

# Preface

Parallel Virtual Machine (PVM) and Message Passing Interface (MPI) are the most commonly used tools for programming based on the message-passing paradigm.

This volume consists of 49 contributed and invited papers presented at the Fifth European PVM/MPI Users' Group Meeting held in Liverpool, UK, September 7-9, 1998. The conference was organised jointly by the High Performance Computing and Communication group, the Computer Science Department, University of Liverpool, UK, and Oak Ridge National Laboratory, USA. A special session on tools for PVM and MPI was organised by EuroTools Working Group.

The first four conferences of the series were held at the University of Rome, Italy (1994), ENS Lyon, France (1995), TU München, Germany (1996), and the Institute of Computer Science and ACC CYFRONET in Krakow, Poland (1997).

This conference was a forum for users and developers of PVM, MPI, and other message-passing programming environments as well as developers of tools for PVM and MPI. The meeting permitted a useful interaction between the groups and provided a forum for exchanging and developing new ideas in parallel computing.

The main topics of the meeting were the latest extensions and improvements to PVM and MPI, tools for PVM and MPI, performance and evaluation of PVM and MPI, algorithms using PVM and MPI, applications in science and engineering based on the message-passing paradigm, interfaces for PVM and MPI, HPF/MPI extensions, and implementation issues. The conference included 2 tutorials on advanced usage of PVM and MPI, 19 invited talks, and 39 contributed oral presentations.

The drawing up of the interesting programme was due to invaluable suggestions of the members of the EuroPVM/MPI98 Programme Committee. Each contributed paper was refereed by at least two referees.

The conference was sponsored by EuroTools Working Group within the ESPRIT programme of the EC, FECIT (Fujitsu European Centre for Information Technology) Ltd., IBM (UK), NAG Ltd., NA Software Ltd., Progress Computer Systems Ltd. and DEC (UK), SiliconGraphics (UK), and The University of Liverpool.

Finally, we would like to express our gratitude to our colleagues from the Department of Computer Science at Liverpool, who assisted in the organisation of EuroPVM/MPI98.

July 1998

Vassil Alexandrov  
Jack Dongarra

## Programme Committee

Vassil Alexandrov	University of Liverpool, Liverpool, UK
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Jens Clausen	Technical University of Denmark, Denmark
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Graham Fagg	University of Tennessee, USA
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Al Geist	Oak Ridge National Laboratory, Oak Ridge, USA
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Rolf Hempel	C&C Research Labs, NEC Europe Ltd., Germany
Thomas Ludwig	Technical University of Munich, Germany
Emilio Luque	Universitat Autònoma de Barcelona, Spain
Thomas Margalef	Universitat Autònoma de Barcelona, Spain
Graham Megson	University of Reading, UK
Benno Overeinder	University of Amsterdam, The Netherlands
Andrew Rau-Chaplin	Dalhousie University, Halifax, Canada
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Vaidy Sunderam	Emory University, Atlanta, USA
Bernard Tourancheau	Université Claude Bernard de Lyon, France
Marian Vajteršic	Slovak Academy of Sciences, Bratislava, Slovakia
Roland Wismüller	Technical University of Munich, Germany
Zahari Zlatev	National Environmental Research Institute, Denmark

## Referees

Cliff Addison	Fujitsu European Centre for Information Technology, UK
Marian Bubak	Institute of Computer Science, AGH, Krakow, Poland
Jens Clausen	Technical University of Denmark, Denmark
Mike Delves	NA Software, Liverpool, UK
Frank Dehne	Carleton University, Ottawa, Canada
Ivan Dimov	CLPP, Bulgarian Academy of Sciences, Bulgaria
Jack Dongarra	University of Tennessee and ORNL, USA
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Thomas Ludwig	Technical University of Munich, Germany
Emilio Luque	Universitat Autònoma de Barcelona, Spain
Thomas Margalef	Universitat Autònoma de Barcelona, Spain
Graham Megson	University of Reading, UK
Benno Overeinder	University of Amsterdam, The Netherlands
Ray Paton	University of Liverpool, UK
Andrew Rau-Chaplin	Dalhousie University, Halifax, Canada
Yves Robert	Ecole Normale Supérieure de Lyon, France
Wojtek Rytter	University of Liverpool, UK
David F. Snelling	Fujitsu European Centre for Information Technology, UK
Vaidy Sunderam	Emory University, Atlanta, USA
Bernard Tourancheau	Université Claude Bernard de Lyon, France
Marian Vajtersic	Slovak Academy of Sciences, Bratislava, Slovakia
Roland Wismüller	Technical University of Munich, Germany
Zahari Zlatev	National Environmental Research Institute, Denmark

## Invited Speakers

Cliff Addison (Fujitsu European Centre for Information Technology, UK), Mark Baker (University of Portsmouth, UK), David Beagle (DEC, UK), Shirley Browne (University of Tennessee, USA), Karsten Decker, (CSCS/SCSC, Switzerland), Mike Delves (NA Software Ltd., UK), Mishi Derakhshan (NAG Ltd.), Ivan Dimov (CLPP, Bulgarian Academy of Sciences, Bulgaria), Hubert Ertl (GENIAS GmbH, Germany), Markus Fischer (University of Tennessee, USA), Al Geist, (Oak Ridge National Lab, USA), Andrew Grant (SiliconGraphics, UK), William Gropp (Argonne National Laboratory, USA), Werner Krotz-Vogel (Pallas GmbH, Germany), Graham Megson (University of Reading, UK), Wolfgang Nagel (TU Dresden, Germany), Vaidy Sunderam (Emory University, USA), Richard Treumann (IBM Server Group, Poughkeepsie, USA) Zahari Zlatev (Danish Environmental Research Institute, Denmark).

## Acknowledgements

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