

SCAN'95: International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics

SCAN'95: Международный симпозиум по научным вычислениям, машинной арифметике и достоверности расчетов

From Finland to Portugal, from Japan to Brazil, from Texas to Siberia: 118 participants from 17 countries met for the traditional SCAN conference in Wuppertal, Germany on September 26–29, 1995. The SCAN meetings take place biannually under the joint auspices of GAMM and IMACS. They deal with all aspects of the validation of computational results.

11 plenary talks, 60 contributed talks (in two parallel sessions) and 15 posters informed about the latest results and developments in the fields of hardware, software, tools and libraries, algorithms for elementary operations and functions with maximum accuracy, computer and interval arithmetic, validating methods for ordinary and partial differential equations, eigenvalue problems, systems of nonlinear equations, linear programming, global optimization and applications from the engineering sciences. The list of plenary talks is appended to this report.

As a small choice from the many excellent contributions let us mention: MIM XPA3233, a microprocessor which makes the precise hardware dot product available also for PC users, the use of interval computations in the investigation of dynamical systems, complexity results for problems with uncertain data and their interpretation, parallel methods.

The conference was mainly supported by the German Science Foundation (DFG), but also by the the local government of Land Nordrhein-Westfalen, the University of Wuppertal, some local sponsors and GAMM. 25 scientists from Middle and Eastern European countries could attend due to this support.

University and the city of Wuppertal showed their interest in meetings of this kind by giving two receptions. Together with the other social events this should have contributed to a fruitful atmosphere also beyond purely scientific aspects.

The next SCAN meeting will take place in Lyon (France) in fall 1997. It will be organized by J.-M. Muller.

Plenary lectures:

- G. Corliss (Milwaukee): Validating an A Priori Enclosure Using High-Order Taylor Series
- H. Hong (Linz): Symbolic-Numeric Methods for Quantified Constraint Solving
- R. B. Kearfott (Lafayette): Treating Non-Smooth Functions as Smooth Functions in Global Optimization and Nonlinear Systems Solvers
- V. Kreinovich (El Paso): Computational Complexity of Interval Algebraic Problems: Some are Feasible and Some are Computationally Intractable. A Survey
- U. Kulisch (Karlsruhe): XSC—Tools for Verified Computing—An Overview

- M. Mrozek (Kraków): Computer Assisted Proofs in Dynamics
- J.-M. Muller (Lyon): Towards Exact Rounding of the Elementary Functions
- M. Plum (Karlsruhe): An Existence and Enclosure Method for Two-Point Boundary Value Problems with Symmetry-Breaking Bifurcations
- S. M. Rump (Hamburg-Harburg): New Results on Validation Algorithms for Large Systems of Equations
- S. Shary (Krasnoyarsk): A New Approach to the Analysis of Static Systems under Interval Uncertainty
- Y. Shokin (Novosibirsk): New Mathematical Problems of Interval Analysis: A Survey

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