## JOURNAL OF THE AUSTRALIAN MATHEMATICAL SOCIETY

Submission of research papers in pure mathematics and statistics is invited under the condition that the paper has not been published and is not being considered for publication anywhere else.

The Journal is seeking articles of more general interest and of moderate length, preferring papers with a good introduction explaining the meaning and value of results. In view of the presssure on space, only papers highly rated by assessors can be accepted.

Authors should submit PDF files of papers to the Journal through our website www.austms. org.au/Publications/Submissions/JAustMS where they will be able to track the progress of their submission. It is also possible to submit the files by emailing a PDF file to jamsed@austms.org.au.

## PREPARATION OF MANUSCRIPTS

1. Papers should be double spaced and have a generous margin. Authors should keep copies of all files.

2. Files must be prepared using LATEX or another variant of TEX, and must not contain definitions of additional commands. A style file can be downloaded by following appropriate links on the Journal website.

3. Each manuscript should include an abstract of no more than 150 words, preferably containing no formulae, a list of keywords, a 2010 Mathematics subject classification, and a short title of no more than 40 characters.

4. For the style of references consult recent issues of the journal. The current usage is either the number referencing [1], [2], [3], or the letter referencing, such as [DS1], [DS2], [DS3] if the authors are N. Dunford and J. T. Schwartz, and the reference is to the 3 volumes of their monograph. In either style, references should be ordered alphabetically by the first author's name. Abbreviations of journal names should follow Mathematical Reviews.

5. Avoid abbreviations such as Thm., Prop., Eq., Ex., iff. In the text do not use the symbols  $\forall, \exists, \Longrightarrow$ and  $\iff$ . For more information about our stylistic requirements, see the Journal website accessible through www.austms.org.au.

6. Graphics should be prepared to professional standards, preferably using Postscript or LATEX drawing facilities. Charges may apply if the typesetters have to recreate a graphics file because the original is not suitable for printing.

**Copying:** This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are 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 of the per-copy fee of \$16.00. This consent does not extend to multiple copying for promotional and commercial purposes. Code 1446-7887/2010 \$16.00.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions. For all other use, permission should be sought from Cambridge or the American branch of Cambridge University Press.

Published by Cambridge University Press for the Australian Mathematical Publishing Association Incorporated. Printed in the United Kingdom at Bell & Bain Ltd, Glasgow.

© 2010 Australian Mathematical Publishing Association Inc.



This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of www.fsc.org Cert.no. TT-COC-002769 751498/88 599656329007901901698861 online by Cambridge University rests Please see www.fsc.org for information.

## **Table of Contents**

Sharp logarithmic derivative estimates with applications to ordinary differential equations in the unit disc	
Chyzhykov, I., Heittokangas, J. & Rättyä, J.	145
The essential spectrum of a perturbed operator arising in two-dimensional magnetohydrodynamics Faierman, M. & Mennicken, R.	169
Smale's problem for critical points on certain two rays Hinkkanen, A. & Kayumov, I.	183
L(n)-hyponormality: a missing bridge between subnormality and paranormality Jung, I. B., Park, S. H. & Stochel, J.	193
Tensor extension properties of $C(K)$ -representations and applications to unconditionality Kriegler, C. & Le Merdy, C.	205
<b>Every shift automorphism variety has an infinite subdirectly irreducible member</b> <i>Owens, K. S.</i>	231
Blow-up of smooth solutions to the Navier–Stokes equations of compressible viscous heat-conducting fluids Tan, Z. & Wang, Y.	239
Morrey spaces and fractional operators Tanaka, H.	247
A note on simultaneous congruences, II: Mordell revised Wooley, T. D.	261
Tetravalent <i>s</i> -transitive graphs of order twice a prime power Zhou, JX. & Feng, YQ.	277

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



**CAMBRIDGE** UNIVERSITY PRESS