

## Preface

The Fourth International Workshop on Applied Parallel Computing (PARA'98) was held in Umeå, Sweden, June 14–17, 1998. The workshop was organized by the High Performance Computing Center North (HPC2N) and the Department of Computing Science at Umeå University. The general theme for PARA'98 was Large Scale Scientific and Industrial Problems, focusing on:

- High-performance computing applications in academia and industry,
- Tools, languages and environments for high-performance computing,
- Scientific visualization and virtual reality applications in academia and industry,
- Future directions in high-performance computing and networking.

The workshop attracted over 140 people representing 18 different countries. PARA'98 was an international forum for idea and competence exchange for specialists in high performance and parallel computing, visualization, and scientists from industry and academia involved in solving large scale computational problems. The workshop program included 20 invited presentations and 64 contributed presentations that were selected by the PARA'98 steering committee. These proceedings reflect the results of this meeting.

The PARA'98 meeting began with a one-day tutorial followed by a three-day workshop. The tutorial program included three topics: Tools and Languages for High Performance Computing (Dennis Gannon, Indiana University), Projection Based Virtual Environments for Collaboration in Scientific Visualization, Industrial Design and Art (Dan Sandin, University of Illinois, Chicago), and Scientific Visualization and Computational Steering, (Chris Johnson, University of Utah). Over 80 people attended the tutorials.

The first three PARA workshops were held at the Technical University of Denmark (DTU), Lyngby (1994, 1995, and 1996). Following PARA'96 an international steering committee for the PARA meetings was appointed and the committee decided that a workshop should take place every second year in one of the Nordic countries. One important aim of these workshops is to strengthen the ties between HPC centers, academia, and industry in the Nordic countries as well as worldwide. Sweden and Umeå University organized the 1998 workshop and the next workshop in the year 2000 will take place at the University of Bergen in Norway.

September 1998

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Jack Dongarra  
Erik Elmroth  
Jerzy Waśniewski

# Organization

PARA'98 was organized by the High Performance Computing Center North (HPC2N) and the Department of Computing Science at Umeå University.

## Organizing Committee

Conference Chair:	Bo Kågström (Umeå University, Sweden)
Conference Coordinator:	Erik Elmroth (Umeå University, Sweden)
Local Organization:	Krister Dackland (Umeå University, Sweden)
	Lena Hellman (Umeå University, Sweden)
	Per Ling (Umeå University, Sweden)
	Mats Nylén (Umeå University, Sweden)
	Peter Poromaa (Umeå University, Sweden)

## Steering Committee

Petter Bjørstad	University of Bergen (Norway)
Jack Dongarra	University of Tennessee and Oak Ridge National Laboratory (USA)
Björn Engquist	PDC, Royal Institute of Technology, Stockholm (Sweden)
Kristjan Jonasson	University of Iceland, Reykjavik (Iceland)
Bo Kågström	Umeå University and HPC2N (Sweden), <i>PARA'98 Chairman</i>
Risto Nieminen	Helsinki University of Technology, Espoo (Finland)
Karstein Sørli	SINTEF, Dept of Industrial Mathematics, Trondheim (Norway)
Olle Teleman	Center for Scientific Computing (CSC), Espoo (Finland)
Jerzy Waśniewski	Danish Computing Centre for Research and Education (UNI•C), Lyngby (Denmark), <i>PARA'94-96 Chairman</i>

## Sponsoring Institutions

Swedish Council for High Performance Computing (HPDR)  
Swedish Natural Science Research Council (NFR)  
Swedish Research Council for Engineering Sciences (TFR)  
Umeå University (Rector, HPC2N, Department of Computing Science)  
IBM Sweden

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