INDEX

Alam, M. & Chikkadi, V. K. Velocity distribution function and correlations in a granular Poiseuille flow, 175–219

Benzi, R., Biferale, L., Fisher, R., Lamb, D. Q. & Toschi, F. Inertial range Eulerian and Lagrangian statistics from numerical simulations of isotropic turbulence, 221–244

Biben, T. *See* Ghigliotti, Biben & Misbah

Biferale, L. *See* Benzi, Biferale, Fisher, Lamb & Toschi

Bijlard, M. J., Oliemans, R. V. A., Portela, L. M. & Ooms, G. Direct numerical simulation analysis of local flow topology in a particle-laden turbulent channel flow, 35–56

Boeck, T. *See* Krasnov, Zikanov, Rossi & Boeck

Bose, S. K. *See* Dey, Nath & Bose

Brandt, L. *See* Schrader, Brandt, Mavriplis & Henningson

Carrasco-Teja, M. & Frigaard, I. A. Non-Newtonian fluid displacements in horizontal narrow eccentric annuli: effects of slow motion of the inner cylinder, 137–173

Chikkadi, V. K. *See* Alam & Chikkadi

Dey, S., Nath, T. K. & Bose, S. K. Submerged wall jets subjected to injection and suction from the wall, 57–97

Dousset, V. & Pothérat, A. Formation mechanism of hairpin vortices in the wake of a truncated square cylinder in a duct, 519–536

Fisher, R. *See* Benzi, Biferale, Fisher, Lamb & Toschi

Frigaard, I. A. *See* Carrasco-Teja & Frigaard

Ghigliotti, G., Biben, T. & Misbah, C. Rheology of a dilute two-dimensional suspension of vesicles, 489–518

Henningson, D. S. *See* Schrader, Brandt, Mavriplis & Henningson

Huang, W.-X. & Sung, H. J. Three-dimensional simulation of a flapping flag in a uniform flow, 301–336

Ijzermans, R. H. A., Meneguz, E. & Reeks, M. W. Segregation of particles in incompressible random flows: singularities, intermittency and random uncorrelated motion, 99–136

Kleinstreuer, C. *See* Shenoy & Kleinstreuer

Krasnov, D., Zikanov, O., Rossi, M. & Boeck, T. Optimal linear growth in magnetohydrodynamic duct flow, 273–299

Krochak, P. J., Olson, J. A. & Martinez, D. M. Near-wall estimates of the concentration and orientation distribution of a semi-dilute rigid fibre suspension in Poiseuille flow, 431–462

Lamb, D. Q. *See* Benzi, Biferale, Fisher, Lamb & Toschi

Mahesh, K. *See* Sau & Mahesh

Mariappan, S. & Sujith, R. I. Thermoacoustic instability in a solid rocket motor: non-normality and nonlinear instabilities, 1–33

Martinez, D. M. *See* Krochak, Olson & Martinez

Mavriplis, C. *See* Schrader, Brandt, Mavriplis & Henningson

Meneguz, E. *See* Ijzermans, Meneguz & Reeks

Misbah, C. *See* Ghigliotti, Biben & Misbah

Nath, T. K. *See* Dey, Nath & Bose

Oliemans, R. V. A. *See* Bijlard, Oliemans, Portela & Ooms

Olson, J. A. *See* Krochak, Olson & Martinez

Ooms, G. *See* Bijlard, Oliemans, Portela & Ooms

Portela, L. M. *See* Bijlard, Oliemans, Portela & Ooms

Pothérat, A. *See* Dousset & Pothérat

Reeks, M. W. *See* Ijzermans, Meneguz & Reeks

Roger, M. On broadband jet–ring interaction noise and aerofoil turbulence-interaction noise predictions, 337–364

Rossi, M. *See* Krasnov, Zikanov, Rossi & Boeck

Sau, R. & Mahesh, K. Optimization of pulsed jets in crossflow, 365–390

Schrader, L.-U., Brandt, L., Mavriplis, C. & Henningson, D. S. Receptivity to free-stream vorticity of flow past a flat plate with elliptic leading edge, 245–271

Shenoy, A. R. & Kleinstreuer, C. Influence of aspect ratio on the dynamics of a freely moving circular disk, 463–487

Sujith, R. I. *See* Mariappan & Sujith

Sung, H. J. *See* Huang & Sung

Toschi, F. *See* Benzi, Biferale, Fisher, Lamb & Toschi

Urzay, J. Asymptotic theory of the elastohydrodynamic adhesion and gliding motion of a solid particle over soft and sticky substrates at low Reynolds numbers, 391–429

Zikanov, O. *See* Krasnov, Zikanov, Rossi & Boeck

CAMBRIDGE

Fantastic New Titles from Cambridge!

Micro- and Nanoscale Fluid Mechanics

Transport in Microfluidic Devices

BRIAN KIRBY

This text was designed with the goal of bringing together several areas that are often taught separately namely, fluid mechanics, electrodynamics, and interfacial chemistry and electrochemistry with a focused goal of preparing the modern microfluidics researcher to analyze and model continuum fluid mechanical systems encountered when working with micro- and nanofabricated devices.

$125.00: Hb: 978-0-521-11903-0: 650 pp.

Gravity-Capillary Free-Surface Flows

JEAN-MARC VANDEN-BROECK

Cambridge Monographs on Mechanics

$110.00: Hb: 978-0-521-81190-3: 325 pp.

Fundamentals of Engineering Numerical Analysis

2nd Edition!

PARVIZ MOIN

This text introduces numerical methods and shows how to develop, analyze, and use them. Complete MATLAB programs are now available at **www.cambridge.org/Moin,** and more than 30 exercises have been added. This thorough and practical book is a first course in numerical analysis for new graduate students in engineering and physical science.

$120.00: Hb: 978-0-521-88432-7: 264 pp.
$59.00: Pb: 978-0-521-71123-4

A Practical Guide to the Invariant Calculus

ELIZABETH LOUISE MANSFIELD

Cambridge Monographs on Applied and Computational Mathematics

$75.00: Hb: 978-0-521-85701-7: 260 pp.

Dynamics of Rotating Machines

MICHAEL I. FRISWELL,
JOHN E. T. PENNY,
SEAMUS D. GARVEY,
ARTHUR W. LEES

This book enables engineers to understand the most important aspects of the vibrations of rotating machines, starting from the most basic explanations and proceeding to more accurate numerical models and analysis. Using this book, and the associated MATLAB software, engineers will quickly gain (or restore) the confidence to base their designs on calculations and to understand any dynamic phenomena that might occur.

Cambridge Aerospace Series

$115.00: Hb: 978-0-521-85016-2: 544 pp.

Now in Paperback!

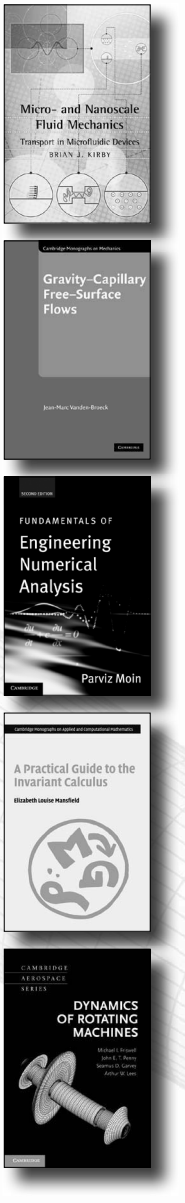
Combustion Physics

CHUNG K. LAW

"Combustion Physics is an excellent text that is comprehensive in coverage, rigorous yet expeditious in the analytical developments, insightful in the physical descriptions, and above all, very readable. It is not only an invaluable reference for combustion researchers, but its emphasis on clarity and logical presentation makes it particularly attractive for classroom adoption for a graduate course on combustion in aerospace, mechanical, or chemical engineering and the physical sciences... The author is to be congratulated for having made this valuable, lasting contribution to combustion literature and education."

–Moshe Matalon, University of Illinois at Urbana-Champaign for AIAA Journal

$80.00: Pb: 978-0-521-15421-5: 744 pp.



Prices subject to change.

www.cambridge.org/us/mathematics
www.cambridge.org/us/engineering
800.872.7423

CAMBRIDGE UNIVERSITY PRESS

653

ISSN 0022-1120

Journal of Fluid Mechanics

25 June 2010

1 Thermoacoustic instability in a solid rocket motor: non-normality and nonlinear instabilities
S. Mariappan & R. I. Sujith

35 Direct numerical simulation analysis of local flow topology in a particle-laden turbulent channel flow
M. J. Bijlard, R. V. A. Oliemans, L. M. Portela & G. Ooms

57 Submerged wall jets subjected to injection and suction from the wall
S. Dey, T. K. Nath & S. K. Bose

99 Segregation of particles in incompressible random flows: singularities, intermittency and random uncorrelated motion
R. H. A. Ijzermans, E. Meneguz & M. W. Reeks

137 Non-Newtonian fluid displacements in horizontal narrow eccentric annuli: effects of slow motion of the inner cylinder
M. Carrasco-Teja & I. A. Frigaard

175 Velocity distribution function and correlations in a granular Poiseuille flow
M. Alam & V. K. Chikkadi

221 Inertial range Eulerian and Lagrangian statistics from numerical simulations of isotropic turbulence
R. Benzi, L. Biferale, R. Fisher, D. Q. Lamb & F. Toschi

245 Receptivity to free-stream vorticity of flow past a flat plate with elliptic leading edge
L.-U. Schrader, L. Brandt, C. Mavriplis & D. S. Henningson

273 Optimal linear growth in magnetohydrodynamic duct flow
D. Krasnov, O. Zikanov, M. Rossi & T. Boeck

301 Three-dimensional simulation of a flapping flag in a uniform flow
W.-X. Huang & H. J. Sung

337 On broadband jet–ring interaction noise and aerofoil turbulence-interaction noise predictions
M. Roger

365 Optimization of pulsed jets in crossflow
R. Sau & K. Mahesh

391 Asymptotic theory of the elastohydrodynamic adhesion and gliding motion of a solid particle over soft and sticky substrates at low Reynolds numbers
J. Urzay

431 Near-wall estimates of the concentration and orientation distribution of a semi-dilute rigid fibre suspension in Poiseuille flow
P. J. Krochak, J. A. Olson & D. M. Martinez

463 Influence of aspect ratio on the dynamics of a freely moving circular disk
A. R. Shenoy & C. Kleinstreuer

489 Rheology of a dilute two-dimensional suspension of vesicles
G. Ghigliotti, T. Biben & C. Misbah

519 Formation mechanism of hairpin vortices in the wake of a truncated square cylinder in a duct
V. Dousset & A. Pothérat

537 CORRIGENDUM

538 ERRATUM

540 INDEX TO VOLUME 653

Cambridge Journals Online
For further information about this journal please go to the journal web site at
journals.cambridge.org/flm

FSC
Mixed Sources
Product group from well-managed forests and other controlled sources
Cert no. SA-COC-1527
www.fsc.org
© 1996 Forest Stewardship Council

CAMBRIDGE UNIVERSITY PRESS