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BOOK REVIEWS

A Physical Introduction to Fluid Mechanics. By A. J. Smits. Wiley, 2002. 527 pp. ISBN 0 471 2534 99. £41.95

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Overall I found this book to be a very useful addition to the existing introductory texts in fluid mechanics. The approach to the subject is strongly rooted in physical understanding of the mechanisms and phenomena involved. I believe this is an important strength of the book. The layout is generally clear with each concept illustrated by straightforward worked examples and with important equations and concepts highlighted within the text. There is also an emphasis throughout the early chapters of the book on the dimensions of quantities as they appear. This leads nicely into the dimensional analysis later on. Another useful feature is the historical section near the end describing the background and lives of some of the important figures in the subject. This section is referred to throughout the book as the names of these pioneers arise. This is a good way of motivating interest and helping students to link names to theorems and quantities.

I have only two minor criticisms of the text. The first is that, while the author has made every effort to provide a consistent logical approach to dimensional analysis through the use of matrices, I am not sure that undergraduates will find it particularly appealing or straight-forward. That being said, I welcome the presentation of alternatives to the much-repeated traditional approach, and other readers may find it more illuminating. The author does take pains to emphasize that much dimensional analysis is performed using physical insight rather than a blind algorithmic approach of any sort.

The second minor criticism is that boundary layer separation is not dealt with in sufficient detail. While there is some useful discussion in the text, the book would have benefited from a few (traditional?) diagrams showing boundary layer profiles as they approach separation and illustrating how lateral momentum transfer delays separation in turbulent boundary layers. Since separation is important in explaining drag of bluff bodies, I think it deserves a more detailed, treatment.

Despite those two minor criticisms, I believe that any lecturer or student in the subject will find the text useful and certainly worth considering, either as the basis of a course, or an additional recommended text for an existing course.

T. Nickels

SHORT NOTICE

Annual Review of Fluid Mechanics, vol. 35. Edited by J. L. LUMLEY, S. H. DAVIS & P. MOIN. Annual Reviews, 2003. 565 pp. ISBN 0-8243-0735-6. Institutions: $160 (print or online only) or $195 (print and online); Individuals $70 (print and online).
J. Fluid Mech. (2003), *vol.* 000. DOI: 10.1017/S0022112003224915

This is a list of the chapter titles and authors for the current volume of this periodical.

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