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Form Approved
OMB No. 0704-0188

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average 1 hour per response, including the time for reviewing instructions, searching existing data sources, the collection of information. Send comments regarding this burden estimate or any other aspect of this Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

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3. REPORT TYPE AND DATES COVERED
FINAL 1 Aug 91 - 31 Jan 92

4. TITLE AND SUBTITLE
"4TH ANNUAL CONFERENCE ON NUMERICAL COMBUSTION"(U)

5. FUNDING NUMBERS
61102F
2304/A3

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
SIAM
3600 University City Science Center
Philadelphia, PA 19104-2688

8. PERFORMING ORGANIZATION REPORT NUMBER
AFOSR-TR- 92 04 11

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
AFOSR/NM
Bldg 410
Bolling AFB DC 20332-6448

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
AFOSR-91-0306

DTIC
SELECTE
MAY 21 1992
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11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release;
Distribution unlimited

12b. DISTRIBUTION CODE
UL

13. ABSTRACT (Maximum 200 words)

The Fourth International Conference on Numerical Combustion was held on December 2-4, 1991, in St Petersburg, Florida. It was a sequel to the 1989 meeting in Antibes, the 1987 meeting in San Francisco, and the 1985 meeting in Sophia-Antipolis. Six invited lectures were given, by S. Correa (USA), T. Fujiwara (Japan), A. Ghoniem (USA), B. Larrouturou (France), M. Smooke (USA), and F. Williams (USA). The overwhelming consensus of the participants was that this was a valuable, high quality meeting, and the pattern of holding such a meeting every two years, alternating between the United States, and Europe should be continued.

14. SUBJECT TERMS

15. NUMBER OF PAGES
1

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT
UNCLASSIFIED

18. SECURITY CLASSIFICATION OF THIS PAGE
UNCLASSIFIED

19. SECURITY CLASSIFICATION OF ABSTRACT
UNCLASSIFIED

20. LIMITATION OF ABSTRACT
SAR

FINAL TECHNICAL REPORT AFOSR-TR- 92 04 11

Fourth International Conference on Numerical Combustion

December 2-4, 1991
St. Petersburg, Florida

The Fourth International Conference on Numerical Combustion was held on December 2-4, 1991, in St. Petersburg, Florida. It was a sequel to the 1989 meeting in Antibe, the 1987 meeting in San Francisco, and the 1985 meeting in Sophia-Antipolis.

Six invited lectures were given, by S. Correa (USA), T. Fujiwara (Japan). A. Ghoniem (USA), B. Larrouturou (France), M. Smooke (USA), and F. Williams (USA).

A number of minisymposia were organized, some at the behest of the organizing committee, some proposed by the community. A minisymposium is a two-hour time slot donated to a person (typically not on the organizing committee) who defines a program addressing a well defined theme. Typically the program consists of four talks. The following themes were addressed: Simulations Specialized to Reveal Combustion Essentials; Reduced Mechanisms for Combustion Calculations; Japanese Numerical Combustion; Mathematical Modeling of Fires; Computational and Theoretical Approaches to Supersonic Reacting Flows; Numerics and Asymptotics, A Symbiotic Approach to Detonation Physics; Modeling and Simulation of Time-Dependent Combustion Phenomena; Droplet and Spray Analysis; Numerics and Asymptotics, Some Basic Models in High Speed Propulsion; Comparison of Numerical Methods for Detonation Simulations and Turbulent Combustion.

Participants from the U.S., Germany, England, Japan, and France contributed to the minisymposia. The one devoted to detonation simulations, organized by D. Scott Stewart, is of particular notice as it brought together all the major players in the current effort to develop more powerful codes than hitherto used for this problem.

The remainder of the program was devoted to contributed papers, of which there were 21 sessions, with a total of 88 presenters. The subjects covered were: Droplets and Sprays; Ignition; Modeling and Algorithms; Detonations; Multiphase Combustion; Laminar Diffusion Flames; Turbulence; Laminar Premixed Flames; and Supersonic Combustion.

Overall attendance was 178. A goal of this meeting, as in the previous meeting sponsored by SIAM in 1987, was to attract not only the leading computational experts in combustion, but also applied mathematicians engaged in combustion modeling, on the grounds that it is useful to encourage collaboration between these two groups. This goal was achieved. As noted by the Japanese participants especially, the emphasis was on numerical work founded on sound physics -- the scientific approach to large-scale computing -- and it is precisely in defining the nature of these physical ingredients that modelers can play a vital role (e.g. the incorporation of laminar flame sheet concepts into turbulent calculations).

The overwhelming consensus of the participants was that this was a valuable, high quality meeting, and the pattern of holding such a meeting every two years, alternating between the United States and Europe, should be continued.

John Buckmaster
Conference Co-chair

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