VOLUME 150



2014

Edited by

J. HEINLOTH Universität Duisburg–Essen E. M. OPDAM University of Amsterdam

B. J. TOTARO UCLA

© Foundation Compositio Mathematica

London Mathematical Society

EDITORIAL BOARD

A. A. BEILINSON University of Chicago, IL, USA

P. BIRAN ETH Zürich, Switzerland

C. BREUIL Université Paris-Sud, Orsay, France

D. CALEGARI University of Chicago, IL, USA

J.-H. EVERTSE University of Leiden, The Netherlands

G. FALTINGS Max-Planck-Institut für Mathematik, Bonn, Germany

D. GAITSGORY Harvard University, Cambridge, MA, USA

J.-M. HWANG Korea Institute for Advanced Study, Seoul, Korea

B. KLEINER Courant Institute of Mathematical Sciences, NY, USA

M. KONTSEVICH Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France

WEN-WEI LI Chinese Academy of Sciences, Beijing, PR China J. A. LURIE Harvard University, Cambridge, MA, USA M. Mustață University of Michigan, Ann Arbor, MI, USA B. C. Ngô University of Chicago, IL, USA P. SARNAK Princeton University, NJ, USA P. Scholze Universität Bonn, Germany **B.** SIEBERT Universität Hamburg, Germany Z. Szabó Princeton University, NJ, USA A. VALETTE Université de Neuchâtel, Switzerland C. VOISIN Université Pierre et Marie Curie, Paris, France B. WILKING Universität Münster, Germany

T. D. WOOLEY University of Bristol, UK



Ownership and Publication of *Compositio Mathematica.* The journal was founded in 1934 and has been owned since 1950 by the Foundation Compositio Mathematica. The Board members of this Dutch foundation are all mathematicians; its President is Prof. G. B. M. van der Geer of the University of Amsterdam. Papers are submitted to the journal's Dutch editorial office, currently based in the Korteweg–de Vries Institute at the University of Amsterdam. Since January 2004, the journal has been published on behalf of the Foundation by the London Mathematical Society (LMS). The LMS is the major British learned Society for mathematics and publishes twelve other journals, five of which are in collaboration with other learned societies. Cambridge University Press prints and distributes *Compositio Mathematica* under agreement with the London Mathematical Society.

For further information concerning the journal's ownership, management and pricing policy, please contact the *Publisher*, Dr Susan Hezlet, at the London Mathematical Society (susan.hezlet@lms.ac.uk).

Submission of Manuscripts. *Compositio Mathematica* prefers the submission of papers in LaTeX; however, papers submitted in TeX, AMSTeX, LAMSTeX and for conventional typesetting can also be accepted.

Guidelines for electronic submission are available from the Compositio Mathematica website at http://www.compositio.nl/compositio.html.

Upon acceptance, the supply of the final version of the paper as a LaTeX file will ensure more rapid publication.

Instructions for the Preparation of Manuscripts can be found on the Compositio Mathematica website at http://www.compositio.nl/compositio.html.

Rights and Permissions. Authors are asked to assign an exclusive licence to the Foundation Compositio Mathematica for the publication of their work. Enquiries regarding rights and permission to reproduce works should be addressed to the *Publisher*, London Mathematical Society, De Morgan House, 57–58 Russell Square, London WC1B 4HS, UK.

Offprints. A URL giving free access to the final published article will be provided free of charge. Offprints can be ordered on the form made available with the page proofs.

Back numbers. Orders for Volume 144 onwards should be sent to Cambridge University Press. Enquiries about previous volumes should be directed to the *Publisher*, London Mathematical Society.

Typeset by Sunrise Setting Ltd, Paignton, UK. Printed in the UK by Bell and Bain Ltd.



Siddarth Sankaran Unitary cycles on Shimura curves and the Shimura lift II	1963–2002
Sug Woo Shin and Nicolas Templier On fields of rationality for automorphic representations	2003–2053
Yuri Prokhorov and Constantin Shramov Jordan property for groups of birational selfmaps	2054–2072
Nikita A. Karpenko and Alexander S. Merkurjev Hermitian forms over quaternion algebras	2073–2094
Yonatan Harpaz, Alexei N. Skorobogatov and Olivier Wittenberg The Hardy–Littlewood conjecture and rational points	2095–2111
Pierre Jammes Spectre et géométrie conforme des variétés compactes à bord	2112–2126
Jeffrey Adams The real Chevalley involution	2127–2142
Matthew Strom Borman and Mark McLean Bounding Lagrangian widths via geodesic paths	2143–2183

© Foundation Compositio Mathematica

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





LONDON MATHEMATICAL SOCIETY