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# Computational Science and Its Applications – ICCSA 2003

International Conference  
Montreal, Canada, May 18-21, 2003  
Proceedings, Part II



Springer

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## Cataloging-in-Publication Data applied for

A catalog record for this book is available from the Library of Congress.  
Bibliographic information published by Die Deutsche Bibliothek  
Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie;  
detailed bibliographic data is available in the Internet at <<http://dnb.ddb.de>>.

CR Subject Classification (1998): D, F, G, H, I, J, C.2-3

ISSN 0302-9743

ISBN 3-540-40161-X Springer-Verlag Berlin Heidelberg New York

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Springer-Verlag Berlin Heidelberg New York  
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<http://www.springer.de>

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by Boller Mediendesign  
Printed on acid-free paper SPIN: 10927434 06/3142 5 4 3 2 1 0

# Preface

Computational Science is becoming a vital part of many scientific investigations, impacting researchers and practitioners in areas ranging from aerospace and automotive to chemistry, electronics, geosciences, finance, mathematics, and physics. Due to the sheer size of many challenges in computational science, the use of supercomputing, parallel processing, and sophisticated algorithms is inevitable.

This volume contains the proceedings of The 2003 International Conference on Computational Science and Its Applications (ICCSA 2003), held in Montreal, Canada in May 2003. The papers presented here reflect the aim of the program committee to bring together researchers and scientists from mathematics and computer science, the basic computing disciplines, and researchers from various application areas who are pioneering advanced application of computational methods to sciences such as physics, chemistry, life sciences, engineering, arts, and the humanities, along with software developers and vendors, to discuss problems and solutions in the area, identify new issues, and shape future directions for research, as well as help industrial users apply various advanced computational techniques.

Our outstanding invited speakers outlined the theme for the Conference, considering sophisticated numerical computational methods, emerging computational solutions, and problems and applications pushing the bounds of advanced computing techniques and hardware.

This Conference was held as the first in its series, with an emphasis on Computational Science and the application of computational science. Interest from researchers and practitioners in this interdisciplinary area has been overwhelming, and we are looking forward to future events in this Conference series.

The ICCSA 2003 Conference was jointly organized by (in alphabetical order): Heuchera Technologies, Canada, The Queen's University of Belfast, UK, SHARCNET, Canada, University of Calgary, Canada, University of Minnesota, USA, and University of Montreal, Canada.

ICCSA 2003 would not have been possible without the support of our sponsors (in alphabetical order):

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- School of Computer Science, The Queen’s University of Belfast, UK
- Department of Computer Science, University of Calgary, Canada

The support provided by these sponsors was beyond our expectations.

We would also like to mention the following individuals who have greatly supported us (in alphabetical order):

- Hamid Arabnia (University of Georgia, USA)
- Michael Bauer (SHARCNET, Canada)
- Matthew Dixon (Heuchera Technologies, Canada)
- Anna Kramer (Springer-Verlag, Germany)
- Dominic Lam (IBM Canada, Canada)
- Alfred Hofmann (Springer-Verlag, Germany)
- Andres Iglesias (University de Cantabria, Spain)
- Allan MacIsaac (SHARCNET, Canada)
- Youngsong Mun (Soongsil University, Korea)
- Colette Tipping (The Queen’s University of Belfast, UK)
- Birgit Wissen (Pallas, Germany)

We are deeply indebted to the members of the program committee and all people in the community who have helped us to form a successful program. Many individuals have kindly offered us their assistance and support in the organization of this Conference. If we have failed to thank them, we would like to ask them to accept our sincere apologies.

May 2003

Vipin Kumar  
Marina L. Gavrilova  
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