

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

For more information visit

journals.cambridge.org/rapids



### **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



#### INSTRUCTIONS FOR CONTRIBUTORS

Editorial policy The journal publishes research papers and survey papers.

Research papers may be in any area of applied mathematics, with especial 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. There is no restriction in the scope or style of mathematics as long as the content is presented to be as accessible as possible to the entire community of mathematicians and mathematical scientists. This applies in particular to the Introduction and conclusion. Standard mathematical techniques will only be published if they are associated with novel applications or lead to substantial advances in established problem areas.

Survey papers aim to bridge the gap between academia and industry by presenting mathematical methods relevant to industry in its broadest sense, ranging from manufacturing to finance, telecommunications to biotechnology, and describing industrial problems of interest to mathematicians. Coverage includes reviews of techniques in relation to industrial application, new problem areas for which mathematical models and techniques are not yet available, comparison of solution methods, and descriptions of modelling approaches.

Submission of manuscripts Submission of a paper is taken to imply that it has not been previously published and that it is not being considered for publication elsewhere. Authors of articles published in the journal assign copyright to Cambridge University Press (with certain rights reserved) and you will receive a copyright assignment form for signature on acceptance of your paper.

Manuscripts for consideration for the European Journal of Applied Mathematics should be submitted electronically as a pdf file, using the <u>Editorial Manager</u> system. The system will allow authors to benefit from faster review and earlier online publication. When and if the paper has been accepted for publication, we will require a pdf file of the accepted version, along with the source files that created it: these should be submitted to the publisher via the Editorial Manager system. Authors who are unable to do so should contact the <u>editorial office</u>.

Details of Style files The LaTeX 2e file ejm.cls and the guide ejm2egui.tex are available via anonymous ftp from the Cambridge University Press site at <a href="mailto:ftp://ftp.cambridge.org/pub/texarchive/journals/latex/ejm-cls.">ftp://ftp.cambridge.org/pub/texarchive/journals/latex/ejm-cls.</a> In case of difficulties obtaining these files, there is a help-line available via e-mail; please contact <a href="mailto:texarchive/journals-latex/ejm-cls.">texarchive/journals-latex/ejm-cls.</a> In case of difficulties obtaining these files, there is a help-line available via e-mail; please contact <a href="mailto:texarchive/journals-latex/ejm-cls.">texarchive/journals-latex/ejm-cls.</a> In case of difficulties obtaining these files, there is a help-line available via e-mail; please contact <a href="mailto:texarchive/journals-latex/ejm-cls.">texarchive/journals-latex/ejm-cls.</a> In case of difficulties obtaining these files, there is a help-line available via e-mail; please contact <a href="mailto:texarchive/journals-latex/ejm-cls.">texarchive/journals-latex/ejm-cls.</a> In case of difficulties obtaining these files, there is a help-line available via e-mail; please contact <a href="mailto:texarchive/journals-latex/ejm-cls.">texarchive/journals-latex/ejm-cls.</a> In the file readment of the second of t

Layout of manuscripts Papers must begin with an abstract of not more than 300 words; at the end of abstract authors must also include up to five 'key subject categories', listed in order of importance, taken from the Mathematics Subject Classification (see <a href="http://www.ams.org/mathscinet/msc/pdfs/classification2010.pdf">http://www.ams.org/mathscinet/msc/pdfs/classification2010.pdf</a>). The paper should end with a brief concluding section. The SI system of units must be used throughout. There is no formal restriction on length.

Figures Figures should be produced and incorporated into the text using a standard \LaTeX compatible package; they will be reproduced \emph{\with} the author's lettering: the preferred typeface is Times. They should be supplied at approximately the size of reproduction (maximum 134 mm  $\times$  180 mm). All figures must be cited in the text; they must include a legend, using the \captaption command, which will in turn generate automatically a number that will be used for the citation.

Colour figures may be published at no charge in the online edition; a charge of £500 for each full page in colour will be levied for authors requesting colour reproduction in the printed version of the journal. All figures and reference to the figures must be equally comprehensible in both colour and greyscale.

Acceptable file types for figures are, EPS, TIFF or high resolution JPEG. In more detail:

Line artwork (graphs)

Format: tif or eps

Colour mode: black and white (also known as 1-bit)

Resolution: 1200 dpi

Combination artwork (line/tone)

Format: tif or eps

Colour mode: grayscale (also known as 8-bit)

Resolution: 800 dpi

Black and white halftone (photographs)

Format: tif

Colour mode: grayscale (also known as 8-bit)

Resolution: 300 dpi

Colour halftone artwork (photographs)

Format: tif

Colour mode: CMYK colour

Resolution: 300 dpi

References and Citations in the text The ejm.cls file supports various citation styles; more details are in the guide. The default is that references are numbered in square brackets. References should be listed in alphabetical order at the end of the main text, within the bibliography environment. Please label each reference and use that label when citing. In this way, citation style will be taken care of automatically. Each reference should include, in the following order: author family name, initials; year in parentheses; article title; journal name (in italic), abbreviated in accordance with the World List of Scientific Periodicals (4th Edn); volume number (in bold); inclusive page numbers. If a book is being cited, then include author family name, initials, year in parentheses, title (in italic), publisher.

*Proof Reading* Typographical or factual errors only may be changed at proof stage. The publisher reserves the right to charge authors for correction of non-typographical errors. No page charge is made.

Incremental Publishing and DOIs

The European Journal of Applied Mathematics now publishes articles incrementally online (at Cambridge Journals Online: journals.cambridge.org) as soon as author corrections have been completed and before they join a printed issue. A new reference has now been added to the first page of the article in the journal catchline. This is the DOI—The Digital Object Identifier. This is a global publishing standard. A unique DOI number is created for each published item. It can be used for citation purposes instead of volume, issue and page numbers. It therefore suits the early citation of articles which are published on the web before they have appeared in a printed issue. http://www.journals.cambridge.org/EJM

Offprints No paper offprints will be supplied. Each author will have access to electronic offprints in pdf form.

#### COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA (www. copyright.com). Organisations in the USA who are also registered with the CCC may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to CCC. This consent does not extend to multiple copying for promotional or commercial purposes.

Organisations authorised by the Copyright Licensing Agency may also copy material subject to the usual conditions.

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

# European Journal of Applied Mathematics

VOLUME 24 · PART 5 · OCTOBER 2013

JOHN LOWENGRUB, EDRISS TITI AND KUN ZHAO

| CONTENTS   |     |
|--|-----|
| The onset of multi-valued solutions of a prescribed mean curvature equation with singular non-linearity        | 631 |
| N. D. BRUBAKER AND A. E. LINDSAY   |     |
| Corrector estimates for the homogenization of a locally periodic medium with areas of low and high diffusivity | 657 |
| A. MUNTEAN AND T. L. VAN NOORDEN   |     |
| Classification of blow-up for Hele-Shaw flow solutions driven by suction                                       | 679 |
| YU-LIN LIN   |     |
| Analysis of a mixture model of tumor growth  | 691 |
|  |     |

and mobility exponent between 3/2 and 3

LORENZO GIACOMELLI, MANUEL V. GNANN AND FELIX OTTO

Finite volume and pseudo-spectral schemes for the fully nonlinear 1D Serre equations

761

DENYS DUTYKH, DIDIER CLAMOND, PAUL MILEWSKI AND DIMITRIOS MITSOTAKIS

Regularity of source-type solutions to the thin-film equation with zero contact angle

Printed in the United Kingdom by Latimer Trend & Co Ltd, Plymouth

Cambridge Journals Online
For further information about this journal please go to the journal website at:
journals.cambridge.org/ejm



MIX
Paper from
responsible sources
FSC® C013436

