

ISSN 0017 0895

# Glasgow Mathematical Journal

Volume 65 Part S1 May 2023



CAMBRIDGE  
UNIVERSITY PRESS

# Glasgow Mathematical Journal

<b>EDITOR-IN-CHIEF:</b>	Dr. B. Owens, School of Mathematics and Statistics, University of Glasgow, UK
<b>SUBJECT EDITORS:</b>	
<b>Algebra</b>	Dr. J. Grabowski, Department of Mathematics & Statistics, Lancaster University, UK
<b>Algebra</b>	Professor V. Mazorchuk, Department of Mathematics, University of Uppsala, Sweden
<b>Algebra</b>	Professor I. Chatterji, Laboratoire de Mathématiques J.A. Dieudonné, University of Nice, France
<b>Algebra</b>	Professor C. M. Roney-Dougal, School of Mathematics and Statistics, University of St. Andrews, UK
<b>Algebraic Geometry</b>	Professor G. Brown, School of Mathematics, University of Warwick, UK
<b>Algebraic Topology</b>	Dr. A. J. Baker, School of Mathematics & Statistics, University of Glasgow, UK
<b>Algebraic Topology</b>	Dr. C. Roitzheim, University of Kent, UK
<b>Analysis</b>	Professor X. Li, School of Mathematics & Statistics, University of Glasgow, UK
<b>Differential Geometry</b>	Professor J. Fine, Université Libre de Bruxelles, Belgium
<b>Geometric Topology</b>	Professor S. Friedl, University of Regensburg, Germany
<b>Mathematical Physics</b>	Dr. M. Hallnäs, Chalmers University of Technology and the University of Gothenburg, Sweden
<b>Number Theory</b>	Professor A. Bartel, University of Glasgow, UK

---

## SUBSCRIPTIONS

*Glasgow Mathematical Journal* (ISSN 0017–0895) is published in January, May and September. Three parts form a volume. The subscription price of volume 65 (2023) (which includes electronic access and postage) is £350 net (USA, Canada and Mexico US\$612). The electronic-only price available to institutional subscribers is £243 (US\$434 in the USA, Canada and Mexico). Single parts cost £118 (USA, Canada and Mexico US\$209) plus postage. Prices include delivery by air where appropriate.

Orders, which must be accompanied by payment, may be sent to any bookseller, subscription agent or direct to the publisher: Cambridge University Press, Journals Fulfillment Department, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK; or in the USA, Canada and Mexico: Cambridge University Press, Journals Fulfillment Department, 1 Liberty Plaza, Floor 20, New York, NY 10006, USA. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan. Application to mail at Periodicals Postage Rates is pending at New York, NY.

## COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA ([www.copyright.com](http://www.copyright.com)). Organizations in the USA who are also registered with 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.

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

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 University Press.

For further information on other Press titles access [cambridge.org/journals](http://cambridge.org/journals).