Innovative Computing Laboratory at the University of Tennessee, in cooperation with the Society for Industrial and Applied Mathematics (SIAM), the International Association for Mathematics and Computers in Simulation (IMACS), the Chinese Society for Management Modernization (CSMM), and the Chinese Society of Optimization, Overall Planning and Economical Mathematics (CSOOPEM).

May 2007 Yong Shi

Organization

ICCS 2007 was organized by the Chinese Academy of Sciences Research Center on Data Technology and Knowledge Economy, with support from the Section Computational Science at the Universiteit van Amsterdam and Innovative Computing Laboratory at the University of Tennessee, in cooperation with the Society for Industrial and Applied Mathematics (SIAM), the International Association for Mathematics and Computers in Simulation (IMACS), and the Chinese Society for Management Modernization (CSMM).

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