

THE JOURNAL OF SYMBOLIC LOGIC

Edited by

Philip Welch, *Coordinating Editor*

Matthias Aschenbrenner

Veronica Becher

Enrique Casanovas

Bakhadyr Khoussainov

Jan Krajčiček

Stephan Kreutzer

Colin McLarty

Thomas Strahm

Boban Velickovic

VOLUME 83 • NUMBER 1 • MARCH 2018 • ISSN 0022-4812

Copyright © 2018 by the Association for Symbolic Logic. All rights reserved.
Reproduction by photostat, photo-print, microfilm, or like process by permission only.



PUBLISHED BY CAMBRIDGE UNIVERSITY PRESS FOR
AND ON BEHALF OF THE ASSOCIATION FOR SYMBOLIC LOGIC.

The BULLETIN, the JOURNAL and the REVIEW OF SYMBOLIC LOGIC are the official organs of the Association for Symbolic Logic, an international organization for furthering research in logic and the exchange of ideas among mathematicians, computer scientists, linguists, and others interested in this field. The JOURNAL invites submission of original scholarly work in mathematical logic and its applications.

Editors

Philip Welch (Coordinating Editor)

School of Mathematics, University of Bristol, Clifton, Bristol, BS8 1TW, UK
(P.Welch@bristol.ac.uk);

Matthias Aschenbrenner

Department of Mathematics, University of California, Los Angeles, Box 951555, Los Angeles, CA 90095-1555, USA
(matthias@math.ucla.edu);

Veronica Becher

Departamento de Computación, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Pabellón I, Ciudad Universitaria C1428EGA, Buenos Aires, Argentina
(vbecher@dc.uba.ar);

Enrique Casanovas

Department of Mathematics and Computer Science University of Barcelona Gran Via 585, 08007 Barcelona, Spain
(e.casanovas@ub.edu);

Bakhadyr Khossainov

Department of Computer Science, University of Auckland, Private Bag 92019, Auckland, New Zealand
(bmk@cs.auckland.ac.nz);

Jan Krajíček

Department of Algebra, Faculty of Mathematics and Physics, Sokolovska 83, Prague, CZ-186 75, The Czech Republic
(krajicek@karlin.mff.cuni.cz);

Stephan Kreutzer

Technische Universität Berlin, Institut für Softwaretechnik und Theoretische Informatik, Lehrstuhl für Logik und Semantik, Sekr TEL 7-3, Ernst-Reuter-Platz 7, 10587 Berlin, Germany
(stephan.kreutzer@tu-berlin.de);

Colin McLarty

Department of Philosophy, Case Western Reserve University, Clark Hall, 11130 Bellflower Road, Cleveland, OH 44106-7719, USA
(colin.mclarty@case.edu);

Thomas Strahm

Institut für Informatik, Universität Bern, Neubrückstrasse 10, CH-3012 Bern, Switzerland
(strahm@iam.unibe.ch);

Boban Velickovic

Équipe de Logique Mathématique, Université Paris Diderot – Paris 7, UFR de Mathématiques (case 7012), 2 place Jussieu 75251 Paris, France
(boban@math.univ-paris-diderot.fr).

Manuscripts should be submitted using the ASL's online system at <http://asljournals.org> where instructions directed specifically at using the system can also be found.

Authors should keep a complete copy of their submission and all electronic files from which it was created. They should also consult the more general guidelines for the submission of manuscripts at <http://www.aslonline.org/journals-journal-guide.html>. These instructions include the Association's standards about previous publication and plagiarism as well as information about copyrights and electronic copies of published papers.

No print offprints will be supplied but authors will receive a link to a freely accessible electronic pdf of their published article. Print offprints may be purchased if required.

TABLE OF CONTENTS

Weak squares and very good scales MAXWELL LEVINE	1
Jump operations for Borel graphs ADAM R. DAY and ANDREW S. MARKS.....	13
On cuts in ultraproducts of linear orders II MOHAMMAD GOLSHANI and SAHARON SHELAH.....	29
Dominions and primitive positive functions MIGUEL CAMPERCHOLI.....	40
Strict coherence on many-valued events TOMMASO FLAMINIO, HYKEL HOSNI, and FRANCO MONTAGNA.....	55
A direct proof of Schwichtenberg’s bar recursion closure theorem PAULO OLIVA and SILVIA STEILA	70
The number of atomic models of uncountable theories DOUGLAS ULRICH	84
Degrees of categoricity and spectral dimension NIKOLAY A. BAZHENOV, ISKANDER SH. KALIMULLIN, and MARS M. YAMALEEV	103
On maximal stable quotients of definable groups in <i>NIP</i> theories MIKE HASKEL and ANAND PILLAY	117
The definable (p, q) -theorem for distal theories GARETH BOXALL and CHARLOTTE KESTNER	123
Deciding the chromatic numbers of algebraic hypergraphs JAMES H. SCHMERL	128
ZFC proves that the class of ordinals is not weakly compact for definable classes ALI ENAYAT and JOEL DAVID HAMKINS	146
Compact metrizable structures and classification problems CHRISTIAN ROSENDAL and JOSEPH ZIELINSKI	165
There are no intermediate structures between the group of integers and presburger arithmetic GABRIEL CONANT.....	187
Coherent systems of finite support iterations VERA FISCHER, SY D. FRIEDMAN, DIEGO A. MEJÍA, and DIANA C. MONTOYA	208
Left-orderable computable groups MATTHEW HARRISON-TRAINOR	237
Hierarchies of forcing axioms, the continuum hypothesis and square principles GUNTER FUCHS.....	256
Hierarchies of (virtual) resurrection axioms GUNTER FUCHS.....	283
A computable functor from graphs to fields RUSSELL MILLER, BJORN POONEN, HANS SCHOUTENS, and ALEXANDRA SHLAPENTOKH.....	326

The eightfold way	
JAMES CUMMINGS, SY-DAVID FRIEDMAN, MENACHEM MAGIDOR, ASSAF RINOT, and DIMA SINAPOVA	349
Bounded polynomials and holomorphic mappings between convex subrings of *C	
ADEL KHALFALLAH and SIEGMUND KOSAREW	372
Minimal axiomatic frameworks for definable hyperreals with transfer	
FREDERIK S. HERZBERG, VLADIMIR KANOVEI, MIKHAIL KATZ, and VASSILY LYUBETSKY	385
Weakly 2-randoms and 1-generics in Scott sets	
LINDA BROWN WESTRICK	392