

# BOOK REVIEWS

## Near-Wall Turbulence

S. J. Kline and N. H. Afgan, Editors  
Hemisphere Publishing Corp., 1989,  
£89.00

This substantial volume contains the proceedings of a conference held in Dubrovnik in May 1988 in memory of Professor Zoran Zarić of the Boris Kidrić Institute in Belgrade. In the course of his career, Zarić himself made several notable contributions to the understanding of wall turbulence while his kindness and his sunny personality made him a host of friends among the international community. Thus Dubrovnik in May – as cheerful a spot as can be imagined – provided a particularly appropriate venue for the meeting.

The conference program, masterminded by S. J. Kline, was organized around nine separate topic areas, each coordinated by an expert in the area in question who, in addition to providing a summary article, invited other papers on related themes that gave a more detailed account of research topics in particular areas. All papers in the volume were thus invited articles, and it is probably this feature that gives the volume a cohesiveness that is absent from the usual conference proceedings. The nine theme areas and their respective coordinators were:

- Large eddy and full simulations – Parviz Moin
- Effects of extra strains and force fields – Peter Bradshaw
- Quasi-Coherent Structures – Steve Kline
- Pressure fluctuations and related near-wall effects – Helmut Eckelmann
- Information derivable from correlation measurements – Ron Adrian and R. Dumas
- Information derivable from heat-transfer data – E. M. Khabakhpasheva
- Analytical theories of turbulence – John Lumley
- Practical predictions by two-equation and other fast methods – Kemal Hanjalić
- Instrumentation methods in wall turbulence – William Tiederman

There is a good deal of coupling between the separate themes as one would hope in as narrowly a focused volume as this one. Of the many striking inclusions among the 56 papers forming the volume, the most eye-catching are

without question the twelve pages of color photographs from the article by Steve Robinson and colleagues in which Spalart's direct numerical simulation data of the flat plate boundary layer are creatively processed with the help of high level color-graphics software to reveal fascinating structural forms in the near-wall layer. The papers as a whole form a collection of high quality that provides a fitting memorial to Professor Zarić. It is certainly a volume that every serious research group in wall turbulence should endeavour to have access to though its high cost will inevitably mean that few will be able to justify purchasing personal copies. As a minor quibble, a memorial volume of nearly 1000 pages surely merited a more comprehensive biographical account of the professional life of Zoran Zarić than is attempted here. The reader seeking to learn more may refer to D. B. Spalding's affectionate tribute in *Int. J. Heat Mass Transfer*, vol. 29, December 1986.

B. E. Launder

## Proceedings of the Ninth International Heat Transfer Conference, Jerusalem, Israel.

Six volumes  
G. Hetsroni, Ed.  
Hemisphere Publishing Corp., 1990

These proceedings, like their predecessors, furnish an enormous amount of information on heat transfer research conducted throughout the world. As noted in the preface, this conference attracted an increased number of papers from the Far East, indicating a broadening vitality for the field of heat transfer.

The proceedings begin with a plenary paper by R. J. Goldstein on "Count Rumford and the Art and Science of Heat Transfer". This paper is followed by 27 keynote lectures on various subjects in heat transfer that occupy the remaining 473 pages of volume 1. Some 422 conference papers are presented in the final five volumes and occupy about 2500 pages. It would be impossible to review all these papers, but the balance among topics is very good.

The overall flavor of the proceedings may be seen by listing the general subject areas and pages devoted to them as

follows: Boiling, Critical Heat Flux and Post Critical Heat Flux, 160 pages; Natural Convection (two sections), 243 pages; Cooling of Electronics, 70 pages; Mixed Convection (two sections), 263 pages; Phase Change (two sections), 233 pages; Modeling of Components and Measurements, 141 pages; Heat Transfer Augmentation, 126 pages; Jets, Flames, and Combustion, 91 pages; Industrial and Process Heat Transfer, 131 pages; Heat Exchangers, 148 pages; Particulates and Porous Media, 138 pages; Mixed Convection and Transport Phenomena, 138 pages; Conduction and Insulation, 107 pages; Energy, Cooling and Heating systems, 132 pages; Films, Microgravity and Special Applications, 126 pages; and Radiation, 78 pages.

These proceedings certainly belong in any academic or industrial library that serves persons engaged in current heat transfer research.

Jack Holman

## Books received but not reviewed

*Wing Theory*, by R. T. Jones, Princeton University Press, 216 pp., \$35.00

*Physical Properties of Rocks and Minerals*, edited by Y. S. Touloukian, W. R. Judd, and R. F. Roy, 548 pp., \$95.00

*Basic Heat Transfer*, by D. H. Bacon, Butterworths, 172 pp., \$21.95

*Moving Heat Sources in Thermoelasticity*, by T. Roznowski, Ellis Horwood Limited, 139 pp.

*Transient Flow in Pipes, Open Channels and Sewers*, by J. A. Fox, Ellis Horwood Limited, 284 pp., £55

*NDE Handbook*, edited by K. G. Boving, Butterworths, 418 pp., \$95.00

*Hypersonic, Vol. 1: Defining the hypersonic environment*, J. J. Bertin, R. Glowinski, and J. Periaux, Eds., Birkhauser, 547 pp., \$80.00

*Hypersonic, Vol. 2: Computation and measurement of hypersonic flows*, J. J. Bertin, R. Glowinski, and J. Periaux, Eds., Birkhauser, 459 pp., \$80.00

*Thermofluid-Dynamics of Optimized Rocket Propulsions*, Birkhauser, 270 pp., \$95.00