

Preface

It is our pleasure to provide you with the volume containing the proceedings of the 4th International Conference on Parallel Processing and Applied Mathematics, which was held in Nałęczów, a small picturesque town in southeastern Poland, on 9-12 September 2001. The event, which continued the tradition of the PPAM'94, PPAM'97, and PPAM'99 conferences, established itself as one of the premiere Polish conferences and definitely the most important one in the area of parallel computing and applied mathematics. It all started in 1994, when the Institute of Mathematics and Computer Science of the Technical University of Częstochowa organized the first conference in their home-town. The main idea behind the event was to provide a forum for researchers involved in applied and computational mathematics and parallel computing to exchange ideas in a relaxed atmosphere. Conference organizers hoped that this arrangement would result in cross-pollination and lead to successful research collaborations. The fact that these assumptions were correct was proven by the growth of the event. While the first conference consisted of 41 presentations, most of them by Polish participants and not much of a paper selection process, the subsequent events gathered 78 participants in Zakopane in 1997 and 105 participants in Kazimierz Dolny in 1999. Finally, the meeting in September 2001 was, for the first time, organized in cooperation with the Society for Industrial and Applied Mathematics (SIAM) and gathered more than 150 participants from 24 countries. This was also the first time when a very strict refereeing process was put in place, resulting in the acceptance of only approximately 100 contributed presentations, while approximately 30% of the submissions were rejected. The conference covered such important fields of parallel/distributed computing and applied mathematics as

- parallel architectures
- parallel numerical and non-numerical algorithms
- scheduling and load balancing
- performance analysis and prediction
- parallel programming
- tools and environments for parallel processing
- numerical and non-numerical applications of parallel processing
- evolutionary computing and neural networks
- numerical methods solving differential equations
- mathematical and computer methods in mechanics and material processing, biology, physics, environmental modeling.

The plenary and invited talks were presented by B. Chopard, V. Decyk, E. Deelman, J. Dongarra, A. Gościński, F. Guinand, F. Gustavson, T. Mattson, Ch. Norton, M. Paprzycki, Y. Saad, P. Sloot, B.K. Szymański, K. Theobald, and J. Waśniewski.

Special sessions and workshops on parallel-distributed-cooperative constraint solving, complex systems simulations, theoretical and computational methods in

hydrodynamics and functional differential equations and their applications were organized.

The PPAM 2001 meeting began with three half-day tutorials:

- Numerical interval arithmetic by B. Walster,
- Numerical linear algebra, LAPACK and ScaLAPACK by F. Gustavson and J. Waśniewski,
- Performance analysis and prediction by Verner Krotz-Vogel.

We would like to express our gratitude to our sponsors: Compaq Computer Corp., Intel Corp., Myricom Inc., and Sun Microsystems. We would also like to say thank you to all members of the International Program Committee, who worked diligently refereeing the submissions. Finally, we would like to thank all of the local organizers, including the Ph.D. students from the Technical University of Częstochowa, who helped us to run the event very smoothly.

We hope that this volume will be useful to you. We would also like everyone who reads it to feel invited to the next conference, which will take place in Poland in 2003.

On a somber note, the conference took place during the events of September 11th. We would like to express our thanks to the organizers for helping those of us who had to travel back to the US and Canada and were not able to fly as scheduled.

February 2002

Roman Wyrzykowski
Jack Dongarra
Marcin Paprzycki
Jerzy Waśniewski

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Special Session on Parallel/Distributed/Cooperative Constraint Solving

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Eric Monfroy	University of Nantes, France

Minisymposium on Functional Differential Equations and Their Applications

Henryk Leszczyński	University of Gdańsk, Poland
Elena Litsyn	Ben-Gurion University, Beer-Sheva, Israel

Minisymposium on Computational and Theoretical Methods in Hydrodynamics

Jan Jankowski	Polish Register of Shipping, Gdańsk, Poland
Henryk Leszczyński	University of Gdańsk, Poland

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