

topics are easily located. The information provided is in readily usable form, though for specific needs some digging may be required, as would be expected. While not suitable for pleasure reading, the book reads well and is not unduly difficult to follow. The quality of printing and reproduction of figures is superb. No obvious errors were detected in reading through the book.

M. Crawford

### **Turbulence and random processes in fluid mechanics**

M. T. Landahl and  
E. Mollo-Christensen

Cambridge University Press, \$17.95,  
154 pp.

This slim paperback volume covers a vast territory, inevitably not very deeply. The book has evolved over a period of twenty years from lecture notes developed for a graduate course of the same title taught by the authors at the Massachusetts Institute of Technology. It is written in a pleasant, accessible style that makes it as suitable for private study as it is for a companion to a course of lectures.

The first three brief chapters provide an introduction, a discussion of scales and the basic equations. Chapter 4, Statistical Tools for Description of Turbulence, contains a surprising albeit welcome amount of material for a monograph of its size and range. Chapter 5, Examples of Homogeneous Turbulent Flows, by contrast is narrow in scope, while Chapter 6 (Waves) and 7 (Instability and

Transition to Turbulence) provide fresh treatments of complex subjects. The section on universality in transition to chaos in Chapter 7 provides a well-handled introduction to a rapidly developing field, not to be found in most other texts. The subsequent chapters on Shear Flow Turbulence Structure (8), Turbulence Modeling and Closure Schemes (9), Aerodynamic Noise (10), and Convective Transport (11) are so brief as to provide only a flavor.

Workers with an interest in the fundamentals of turbulence or, more widely, statistical mechanics will find this inexpensive book a welcome addition to their bookshelves.

B. E. Launder

### **Engineering principles and concepts for active solar systems**

Solar Energy Research Institute  
Hemisphere Publishing, 1988, \$49.50  
(U.S. and Canada), 295 pp.

This practical handbook of information for those working with active solar heating and solar hot water systems contains a wealth of detailed practical knowledge garnered from Solar Energy Research Institute research and programs. It is an update of the work previously published in 1987 as the *Solar Design Workbook*. Its purpose is to "... distill in these pages the wealth of solar energy design information accumulated over the years by the U.S. Department of Energy." The book succeeds very well in carrying out this goal.

The book's thirteen chapters are gathered into three parts: Fundamental, Active Solar System Design and Sizing; and Active Solar System Installation, Construction and Operation.

Within these sections, individual chapters provide designers and installers of active systems with descriptions of load calculations; descriptions of the components of active systems and necessary subsystems; fundamentals of solar energy, climate, and details of human comfort and how it is affected by temperature, humidity, ambient air velocity, and mean radiant temperature; details of design, sizing, installation, and construction; costing; collector specification and pre-bidding; startup and acceptance testing; development of operations and maintenance manuals; instrumentation and performance monitoring; and system construction-cost estimation.

The book contains information that is gathered from a variety of sources. Little of it has not been previously published, but to have it in one volume makes it a very valuable resource for anyone active in practical solar heating or DHW applications.

The book is nicely bound in hardcover; however, the review copy had about 20 percent of the pages uncut and a few pasted together with binding glue, which made for minor irritation in searching for particular information.

Jack Howell

## **Books Received But Not Reviewed**

*Heat Conduction* (Second Edition), by  
S. Kakac and Y. Yener

*Soviet Technology Reviews*, Section B,  
*Thermal Physics Reviews*, volume 1,  
edited by A. E. Scheindlin and  
V. E. Fortov

*Current Research in Heat and Mass  
Transfer*, Festschrift for Professor  
Ramachandran, edited by M. V. Krishna  
Murthy, V.M. Krishna Sastri, P. K.  
Sarma and S. P. Sukhatme

*Heat Exchanger Design Handbook*,  
supplement 4, edited by E. Y. Schlunder

*Particulate Phenomena and Multiphase  
Transport*, volumes 1-5, edited by T. N.  
Veziroglu

*Coal Liquid Mixtures*, Proceedings of the  
Third European Conference, edited by T.  
J. Pierce

*Fluid Mixing III*, edited by N. Harnby

*Distillation and Absorption*, two volume  
set, edited by G. G. Haselden