

CAMBRIDGE

JOURNALS

# JFM ARCHIVE

Journal of  
Fluid Mechanics

Digital Archive  
1956–1996

*Vital research from  
the definitive source*

The JFM Digital Archive  
contains every article from the  
first 40 years of the journal,  
scanned and digitised to the  
highest standards.

Please speak to your librarian  
about gaining access.

[journals.cambridge.org/jfm](https://journals.cambridge.org/jfm)



CAMBRIDGE  
UNIVERSITY PRESS

CAMBRIDGE

JOURNALS

**JFM FAST  
TRACK HAS  
EVOLVED**

# JFM RAPIDS

.....

- Faster publication
- Greater visibility for papers
- Freely available to all for the first year

For more information visit

**[journals.cambridge.org/rapids](https://journals.cambridge.org/rapids)**



**CAMBRIDGE  
UNIVERSITY PRESS**

# European Journal of Applied Mathematics

## Co-Editors-in-Chief

S. D. Howison, *University of Oxford, UK*

A. A. Lacey, *DPMMS, Heriot-Watt University, UK*

M. J. Ward, *University of British Columbia, Canada*

Since 2008 *EJAM* surveys have been expanded to cover Applied and Industrial Mathematics. Coverage of the journal has been strengthened in probabilistic applications, while still focusing on those areas of applied mathematics inspired by real-world applications, and at the same time fostering the development of theoretical methods with a broad range of applicability. Survey papers contain reviews of emerging areas of mathematics, either in core areas or with relevance to users in industry and other disciplines. Research papers may be in any area of applied mathematics, with special emphasis on new mathematical ideas, relevant to modelling and analysis in modern science and technology, and the development of interesting mathematical methods of wide applicability.

## Price information

is available at: <http://journals.cambridge.org/ejm>

## Free email alerts

Keep up-to-date with new material – sign up at <http://journals.cambridge.org/ejm-alerts>



## European Journal of Applied Mathematics

is available online at:

<http://journals.cambridge.org/ejm>

## To subscribe contact Customer Services

### in Cambridge:

Phone +44 (0)1223 326070

Fax +44 (0)1223 325150

Email [journals@cambridge.org](mailto:journals@cambridge.org)

### in New York:

Phone +1 (845) 353 7500

Fax +1 (845) 353 4141

Email

[subscriptions\\_newyork@cambridge.org](mailto:subscriptions_newyork@cambridge.org)

For free online content visit:  
<http://journals.cambridge.org/ejm>



**CAMBRIDGE**  
UNIVERSITY PRESS

- 535 On the realizability of pressure–strain closures  
**A. A. Mishra & S. S. Girimaji**
- 561 A two-phase flow model of sediment transport: transition from bedload to suspended load  
**F. Chiodi, P. Claudin & B. Andreotti**
- 582 Wake transition in the flow around a circular cylinder with a splitter plate  
**D. Serson, J. R. Meneghini, B. S. Carmo, E. V. Volpe & R. S. Gioria**
- 603 Evolution of localized disturbances in the elliptic instability  
**Y. Hattori & M. S. bin Marzuki**
- 628 Inertially induced cyclic solutions in thin-film free-surface flows  
**C. M. Groh & M. A. Kelmanson**
- 654 Helicity in the Ekman boundary layer  
**E. Deusebio & E. Lindborg**
- 672 A numerical study of the unstratified and stratified Ekman layer  
**E. Deusebio, G. Brethouwer, P. Schlatter & E. Lindborg**
- 705 Mutual inductance instability of the tip vortices behind a wind turbine  
**S. Sarmast, R. Dadfar, R. F. Mikkelsen, P. Schlatter, S. Ivanell, J. N. Sørensen & D. S. Henningson**

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

- R1 Interfacial instability of thin ferrofluid films under a magnetic field  
**I. Seric, S. Afkhami & L. Kondic**
- R2 Entrainment in plane turbulent pure plumes  
**S. Paillat & E. Kaminski**
- R3 Addendum to ‘Coherent Lagrangian vortices: the black holes of turbulence’  
**G. Haller & F. J. Beron-Vera**
- R4 Turbulent pair dispersion as a continuous-time random walk  
**S. Thalabard, G. Krstulovic & J. Bec**
- R5 Low-dimensional dynamics of a turbulent axisymmetric wake  
**G. Rigas, A. R. Oxlade, A. S. Morgans & J. F. Morrison**
- R6 Spectral eddy viscosity of stratified turbulence  
**S. Remmler & S. Hickel**
- R7 The wave-induced added mass of walking droplets  
**J. W. M. Bush, A. U. Oza & J. Moláček**

S indicates supplementary data or movies available online.

- 1 Forcing of a bottom-mounted circular cylinder by steep regular water waves at finite depth  
**B. T. Paulsen, H. Bredmose, H. B. Bingham & N. G. Jacobsen**
- 35 Direct numerical simulations of hypersonic boundary-layer transition with finite-rate chemistry  
**O. Marxen, G. Iaccarino & T. E. Magin**
- 50 Two-vortex equilibrium in the flow past a flat plate at incidence  
**L. Zannetti & A. Gourjii**
- 62 Receptivity of a swept-wing boundary layer to micron-sized discrete roughness elements  
**H. B. E. Kurz & M. J. Kloker**
- 83 Flow structure on a rotating wing: effect of radius of gyration  
**M. Wolfinger & D. Rockwell**
- 111 On the periodic injection of fluid into, and its extraction from, a confined aquifer  
**P. Dudfield & A. W. Woods**
- 142 Modelling of material pitting from cavitation bubble collapse  
**C.-T. Hsiao, A. Jayaprakash, A. Kapahi, J.-K. Choi & G. L. Chahine**
- 176 Drawing of micro-structured fibres: circular and non-circular tubes  
**Y. M. Stokes, P. Buchak, D. G. Crowdy & H. Eboroff-Heidepriem**
- 204 Buoyant convection from a discrete source in a leaky porous medium  
**M. A. Roes, D. T. Bolster & M. R. Flynn**
- S 230 The singularity expansion method and near-trapping of linear water waves  
**M. H. Meylan & C. J. Fitzgerald**
- S 251 Particle-laden flow down a slope in uniform stratification  
**K. Snow & B. R. Sutherland**
- 274 The centrifugal instability of the boundary-layer flow over slender rotating cones  
**Z. Hussain, S. J. Garrett & S. O. Stephen**
- 294 Third-order structure functions in rotating and stratified turbulence: a comparison between numerical, analytical and observational results  
**E. Deusebio, P. Augier & E. Lindborg**
- 314 Second-order perturbation of global modes and implications for spanwise wavy actuation  
**O. Tammisola, F. Giannetti, V. Citro & M. P. Juniper**
- 336 A wave interaction approach to studying non-modal homogeneous and stratified shear instabilities  
**A. Guha & G. A. Lawrence**
- 365 Internal stresses and breakup of rigid isostatic aggregates in homogeneous and isotropic turbulence  
**J. De Bona, A. S. Lanotte & M. Vanni**
- 397 Ageostrophic instability in rotating, stratified interior vertical shear flows  
**P. Wang, J. C. McWilliams & C. Ménesguen**
- 429 On the Richtmyer–Meshkov instability evolving from a deterministic multimode planar interface  
**V. K. Tritschler, B. J. Olson, S. K. Lele, S. Hickel, X. Y. Hu & N. A. Adams**
- 463 Laboratory experiments on counter-propagating collisions of solitary waves. Part 2. Flow field  
**Y. Chen, E. Zhang & H. Yeh**
- S 485 Taylor bubble rising in a vertical pipe against laminar or turbulent downward flow: symmetric to asymmetric shape transition  
**J. Fabre & B. Figueroa-Espinoza**
- 503 A depth-averaged  $\mu(I)$ -rheology for shallow granular free-surface flows  
**J. M. N. T. Gray & A. N. Edwards**

Contents continued on inside back cover.