

**THURSDAY
MAY 4**

9:00 AM – 10:00 AM
KEYNOTE ADDRESS

***Asynchronous Parallel
Computing, from Theory to
Practice***

**Michael O. Rabin, Harvard
University**

(Break 10:00 - 10:30)

10:30 AM – 12:30 NOON

SESSION 11

Communication

Chair: Ian Foster

**Argonne National Laboratory &
University of Chicago**

**A New Portable and Seamless
Pure Java Framework for
Distributed Programming Over a
TCP/IP Network**

Zvi Har'El and Zvi Rosberg, IBM,
Haifa Research Laboratory, Israel

**Reduction Optimization in
Heterogeneous Cluster
Environments**

Pangfeng Liu, National Chung
Cheng University, Da-Wei Wang,
Institute of Information Science,
Academia Sinica, R.O.C.

**Template Based Structured
Collections**

Jörg Nolte, Mitsuhisa Sato, and
Yutaka Ishikawa, Real World
Computing Partnership, Japan

**Bandwidth-efficient Collective
Communication for Clustered
Wide Area Systems**

Thilo Kielmann and Henri E. Bal,
Vrije Universiteit, The Netherlands,
Sergei Gorlatch, University of
Passau, Germany

**Replicating the Contents of a
WWW Multimedia Repository to
Minimize Download Time**

Thanasis Loukopoulos and Ishfaq
Ahmad, The Hong Kong University
of Science and Technology, Hong
Kong

**Enhancing NWS for Use in an
SNMP Managed Internetwork**

Robert E. Busby, Jr., AT&T
Network Operations, Mitchell L.
Neilsen and Daniel Andresen,
Kansas State University

10:30 AM – 12:30 NOON

SESSION 12

Distributed Computing

**Chair: Henri Casanova
University of California at San
Diego**

**Consensus Based on Failure
Detectors with a Perpetual
Accuracy Property**

A. Mostefaoui and M. Raynal,
IRISA, France

**High Performance Parametric
Modeling with Nimrod/G: Killer
Application for the Global Grid?**

David Abramson, Monash
University, Jon Giddy, University of
Queensland, Lew Kotler,
Australian Radiation Protection
and Nuclear Safety Agency,
Australia

**Space and Time Efficient Self-
Stabilizing I -Exclusion in Tree
Networks**

Rachid Hadid, Université de
Picardie Jules Verne, France

**Virtual BUS: A Network
Technology for Setting up
Distributed Resources in Your
Own Computer**

Toshiaki Miyazaki, Atsushi
Takahara, Shinya Ishihara,
Seiichiro Tani, Takahiro Murooka,
Tomoo Fukazawa, Mitsuo
Teramoto, and Kazuyoshi
Matsuhira, NTT Innovation
Laboratories, Japan

**Limits and Power of the
Simplest Uniform and Self-
Stabilizing Phase Clock
Algorithm**

Florent Nolot and Vincent Villain,
Université de Picardie Jules Verne,
France

**Are Global Computing Systems
Useful? – Comparison of Client-
Server Global Computing
Systems Ninf, NetSolve versus
CORBA –**

Toyotaro Suzumura and Takayuki
Nakagawa, Tokyo Institute of
Technology, Satoshi Matsuoka,
Tokyo Institute of Technology/JST,
Hidemoto Nakada and Satoshi
Sekiguchi, Electrotechnical
Laboratory, Japan

10:30 AM – 12:30 NOON

SESSION 13

Threading

**Chair: Steve Carr
Michigan Technological
University**

**JavaSpMT: A Speculative
Thread Pipelining Parallelization
Model for Java Programs**

Iffat H. Kazi and David J. Lilja,
Minnesota Supercomputing
Institute, University of Minnesota

**On the Scheduling Algorithm of
the Dynamically Trace
Scheduled VLIW Architecture**

Alberto Ferreira de Souza and
Peter Rounce, University College
London, UK

**Monotonic Counters: A Powerful
New Mechanism for Thread
Synchronization**

John Thornley, University of
Virginia, K. Mani Chandy,
California Institute of Technology

**Thread Migration, Load
Balancing, and Heterogeneity in
Non-Dedicated Environments**

Kritchalach Thitikamol and Peter
Keleher, University of Maryland

**Caching Single-Assignment
Structures to Build a Robust
Fine-Grain Multi-Threading
System**

Wen-Yen Lin and Jean-Luc
Gaudiot, University of Southern
California, José Nelson Amaral
and Guang R. Gao, University of
Delaware

**THURSDAY
MAY 4**

A Quantitative Assessment of Thread-Level Speculation Techniques

Pedro Marcuello and Antonio Gonzalez, Universitat Politècnica de Catalunya, Spain

(Lunch 12:30 - 1:30)

1:30 PM – 3:30 PM

SESSION 14

Wormhole Routing

Chair: Larry Snyder

University of Washington

An Analytical Model of Fully-Adaptive Wormhole-Routed k -Ary n -Cubes in the Presence of Hot-Spot Traffic

H. Sarbazi-Azad and L.M. Mackenzie, University of Glasgow, M. Ould-Khaoua, University of Strathclyde, UK

Balancing Traffic Load for Multi-Node Multicast in a Wormhole 2D Torus/Mesh

San-Yuan Wang, Yu-Chee Tseng, Ching-Sung Shiu, and Jang-Ping Sheu, National Central University, Taiwan

A Simple and Efficient Mechanism to Prevent Saturation in Wormhole Networks

E. Baydal, P. López, and J. Duato, Universidad Politécnica de Valencia, Spain

Fair and Efficient Packet Scheduling in Wormhole Networks

Salil S. Kanhere, Alpa B. Parekh, and Harish Sethu, Drexel University

Fault-Tolerant Wormhole Routing Algorithms in Meshes in the Presence of Concave Faults

Seungjin Park, Michigan Tech. University, Jong-Hoon Youn and Bella Bose, Oregon State University

1:30 PM – 3:30 PM

SESSION 15

Input/Output

Chair: Dan Andresen

Kansas State University

ACDS: Adapting Computational Data Streams for High Performance

Carsten Isert and Karsten Schwan, Georgia Institute of Technology

A Component Framework for Communication in Distributed Applications

Jeffrey M. Fischer and Milos D. Ercegovac, UCLA

Design and Evaluation of I/O Strategies for Parallel Pipelined STAP Applications

Wei-keng Liao and Alok Choudhary, Northwestern University, Donald Weiner and Pramod Varshney, Syracuse University

A Multi-tier RAID Storage System with RAID1 and RAID5

Nitin Muppalaneni and K. Gopinath, Indian Institute of Science, Bangalore, India

Performance of the IBM General Parallel File System

Alice Koniges, Terry Jones, and R. Kim Yates, Lawrence Livermore National Laboratory

1:30 PM – 3:30 PM

SESSION 16

Shared Memory

Chair: David Bader

University of New Mexico

Reducing Ownership Overhead for Load-Store Sequences in Cache-Coherent Multiprocessors

Jim Nilsson, Chalmers University of Technology, Fredrik Dahlgren, Ericsson Mobile Communications, Sweden

Dynamic Data Layouts for Cache-conscious Factorization of DFT

Neungsoo Park, Dongsoo Kang, Kiran Bondalapati, and Viktor K. Prasanna, University of Southern California

Exploring the Switch Design Space in a CC-NUMA

Multiprocessor Environment
Marius Pirvu, Nan Ni, and Laxmi Bhuyan, Texas A&M University

Fast Synchronization on Scalable Cache-Coherent Multiprocessors using Hybrid Primitives

Dimitrios S. Nikolopoulos and Theodore S. Papatheodorou, University of Patras, Greece

Using Switch Directories to Speedup Cache-to-Cache Transfers in CC-NUMA Multiprocessors

Ravi Iyer, Intel Corporation, Laxmi Bhuyan, Texas A&M University, Ashwini Nanda, IBM TJ Watson Research Center

Predicting Performance on SMPs. A Case Study: The SGI Power Challenge

Nancy M. Amato, Jack Perdue, and Mark Mathis, Texas A&M University, Andrea Pietracaprina and Geppino Pucci, Università di Padova, Italy

(Break 3:30 - 3:30)

**THURSDAY
MAY 4**

4:00 PM – 6:00 PM

SESSION 17

Optical Computing

Chair: Viktor Prasanna
University of Southern
California

**An Optimal Parallel Algorithm
for Computing Moments on
Arrays with Reconfigurable
Optical Buses**

Chin-Hsiung Wu and Shi-Jinn
Horng, National Taiwan University
of Science and Technology,
Horng-Ren Tsai, The Overseas
Chinese College of Commerce,
R.O.C.

**Relating Two-Dimensional
Reconfigurable Meshes with
Optically Pipelined Buses**

Anu G. Bourgeois and Jerry L.
Trahan, Louisiana State University

**Optimal All-to-All Personalized
Exchange in a Class of Optical
Multistage Networks**

Yuanyuan Yang, State University
of New York at Stony Brook,
Jianchao Wang, GTE Laboratories

**Wavelengths Requirement for
Permutation Routing in All-
Optical Multistage
Interconnection Networks**

Qian-Ping Gu and Shietung Peng,
The University of Aizu, Japan

**Digraph Isomorphisms and Free
Space Optical Networks**

D. Coudert, A. Ferreira, and S.
Perennes, INRIA Sophia-Antipolis,
France

4:00 PM – 6:00 PM

SESSION 18

Numerical Algorithms

Chair: Judith Devaney
NIST

**Parallel Lagrange Interpolation
on the Star**

H. Sarbazi-Azad and L.M.
Mackenzie, University of Glasgow,
M. Ould-Khaoua, University of
Strathclyde, U.K., S.G. Akl,
Queen's University, Canada

**Data Allocation Strategies for
Dense Linear Algebra Kernels
on Heterogeneous Two-
dimensional Grids**

Olivier Beaumont, Vincent Boudet,
Fabrice Rastello, and Yves Robert,
Ecole Normale Supérieure de
Lyon, France

**Multicomputer Algorithms for
Wavelet Packet Image
Decomposition**

Manfred Feil and Andreas Uhl,
University of Salzburg, Austria

**On Optimal Fill-Preserving
Orderings of Sparse Matrices for
Parallel Cholesky Factorizations**

Wen-Yang Lin, I-Shou University,
Chuen-Liang Chen, National
Taiwan University, ROC

**Using Postordering and Static
Symbolic Factorization for
Parallel Sparse LU**

Michel Cosnard and Laura Grigori,
LORIA-INRIA Lorraine, France

4:00 PM – 6:00 PM

SESSION 19

Meshes and Arrays

Chair: Nancy Amato
Texas A&M University

**A Constructive Solution to the
Juggling Problem in Processor
Array Synthesis**

Alain Darté, LIP, ENS-Lyon,
France, Robert Schreiber and B.
Ramakrishna Rau, Hewlett-
Packard Company, USA, Frédéric
Vivien, ICPS, France

**Repertitioning Unstructured
Adaptive Meshes**

Jose G. Castañón, and John E.
Savage, Brown University

**Study of a Multilevel Approach
to Partitioning for Parallel Logic
Simulation**

Swaminathan Subramanian,
Dhananjai M. Rao, and Philip A.
Wilsey, University of Cincinnati