

# Book Review

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## ***Advances in Turbulence IV***

F. T. M. Nieuwstadt (ed.), Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993, 571 pp. \$186.50.

These European Turbulence Conference (ETC) proceedings are bound as an attractive, well-organized and dense tome. The contributions are grouped under the following chapter headings:

- I. Dynamical Systems and Transition (14)
- II. Statistical Physics and Turbulence (8)
- III. Experiments and Novel Experimental Techniques (19)
- IV. Particles and Bubbles in Turbulence (6)
- V. Simulation Methods (13)
- VI. Coherent Structures (14)
- VII. Turbulence Modelling and Compressibility Effects (13)

The number of six-page papers for each chapter is in parentheses.

The majority of the papers are as one would expect for a conference with "Turbulence" in the title. These cover a wide range of topics, including numerical (e.g., Eggels, et al., "DNS of Turbulent Pipe Flow"), modeling (e.g., Landahl, "Near Wall Model for Boundary Layer Analysis"), analytical (e.g., Lewalle, "Wavelet Transforms of the Navier-Stokes Equation and the Generalized Dimensions of Turbulence"), and experimental (e.g., Gründel and Fiedler, "The Mixing Layer Between Non-Parallel Streams") studies.

Contrary to the usual practice, the organizers elected to accept a number of contributions that might not otherwise be expected in a conference on "conventional" turbulence. For example, in Chapter 1 there is a contribution by Bosch and van de Water entitled "Spatiotem-

poral Chaos in the Faraday Effect" while Chapter II includes "Direct Simulation of Fluid Flow with Cellular Automata and the Lattice-Boltzmann Equation" by Somers. Chapters III, V, VI and VII are characterized by papers that certainly fit the theme of such a conference. Chapter IV provides a two-phase extension to the core subjects.

This fourth in the biannual series of the ETC proceedings sustains the broad interests and overall quality of what can be considered to be primarily a report on European work in the general subject area. Specifically, there is a suggestion that the word "European" of the conference title was somewhat more important than "turbulence" in the selection of papers for inclusion in the conference and, hence, in this volume.

The breadth of topics covered in this single volume makes it unlikely that it would be seen as "good value for money" by a single investigator even though the individual papers are seemingly of high quality in the diverse areas represented by the conference. Conversely, it should be part of a library's holdings that wishes to serve its clients in the topical areas described above. The papers included in this publication, as would be typical of such conference proceedings, appear to be incremental (but nonetheless valuable) contributions by the various investigators. This follows the pattern that the seminal or leading publications in a given area would ultimately appear in an archival journal.

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