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13. ABSTRACT (Maximum 200 words) The SIAM, 1983 Fall Meeting held at the OMNI Hotel, Norfolk, Virginia, focused on three themes--- computational aerodynamics; control, stabilization and optimization in distributed parameter systems; and parallel processing. Well known researchers were ten minisymposia which enhanced the major themes. The conference attracted a large, enthusiastic group of attendees with well over 100 contributed papers in addition to those presented in the minisymposia.				
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Final Technical Report
SIAM 1983 Fall Meeting
OMNI Hotel, Norfolk, VA

The meeting focused on three themes: computational aerodynamics; control, stabilization and optimization in distributed parameter systems; and parallel processing. The featured speakers and their topics were as follows:

Computational Aerodynamics

"The Status of Computational Aerodynamics." William F. Ballhaus, Jr., NASA-Ames Research Center; "Numerical Simulation of Transonic Flow." Jerry C. South, Jr., NASA Langley Research Center; "Numerical Solution of the Navier-Stokes Equations." Robert W. McCormack, University of Washington; "Mathematical Aspects of Turbulence Modeling." John L. Lumley, Cornell University.

Control, Stabilization and Optimization in Distributed Parameter Systems

"Optimal Design Involving Distributed Systems." Michel C. Delfour, Universite de Montreal; "Stabilization and Feedback Control Methods for Partial and Delay Differential Equations." J. S. Gibson, University of California, Los Angeles

Parallel Processing

"Large Scale Numerical Simulations and Parallel Computers." Garry Rodrigue, Lawrence Livermore National Laboratory; "The Influence of Computer Architecture on the Choice of Numerical Algorithms." Roger W. Hockney, Reading University; "Performance Potentials of Various Parallel Architectures." David J. Kuck, University of Illinois, Urbana; "Present Status and Future Direction of Parallel Computers." Jack Schwartz, Courant Institute of Mathematical Sciences.

There were also ten minisymposia organized to support and enhance the major themes of the meeting. Their titles and the organizers are listed below:

Computer Error Estimates for Partial Differential Equations and Applications. Randolph E. Bank, University of California, San Diego; Control and Estimation. Patricia Daniel, Southern Methodist University; Distributed Systems in Large Space Structures. H. Thomas Banks, Brown University; Application of Spectral Methods to Hydrodynamic and Aerodynamic Problems. M. Y. Hussaini, ICASE; Grid Generation. C. Wayne Mastin, Mississippi State University; Approximation to Distributed Parameter Systems. Clyde F. Martin, Case Western Reserve University; Novel Techniques and Algorithms for the Numerical Solution of Partial Differential Equations. Max Gunzburger, Carnegie-Mellon University; Theoretical Aerodynamics. L. Pamela Cook, University of Delaware; Parallel and Vector Algorithms for Matrix Computations. Robert J. Plemmons; Number Crunching on Small, Medium, and Large-Scale Computers. Myron Ginsberg, General Motors Research Laboratories.

In addition, there were two special lectures: the George Polya Prize Lecture given by the co-winners of the 1983 Polya Prize in Applied Combinatorics - Anders Bjorner, University of Stockholm, and Paul Seymour, Ohio State University and the Immediate Past President Lecture given by Seymour Parter, University of Wisconsin.

The conference attracted a large enthusiastic group of attendees with well over 100 contributed papers in addition to those presented in the minisymposia mentioned above, and poster presentations. Total attendance was 469. There were 33 from outside of the United States, coming from Canada, England, France, Japan, Italy, Ireland, Norway, Sweden, the Netherlands, and West Germany. There was an excellent interchange of ideas among the representatives of the different themes of the meeting. The most significant of these was between computational aerodynamics and parallel processing. The computational requirements of aerodynamic research demand a level of computing performance that can only be obtained through parallelism. In addition, such requirements are important in driving the research required to advance the state of the art of the computer industry.

July 30, 1984

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