

Journal of ALGEBRAIC GEOMETRY

Vittoria Bussi, Dominic Joyce, and Sven Meinhardt, <i>On motivic vanishing cycles of critical loci</i>	405
R. Pandharipande, A. Pixton, and D. Zvonkine, <i>Tautological relations via r-spin structures</i>	439
Jan Hendrik Bruinier and Martin Möller, <i>Cones of Heegner divisors</i> ..	497
Mauro Porta, <i>GAGA theorems in derived complex geometry</i>	519
Junyan Cao and Andreas H\"oring, <i>A decomposition theorem for projective manifolds with nef anticanonical bundle</i>	567
Ben Moonen, <i>A remark on the Tate conjecture</i>	599

JOURNAL OF ALGEBRAIC GEOMETRY

Editors

- C. BIRKAR
DPMMS
Centre for Mathematical Sciences
University of Cambridge
Wilberforce Road
Cambridge, CB3 0WB, U.K.
- A. BONDAL
Department of Algebraic Geometry
Steklov Mathematical Institute
Russian Academy of Sciences
Gubkina Street 8
Moscow 119991, RUSSIA
- M. GROSS
DPMMS
Centre for Mathematical Sciences
University of Cambridge
Wilberforce Road
Cambridge CB3 0WB, U.K.
- C. HACON
Department of Mathematics
University of Utah
155 South 1400 East, JWB 233
Salt Lake City, UT 84112, U.S.A.
- J. LI
Department of Mathematics
Stanford University
Stanford, CA 94305, U.S.A.
- K. OGUISO
Graduate School of Mathematical
Sciences
The University of Tokyo
3-8-1 Komaba Meguro-ku
Tokyo 153-8914, JAPAN
- T. SAITO
Department of Mathematical Sciences
The University of Tokyo
Komaba, Tokyo 153-8914, JAPAN
- P. SCHNEIDER
University of Muenster
Mathematisches Institut
Einsteinstr. 62
48149 Muenster, GERMANY
- C. SOULÉ
Institut des Hautes Études Scientifiques
35 Route de Chartres
F-91440 Bures-sur-Yvette
FRANCE
- S. S.-T. YAU (Managing Editor)
Department of Mathematical Sciences
Tsinghua University
Beijing 100084, P. R. CHINA

Associate Editors

- S. K. DONALDSON
Simons Center for Geometry
and Physics
State University of New York
Stony Brook, NY 11794, U.S.A.
- G. FALTINGS
Max Planck Institute for Mathematics
Vivatsgasse 7
53111 Bonn, GERMANY
- J. HARRIS
Department of Mathematics
Harvard University
Cambridge, MA 02138, U.S.A.
- I. M. SINGER
Department of Mathematics 2-174
Massachusetts Institute of Technology
Cambridge, MA 02139, U.S.A.

The *Journal of Algebraic Geometry*, published quarterly by University Press, Inc., is devoted to the publication of research papers in algebraic geometry, singularity theory, and related subjects such as number theory, commutative algebra, projective geometry, complex geometry, and geometric topology.

Starting with the 2002 subscription, the *Journal of Algebraic Geometry* is available in both electronic and paper delivery. List price is US\$478 for electronic + paper delivery, US\$443 for electronic only; the price for individuals is US\$198 for electronic + paper delivery, US\$175 for electronic only. If ordering the paper version, add US\$6 for delivery within the United States, US\$13 for delivery outside the United States. Subscription renewals are subject to late fees. See www.ams.org/journal-faq for more information.

Subscriptions and orders should be addressed to the American Mathematical Society, P. O. Box 845904, Boston, MA 02284-5904 USA. Telephone 1-800-321-4267, Fax (401)-331-3842. All orders must be accompanied by payment, and checks should be made payable to the American Mathematical Society. General correspondence and changes of address should be sent to the American Mathematical Society, 201 Charles Street, Providence, RI 02904-2213 USA.

Instructions for submission of manuscripts are given on the inside back cover of this issue.

© 2019 by University Press, Inc. All rights reserved

This journal is indexed in *Science Citation IndexTM-Expanded*, *ISI Alerting ServicesSM*, *CompuMath Citation Index[®]*, *Current Contents[®]/Physical, Chemical & Earth Sciences*.

ISSN 1056-3911 (print); ISSN 1534-7486 (online)

Printed in the United States of America.

⊗ The paper used in this issue is acid-free and falls within the guidelines established to ensure permanence and durability.

INFORMATION FOR AUTHORS

Submission of Manuscripts. All manuscripts should be electronically prepared in $\mathcal{A}\mathcal{M}\mathcal{S}\text{-}\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$. A PDF file of the manuscript should be sent via email to the Managing Editor or to any member of the Editorial Board. Authors are encouraged to submit manuscripts written in English. An abstract of at least one complete sentence and at most 300 words is required for every paper. The *Journal of Algebraic Geometry* offers free worldwide access to the electronic abstracts. All author names must be in First-Middle-Surname order. A manuscript accepted for publication must be typeset by the author(s) in $\mathcal{A}\mathcal{M}\mathcal{S}\text{-}\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$.

Authors should supply email addresses if available and current postal addresses, along with their affiliations, on the last page of the manuscript. To help avoid delays in publication, authors are encouraged to send changes in postal and email addresses to jag-query@ams.org, especially before proof has been sent to authors. Articles are electronically published after proof is returned from authors and before appearing in an issue. Once an article is published electronically, author information, such as postal and email addresses, cannot be updated.

To eliminate unnecessary delay or difficulties in printing, authors may be guided by the book *Mathematics into Type*, updated edition, Amer. Math. Soc., 1999.

Footnotes, except a possible acknowledgment of assistance or financial support on the first page, should be avoided by being incorporated into the text, perhaps parenthetically.

References will be published as submitted. For the best presentation, the list of references must be submitted in alphabetical-chronological order; abbreviations of names of journals and references to books should follow the standard form established by Mathematical Reviews. Abbreviations used in bibliographies are accessible from www.ams.org/msnhtml/serials.pdf. The following references are two typical examples:

- [1] R. Hartshorne, *Algebraic geometry*, Graduate Texts in Mathematics 52, Springer-Verlag, New York, Heidelberg, Berlin, 1977.
- [2] N. Hochster and J. L. Roberts, *Rings of invariants of reductive groups acting on regular rings are Cohen-Macaulay*, Adv. Math. **13** (1974) 115–175.

An $\mathcal{A}\mathcal{M}\mathcal{S}\text{-}\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ author package has been prepared for the convenience of the author. The author package includes instructions for preparing electronic manuscripts, the *AMS Author Handbook*, samples, and a style file. Authors who make use of these style files from the beginning of the writing process will reduce their own effort. Comprehensive instructions on preparing graphics are available starting from www.ams.org/jourhtml/authors.html.

Authors may retrieve an author package for *Journal of Algebraic Geometry* from www.ams.org/jag/jagauthorpac.html. The *AMS Author Handbook* is available in PDF format from the author package link. The author package can also be obtained free of charge by sending email to tech-support@ams.org or from the Publication Division, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2213 USA. When requesting an author package, please specify $\mathcal{A}\mathcal{M}\mathcal{S}\text{-}\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ and the publication in which your paper will appear. Please be sure to include your complete email address.

Immediately after a paper has been accepted for publication, the electronically prepared manuscripts (.tex files) should be submitted via the web at www.ams.org/submit-book-journal/, sent via email to pub-submit@ams.org, or sent on CD to the Electronic Prepress Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2213 USA. When submitting electronic manuscripts via email or CD, please include a message indicating that the paper has been accepted for publication in the *Journal of Algebraic Geometry*. The author should also send one hard copy of the final version of the paper to the Managing Editor.

Proofs. Authors receive only one set of proofs for corrections and will be responsible for the expense of making excessive alterations to the original manuscript during the proof-reading. Authors will be responsible for adjustments made to artwork not provided in camera-ready form.

Offprints. Offprints are provided free of charge in electronic format. A downloadable and printable PDF version of the published article will be available on the AMS website at www.ams.org/myoffprints immediately following each issue's publication date.



1056-3911(201907)28:3;1-A