

# Cambridge Core

The new home of  
Cambridge Journals  
[cambridge.org/core](https://cambridge.org/core)

Cambridge Core



# Mathematics

Books and Journals from  
Cambridge University Press

Cambridge is a world leading publisher in pure and applied mathematics, with an extensive programme of high quality books and journals that reaches into every corner of the subject.

Our catalogue reflects not only the breadth of mathematics but also its depth, with titles for undergraduate students, for graduate students, for researchers and for users of mathematics.

We are proud to include world class researchers and influential educators amongst our authors, and also to publish in partnership with leading mathematical societies.

For further details visit:  
**[cambridge.org/core-mathematics](https://cambridge.org/core-mathematics)**

Cambridge  
Core



CAMBRIDGE  
UNIVERSITY PRESS

*cotg u*

*tg u*

*sin u*

T'







- 554 Transient torque in stirred tanks  
**K. Steiros**
- 579 Surfing the edge: using feedback control to find nonlinear solutions  
**A. P. Willis, Y. Duguet, O. Omel'chenko & M. Wolfrum**
- 592 Clean versus contaminated bubbles in a solid-body rotating flow  
**M. Rastello, J.-L. Marié & M. Lance**
- 618 Isolating strain and curvature effects in premixed flame/vortex interactions  
**F. Thiesset, F. Halter, C. Bariki, C. Lapeyre, C. Chauveau, I. Gökalp, L. Selle & T. Poinsot**
- 655 Sedimentation of inertia-less prolate spheroids in homogenous isotropic turbulence with application to non-motile phytoplankton  
**M. Niazi Ardekani, G. Sardina, L. Brandt, L. Karp-Boss, R. N. Bearon & E. A. Variano**
- 675 A numerical investigation of the asymmetric wake mode of a squareback Ahmed body – effect of a base cavity  
**J.-M. Lucas, O. Cadot, V. Herbert, S. Parpais & J. Délery**
- 698 Detailed finer features in spectra of interfacial waves for characterization of a bubble-laden drop  
**U. R. Sumanasekara & S. Bhattacharya**
- 719 Population balance equation for turbulent polydispersed inertial droplets and particles  
**F. Salehi, M. J. Cleary & A. R. Masri**
- 743 Tomographic PIV investigation on 3D wake structures for flow over a wall-mounted short cylinder  
**H.-Y. Zhu, C.-Y. Wang, H.-P. Wang & J.-J. Wang**
- 779 Evaluation of turbulent mixing transition in a shock-driven variable-density flow  
**M. Mohagh, J. Carter, B. Musci, D. Reilly, J. McFarland & D. Ranjan**

### **JFM Rapids (online only)**

- R1 Sloshing in a Hele-Shaw cell: experiments and theory  
**F. Viola, F. Gallaire & B. Dollet**
- R2 How we compute  $N$  matters to estimates of mixing in stratified flows  
**R. S. Arthur, S. K. Venayagamoorthy, J. R. Koseff & O. B. Fringer**
- R3 An unambiguous definition of the Froude number for lee waves in the deep ocean  
**F. T. Mayer & O. B. Fringer**

*S* indicates supplementary data or movies available online.

- 1 On the flow and coherent structures generated by a circular array of rigid emerged cylinders placed in an open channel with flat and deformed bed  
**W.-Y. Chang, G. Constantinescu & W. F. Tsai**
- 41 Direct numerical simulation of turbulence over anisotropic porous media  
**Y. Kuwata & K. Suga**
- 72 Exploring the dynamics of '2P' wakes with reflective symmetry using point vortices  
**S. Basu & M. A. Stremler**
- 101 Added mass: a complex facet of tidal conversion at finite depth  
**C. Brouzet, E. V. Ermanyuk, M. Moulin, G. Pillet & T. Dauxois**
- 128 Complete Hamiltonian formalism for inertial waves in rotating fluids  
**A. A. Gelash, V. S. L'vov & V. E. Zakharov**
- 151 A neural network approach for the blind deconvolution of turbulent flows  
**R. Maulik & O. San**
- S* 182 Prograde, retrograde, and oscillatory modes in rotating Rayleigh–Bénard convection  
**S. Horn & P. J. Schmid**
- 212 Non-local continuum modelling of steady, dense granular heap flows  
**D. Liu & D. L. Henann**
- 228 Boundary element methods for particles and microswimmers in a linear viscoelastic fluid  
**K. Ishimoto & E. A. Gaffney**
- 252 The instability of a moving interface in a narrow tapering channel of finite length  
**J. C. Grenfell-Shaw & A. W. Woods**
- 271 Supersonic flow fields resulting from axisymmetric internal surface curvature  
**A. A. Filippi & B. W. Skews**
- S* 289 Consistent equations for open-channel flows in the smooth turbulent regime with shearing effects  
**G. L. Richard, A. Rambaud & J. P. Vila**
- 330 Velocity profiles, flow structures and scalings in a wide-gap turbulent Taylor–Couette flow  
**A. Froitzheim, S. Merbold & C. Egbers**
- S* 358 Spectral energy cascade in thermoacoustic shock waves  
**P. Gupta, G. Lodato & C. Scalo**
- 394 On the propagation of gravity currents over and through a submerged array of circular cylinders  
**J. Zhou, C. Cenedese, T. Williams, M. Ball, S. K. Venayagamoorthy & R. I. Nokes**
- 418 Transition to turbulence in pulsating pipe flow  
**D. Xu, S. Warnecke, B. Song, X. Ma & B. Hof**
- 433 On the macroscopic modelling of dilute emulsions under flow  
**P. M. Mwasame, N. J. Wagner & A. N. Beris**
- 474 Gas depletion through single gas bubble diffusive growth and its effect on subsequent bubbles  
**Á. Moreno Soto, A. Prosperetti, D. Lohse & D. van der Meer**
- 491 Turbulent horizontal convection under spatially periodic forcing: a regime governed by interior inertia  
**M. G. Rosevear, B. Gayen & R. W. Griffiths**
- 524 Instability wave–streak interactions in a supersonic boundary layer  
**P. Paredes, M. M. Choudhari & F. Li**

Contents continued on inside back cover.