Foreword

Algorithms that combine ideas from symbolic and numeric computation have been of increasing interest over the past decade. Not only do the usual algorithms of computer algebra break down when applied to inexact values, but the analytic setting itself allows many new questions to be asked. This, together with the growing demand for speed, accuracy and reliability in mathematical computing, has accelerated the process of blurring the distinction between two areas of research that were previously quite separate.

The goal of the present workshop is to support this interaction and integration of symbolic and numeric computing. Earlier meetings in this series include the *SNAP 96* workshop, held in Sophia Antipolis, France, and the *SNC 2005* meeting, held in Xi'an, China. Following the tradition, *Symbolic-Numeric Computation 2007* will be held July 25-27 in London, Canada.

SNC 2007 is affiliated with the *2007 International Symposium on Symbolic and Algebraic Computation (ISSAC 2007)*. Co-located with this workshop is *PASCO 2007*, the *2007 International Workshop on Parallel Symbolic Computation*. *SNC* and *PASCO* are held immediately prior to the *ISSAC 2007* meeting, both in London at the University of Western Ontario. *ISSAC 2007* takes place nearby in Waterloo, Canada.

The call for papers solicited contributions from all areas of symbolic-numeric computing, including:

- hybrid symbolic-numeric algorithms
- approximate polynomial GCD and factorization
- symbolic-numeric methods for solving polynomial systems
- resultants and structured matrices for symbolic-numeric computation
- differential equations for symbolic-numeric computation
- symbolic-numeric methods for geometric computation
- symbolic-numeric algorithms in algebraic geometry
- symbolic-numeric algorithms for nonlinear optimization
- numeric computation of characteristic sets and Gröbner bases
- implementation of symbolic-numeric algorithms
- model construction by approximate algebraic algorithms
  (e.g. numerical sparse interpolation, the approximate Buchberger-Moeller algorithm)
- applications of symbolic-numeric computation.

In response, 38 submissions were received: 9 extended abstracts and 29 full papers. The program committee collected 113 referee reports -- on average three per submission. After careful considerations, 6 of the 9 extended abstracts and 19 of the 29 papers were accepted. In addition, we are grateful that the majority of the invited speakers contributed full papers as well. One of our invited speakers, Anthony Kennedy, is joint with *PASCO* and we also share our after-dinner speaker, Keith Geddes, at the joint *SNC-PASCO* banquet.

We are grateful to all who contributed to the success of our meeting: the invited speakers: André Galligo, Keith Geddes, Erich Kaltofen, Anthony Kennedy, Nick Trefethen, Charles Wampler, Lihong Zhi; the authors of full papers and extended abstracts; our hard-working program committee; and many anonymous reviewers.

Finally, we wish to thank those organizations that provided support for the workshop:

- The Fields Institute for Research in Mathematical Sciences
- The MITACS Network of Centres of Excellence
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- The University of Western Ontario:
  Research Western, Faculty of Science, Department of Computer Science
- The Ontario Research Centre for Computer Algebra
- Maplesoft
- *SHARCNET*

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