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**New Methods in Applied and Computational**  
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**(Queensland, July, 1998)**

Edited by  
Roderick Melnik, Suely Oliveira and David Stewart

# **New Methods in Applied and Computational Mathematics**

Proceedings of the New Methods in Applied and  
Computational Mathematics (NEMACOM98)  
held at Hervey Bay, Queensland, Australia,  
9th July, 1998.

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## Preface

In July 1998 the first NEMACOM (NEW Methods in Applied and COmputational Mathematics) workshop was held at the campus of the University of Southern Queensland at Hervey Bay on the Wide-Bay-Burnett coast of Queensland. At the workshop a number of different topics in applied and computational mathematics were presented ranging from computational statistics and stochastic processes, through optimization, optimal control, graph theoretic methods in computational mathematics, the use of dynamical systems techniques for meteorology, modelling the solar atmosphere and geo-hydrological processes, simulating rigid-body dynamics, and the future of the Fast Fourier Transform. In this proceedings we present papers covering a selection of the topics presented. We would like to thank all those who participated in NEMACOM98 for attending, and for their contributions to this proceedings.

We would also like to thank

- the Australian Mathematical Society, and
- Numerical Algorithms Group plc, Oxford, UK

for their financial support for NEMACOM98. We would also like to thank the Centre for Mathematics and its Applications at the School of Mathematical Sciences, Australian National University for publishing this proceedings.

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Keynote talk: *The Future Fast Fourier Transform?*
- Dr. Stephen J. Wright,  
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Keynote talk: *Modifying the Cholesky factorization in interior-point methods.*

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