CAMBRIDGE

Now in paperback Colloidal Dispersions

R. B. RUSSEL, D. A. SAVILLE and

W. R. SCHOWALTER This book covers the physical side of colloid science from the individual forces acting between micrometer-sized particles suspended in a liquid,

through the resulting equilibrium and dynamical properties.

£24.95 net PB 0 521 42600 6 544 pp. 1992 Cambridge Monographs on Mechanics and Applied Mathematics

Comparison of Statistical Experiments

ERIK TORGERSEN

This book is devoted to the various methods of comparing statistical experiments, it is essentially self-contained, requiring only some background in measure theory and functional analysis. A comprehensive treatment of the subject which will be an essential reference for mathematical statisticians.

£65.00 net HB 0 521 25030 7 704 pp. 1991 Encyclopedia of Mathematics and its Applications 36

Integral Equations and Applications

C. CORDUNEANU

This book can be used for graduate courses on integral equations, as a reference for researchers, or to describe methods of application of the theory. £50.00 net HB 0 521 34050 2 416 pp. 1991

Perturbation Methods

E. J. HINCH

In this book the author presents the theory and techniques underlying such methods in a manner which will give the text wide appeal to students from a broad range of disciplines.

630.00 net HB 0 521 37310 7 172 pp. 1992 f12.95 net PB 0 521 37897 4 Cambridge Texts in Applied Mathematics

For further information contact Science Publicity at the Cambridge address.

To order any Cambridge book call our 24 hour ordering service on 0223 325970.

Chaotic Behaviour of Deterministic Dissipative Systems

M. MAREK and I. SCHREIBER

This is a graduate text surveying both the theoretical and experimental aspects of deterministic chaos. £45.00 net HB 0 521 32167 0 380 pp. 1991

Now in paperback Perspectives of Nonlinear Dynamics

Volumes 1 and 2

E. ATLEE JACKSON

'Anyone who has tried either to learn or teach nonlinear dynamics from the research texts will be relieved to have an accessible alternative.'

Ian Stewart, *The Times Higher Education Supplement* Volume 1:

£19.95 net PB 0 521 42632 4 528 pp. 1992 Volume 2: £19.95 net PB 0 521 42633 2 630 pp. 1992

Macroscopic Theories of Superfluids

Edited by G. GRIOLI

Based on lectures from a meeting organised by the Accademia Nazionale dei Lincei with contributions from some of the leading researchers in the field. This book will be an invaluable survey for research workers in superfluidity.

£30.00 net HB 0 521 37572 X 224 pp. 1991

Paperback reissue

The Mathematical Theory of Non-Uniform Gases

An Account of the Kinetic Theory of Viscosity, Thermal Conduction and Diffusion in Gases Third Edition

SYDNEY CHAPMAN and T. G. COWLING This reissue presents a detailed account of the mathematical theory of viscosity, thermal conduction and diffusion, based on the solution of the Maxwell–Boltzman equations.

£22.95 net PB 0 521 40844 X 448 pp. 1991



The Edinburgh Building, Cambridge CB2 2RU

INSTRUCTIONS TO AUTHORS

Submission of manuscripts Papers may be submitted to any member of the editorial board. Three copies should be sent; originals of figures should *not* be included until the paper has been accepted. Papers may be submitted electronically by sending a LaTeX file to EJAM@UK.AC.OX.VAX; this file should include the figures (line figures only). Electronic communications can also be used for minor corrections and for messages to the editors.

Layout of manuscripts Papers should be typewritten in double spacing throughout, on one side of the paper. Please avoid footnotes if possible. Papers must begin with an abstract of not more than 300 words, and they should end with a brief concluding section. The SI system of units must be used throughout. There is no formal restriction on length, but the constraint of fitting an integral number of papers into 96 pages means that short papers (20 typed pages or fewer) are likely to appear sooner than long ones.

Illustrations Figures should be drawn in indian ink on good quality white paper. Wherever possible they will be reproduced *with* the author's lettering. A list of captions for figures should be attached separately.

Where appropriate, articles may be illustrated by photographs: high-quality glossy black and white prints are necessary.

References References should be listed in alphabetical order at the end of the main text. Please include the article title in the reference, which should be in the order: author's surname, initials; year in parentheses; article title; journal name, abbreviated in accordance with the *World List of Scientific Periodicals* (4th Edn); volume number (underlined); inclusive page numbers.

Citations in the text Any unambiguous system is acceptable. Three recommended ways of citing a 1992 paper by A. European are: European (1992); European [Eu]; European [7]. In the second case, the reference at the end of the text should be preceded by [Eu], and in the third by [7]. Please note that in the third system, alteration's may lead to wholesale renumbering.

EDITORIAL POLICY

The European Journal of Applied Mathematics aims to publish papers in all areas of applied mathematics, with especial emphasis on the following.

- (i) The exposition of new mathematical ideas relevant to the modelling and analysis of modern technological processes.
- (ii) The development of interesting mathematical methods with broad areas of applicability.

There is no restriction in the areas of applicability or the style of mathematics, although standard mathematical techniques will only be published if they are associated with novel applications or lead to substantial advances in established problem areas.

COPYING

This journal is registered with the Copyright Clearance Center, 27 Congress Street, Salem, MA 01970. Organisations in the USA who are also registered with the C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$5.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0956-7925/92 \$5.00 + .00.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorised to supply single copies of separate articles for private use only.

For all other use, permission should be sought from Cambridge or the American branch of Cambridge University Press.

European Journal of Applied Mathematics

VOLUME 3 · PART 2 · JUNE 1992

CONTENTS

Homoclinic orbits in the dynamic phase-space analogy of an elastic strut	page 97
C. J. AMICK and J. F. TOLAND	
Diffraction of sound by a surface inhomogeneity at a fluid-solid interface	115
R. H. TEW	
The Cahn-Hilliard gradient theory for phase separation with non-smooth free energy. Part II: Numerical analysis	147
J. F. BLOWEY and C. M. ELLIOTT	
On the correctness of a phenomenological model of equilibrium phase transitions in a deformable elastic medium	181
A. M. MEIRMANOV and N. V. SHEMETOV	

© Cambridge University Press 1992 CAMBRIDGE UNIVERSITY PRESS The Pitt Building, Trumpington Street, Cambridge CB2 1RP 40 West 20th Street, New York, NY 10011–4211, USA 10 Stamford Road, Oakleigh, Victoria 3166, Australia

Printed in Great Britain by the University Press, Cambridge