The Art of Computational Science, Bridging Gaps - Forming Alloys

Preface for ICCS 2017

Koumoutsakos, P.; Chatzi, E.; Krzhizhanovskaya, V.V.; Lees, M.; Dongarra, J.; Sloot, Peter M.A.

DOI
10.1016/j.procs.2017.05.281

Publication date
2017

Document Version
Final published version

Published in
Procedia Computer Science

License
CC BY-NC-ND

Citation for published version (APA):
https://doi.org/10.1016/j.procs.2017.05.281

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (https://dare.uva.nl)
International Conference on Computational Science, ICCS 2017, 12-14 June 2017, Zurich, Switzerland

The Art of Computational Science, Bridging Gaps – Forming Alloys.
Preface for ICCS 2017

Petros Koumoutsakos¹, Eleni Chatzi¹, Valeria V. Krzhizhanovskaya²,³, Michael Lees², Jack Dongarra⁴, Peter M.A. Sloot²,³,⁵
¹ETH Zürich, Switzerland
²University of Amsterdam, The Netherlands
³ITMO University, Russia
⁴University of Tennessee, USA
⁵Nanyang Technological University Singapore

Introduction

Welcome to the 17th Annual International Conference on Computational Science (ICCS - http://www.iccs-meeting.org), to be held on June 12-14, 2017 in Zürich, Switzerland. Located in central Europe close to the Alps, Zürich is Switzerland’s largest city and one of the world’s main financial hubs. In addition to the Swiss Federal Institute of Technology (or “Eidgenössische Technische Hochschule Zürich” (ETH) in German), one of the world’s most distinguished research institutions and the proud host of ICCS 2017, Zürich is home to many parks, museums and churches. The city stretches out on both sides of the Limmat river, which flows out of the beautiful Lake Zürich. ICCS 2017 is organized by ETH Zürich, University of Amsterdam, NTU Singapore and the University of Tennessee.

The International Conference on Computational Science is an annual conference that brings together researchers and scientists from mathematics and computer science as basic computing disciplines, researchers from various application areas who are pioneering computational methods in sciences such as physics, chemistry, life sciences, and engineering, as well as in arts and humanitarian fields, to discuss problems and solutions in the area, to identify new issues, and to shape future directions for research.

Since its inception in 2001, ICCS has attracted increasingly higher quality and numbers of attendees and papers, and this year is not an exception, with over 300 expected participants. The proceedings series have become a major intellectual resource for computational science researchers, defining and advancing the state of the art in this field.

© 2017 The Authors. Published by Elsevier B.V.
Peer-review under responsibility of the scientific committee of the International Conference on Computational Science

10.1016/j.procs.2017.05.281
ICCS 2017 in Zürich, Switzerland, will be the seventeenth in this series of highly successful conferences. For the previous sixteen meetings see: http://www.iccs-meeting.org/iccs2017/previous-iccs/

The theme for ICCS 2017 is "The Art of Computational Science. Bridging Gaps – Forming Alloys", to highlight the role of computation as a fundamental method of scientific inquiry and technological discovery tackling problems across scientific domains and creating synergies between disciplines. This conference will be a unique event focusing on recent developments in: scalable scientific algorithms; advanced software tools; computational grids; advanced numerical methods; and novel application areas. These innovative novel models, algorithms and tools drive new science through efficient application in areas such as physical systems, computational and systems biology, environmental systems, finance, and others.

ICCS is well known for its excellent line up of keynote speakers. The keynotes for 2017 are:

- Anastasia Ailamaki, École Polytechnique Fédérale de Lausanne, Switzerland
- Efthimios Kaxiras, Harvard University, USA
- Michael Norman, San Diego Supercomputer Center, UC San Diego, USA
- Tomaso Poggio, Eugene McDermott Professor, MIT, USA
- Olga Sorkine-Hornung, ETH Zürich, Switzerland
- Rick L. Stevens, Argonne National Laboratory, USA
- Stefan Thurner, Medical University of Vienna, Austria

This year we had 625 submissions (267 submissions to the main track and 358 to the workshops). In the main track, 74 full papers were accepted (28%). In the workshops, 151 full papers (42%). A high acceptance rate in the workshops is explained by the nature of these thematic sessions, where many experts in a particular field are personally invited by workshop organisers to participate in their sessions.

ICCS relies strongly on the vital contributions of our workshop organizers to attract high quality papers in many subject areas. We would like to thank all committee members for the main track and workshops for their contribution to ensure a high standard for the accepted papers. We would also like to thank Elsevier and Intellegibilis for their support.

We are proud to note that ICCS is an ERA 2010 A-ranked conference series.

We wish you a successful and enjoyable conference in Zürich.

June 2017

The ICCS 2017 Organizers:
Petros Koumoutsakos
Eleni Chatzi
Michael Lees
Valeria V. Krzhizhanovskaya
Jack Dongarra
Peter M.A. Sloot
Local Organizing Committee in Zürich, Switzerland

Organizing Committee Chairs  Petros Koumoutsakos, Eleni Chatzi
Organizing Committee Members  Susanne Lewis, Maria Gião

Workshops and Organizers

Advances in High-Performance Computational Earth Sciences: Applications and Frameworks
Kengo Nakajima, Xing Cai

Agent-based Simulations, Adaptive Algorithms and Solvers
Maciej Paszynski, Robert Schaefer, Victor Calo, David Pardo

Applications of Matrix Computational Methods in the Analysis of “Modern Data”
Kourosh Modarresi

Architecture, Languages, Compilation and Hardware Support for Emerging ManYcore Systems
Stéphane Louise, Loïc Cudennec, Jeronimo Castrillon, Vania Marangozova-Martin, Martha Johanna Sepulveda Flores

Biomedical and Bioinformatics Challenges for Computer Science
Mario Cannataro, Giuseppe Agapito, Mauro Castelli, Riccardo Dondi, Italo Zoppis

Bridging the HPC Talent Gap with Computational Science Research Methods
Nia Alexandrov, Vassil Alexandrov

Computational Chemistry and Its Applications
Ponnadurai Ramasami

Computational Finance and Business Intelligence
Yong Shi, Shouyang Wang, Yingjie Tian

Computational Optimization, Modelling and Simulation
Xin-She Yang, Slawomir Koziel, Leifur Leifsson

Data-Driven Computational Sciences
Craig Douglas, Abani Patra, Ana Cortés, Robert Lodder

Environmental Computing Applications – State of the Art
Matti Heikkurinen, Dieter Kranzlmüller, Eric Yen

Large Scale Computational Physics
Elise de Doncker, Fukuko Yuasa, Tadashi Ishikawa

Mathematical Methods and Algorithms for Extreme Scale
Vassil Alexandrov, Jack Dongarra
Multiscale Modelling and Simulation  
Derek Groen, Valeria Krzhizhanovskaya, Bosak Bartosz, Alfons Hoekstra, Petros Koumoutsakos

Simulations of Flow and Transport: Modeling, Algorithms and Computation  
Shuyu Sun, Jianguo Liu

Solving Problems with Uncertainties  
Vassil Alexandrov

Teaching Computational Science  
Angela B. Shiflet, Alfredo Tirado-Ramos

Tools for Program Development and Analysis in Computational Science  
Andreas Knüpfer, Arndt Bode, Karl Fürlinger, Dieter Kranzlmüller, Jens Volkert, Roland Wismüller

Urgent Computing  
Alexander Boukhanovsky, Marian Bubak

Reviewers

David Abramson  
Giuseppe Agapito  
Ram Akella  
Elisabete Alberdi  
Marco Aldinucci  
Nia Alexandrov  
Vassil Alexandrov  
H. Ali  
Gabrielle Allen  
Ilkay Altintas  
Stanislaw Ambroszkiewicz  
Anand Amrit  
Michael Antolovich  
Joseph Antony  
Hideo Aochi  
Hamid Arabnia  
Tomasz Arodz  
Tomas Artes  
Ebrahim Bagheri  
Bartosz Balis  
Krzysztof Banas  
Bosak Bartosz  
Daniel Becker  
Jörn Behrens  
Adrian Bekasiewicz  
Gebrail Bekdas  
Adam Belloum  
Stefano Beretta  
Daniel Berrar  
John Betts  
Sanjukta Bhowmick  
Anna Bilyatdinova  
Guillaume Blin  
Alex Bokov  
Tore Brinck  
Marian Bubak  
Kris Bubendorfer  
Marcin Budka  
Jérémy Buisson  
Aleksander Byrski  
Xing Cai  
Mario Cannataro  
Junwei Cao  
Mauro Castelli  
Jeronimo Castrillon  
David Cavander  
Eduardo Cesar  
Imen Chakroun  
Eleni Chatzi  
Huangxin Chen  
Mingyang Chen  
Siew Ann Cheong  
Hongmei Chi  
Davide Chicco  
S.F. Chien  
Svetlana Chuprina  
Adriano Cortes  
Ana Cortes  
Enrique Costa-Montenegro  
Camille Coti  
Carlos Cotta  
Hélène Coullon  
Attila Csikasz-Nagy  
Loïc Cudennec  
Javier Cuenca  
Yifeng Cui  
Pawel Czarnul  
Lisandro Dalci  
Bhaskar Dasgupta  
Susumu Date  
Raymond de Callafon  
Elise de Doncker  
Kees de Graaf  
Quanling Deng  
Xiaolong Deng
Petros Koumoutsakos et al. / Procedia Computer Science 108C (2017) 1–6

Nilanjan Dey  Matti Heikkurinen  Roy Lettieri
Louis Dijkstra  Alexander Heinecke  Andrew Lewis
Minh Dinh  Ladislav Hluchy  Jingfa Li
Grzegorz Dobrowolski  Begumila Hnatkowska  Hong Liu
Riccardo Dondi  Alfons Hoekstra  James Liu
Ruggero Donida Labati  Paul Hofmann  Marcelo Lobosco
Craig C. Douglas  Robert Hsu  Robert Lodder
Rafal Drezewski  Sascha Hunold  Wen Long
Jian Du  Tadashi Ishikawa  Stephane Louise
Xiaosong Du  A. Itkin  Frederic Loulergue
Vitor Duarte  Hideya Iwasaki  Paul Lu
Witold Dzwinel  Takeshi Iwashita  Scott MacLachlan
Nahid Emad  Heike Jagode  Akash Maharaj
Christian Engelmann  Momin Jamil  Maciej Malawski
Javier Espinosa  Vytautas Jancauskas  Vania Marangozova-Martin
C. Filelis-Papadopoulos  Jiří Jaroš  Tomas Margalef
Iztok Fister  Chao Jin  Tiziana Margarita
Tony Ford  Hai Jin  Cvetozar Marginov
Geoffrey C. Fox  David Johnson  Osni Marques
Muftah Fraifer  Anshul Joshi  Michael Mascagni
Anton Frank  Xuchan Ju  Marco Mattavelli
Kar Frinkle  Hartmut Kaiser  Emil Matus
Karl Fuerlinger  Ananth Kalyanaraman  Pawel Matuszyk
Wlodzimierz Funika  George Kamps  Valerie Maxville
Takashi Furumura  B.D. Kandhai  Rahul Mazumder
Robin Gandhi  Aneta Kariaivanova  Wagner Meira Jr.
Luis Garcia-Castillo  Sven Karol  Roderick Melnik
Frédéric Gava  Takahiro Katagiri  Ivan Merelli
Zong-Woo Geem  Wayne Kelly  John Michopoulos
Nils Gentschen Felde  Jeremy Kepner  Ju Ming
Alexandros Gerbessiotis  D. Khazanchi  Kourosh Modarresi
Domingo Gimenez  Andreas Knuepfer  Lampros Moutrakis
Frank Giraldo  Waldemar Kocz Kodaj  Ignacio Muga
Christophe Giraud-Carrier  Ivan Kondov  Hiromichi Nagao
Bruno Gonçalves  Vladimir Korkhov  Kengo Nakajima
Ivo Gonçalves  Ilias Kotsireas  Philippe Navaux
Yuriy Gorbachev  Jisheng Kou  Hoang Nguyen
Pawel Gorecki  Sergey Kovalchuk  Mai Nguyen
Christopher Gottbrath  Slawomir Koziel  Sinan Melih Nigdeli
George Gravvanis  Dieter Kranzmueller  Lingfeng Niu
Clemens Grelek  Valeria Krzhizhanovskaya  James Okeefe
Derek Groen  Jitendra Kumar  Kenji Ono
Lutz Gross  Massimo La Rosa  J.P. Papa
Kun Guo  Anna-Lena Lamprecht  Marcin Paprzycki
Piotr Gurgul  Rubin Landau  David Pardo
Pietro Hiram Guzzi  Holly Lanham  R.S. Parpinelli
Diana Gühringer  Vianney Lapotre  Anna Paszynska
Mohamed Hamada  Jysoo Lee  Maciej Paszynski
Jeff Hammond  Michael Lees  Abani Patra
Dongxu Han  Leifur Leifsson  Andreas Pester