THE JOURNAL OF SYMBOLIC LOGIC



Edited by

Noam Greenberg, Coordinating Editor

Bradd Hart

Jan Krajíček

Stephan Kreutzer

Ya'acov Peterzil

Alasdair Urquhart

Boban Velickovic

Andreas Weiermann

Philip Welch

VOLUME 79 · NUMBER 1 · MARCH 2014 · ISSN 0022-4812

Copyright © 2014 by the Association for Symbolic Logic. All rights reserved. Reproduction by photostat, photo-print, microfilm, or like process by permission only.

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. Articles being submitted for publication in the JOURNAL should be sent to one (and only one) of the following editors:

Noam Greenberg (Coordinating Editor)

School of Mathematics, Statistics and Operations Research, Victoria University of Wellington, PO Box 600, Wellington 6140 New Zealand

(greenberg@msor.vuw.ac.nz);

Bradd Hart

Department of Mathematics & Statistics, McMaster University, 1280 Main Street W., Hamilton, Ontario, Canada L8S 4K1

(hartb@mcmaster.ca);

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);

Ya'acov Peterzil

Department of Mathematics, University of Haifa, Mount Carmel, Haifa, 31905, Israel (kobi@math.haifa.ac.il);

Alasdair Urquhart

Department of Computer Science, Sandford Fleming Building, 10 King's College Rd., University of Toronto, Toronto, Ontario M5S 3G4, Canada

(urquhart@cs.toronto.edu);

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);

Andreas Weiermann

Vakgroep Wiskunde, Ghent University, Krijgslaan 281 – Gebouw S22, B9000 Gent, Belgium (Andreas. Weiermann@UGent.be);

Philip Welch

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

The editors prefer electronic submissions. The preferred formats for electronic submissions are PDF or Postscript but other formats such as Word documents will be accommodated as best as possible. The author should keep a complete copy of the submitted manuscript and the electronic files from which it was created. After the paper is accepted in its final form, an electronic copy will be appreciated and will advance its final publication date.

It is recommended that papers be prepared in IATEX using the ASL's class file, especially for manuscripts having extensive symbolic or mathematical notation. This style file is available from the ASL's website at http://www.aslonline.org; links from that site provide further information about the JOURNAL and about submitting papers for publication.

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

Fields with several commuting derivations, by David Pierce	. 1
Mass problems and initial segment complexity, by W. M. PHILLIP HUDELSON	20
A reduction to the compact case for groups definable in o-minimal structures, by Annalisa Conversano	45
The non-axiomatizability of o-minimality, by ALEX RENNET	54
Universal computably enumerable equivalence relations, by Uri Andrews, Steffen Lempp, Joseph S. Miller, Keng Meng Ng, Luca San Mauro,	
and Andrea Sorbi	60
The strength of Ramsey's Theorem for coloring relatively large sets, by LORENZO CARLUCCI and KONRAD ZDANOWSKI	89
Model-theoretic properties of ultrafilters built by independent families of functions, by M. Malliaris and S. Shelah	103
An independence theorem for NTP, theories, by ITAÏ BEN YAACOV	100
and Artem Chernikov	135
Convexly orderable groups and valued fields, by Joseph Flenner	
and Vincent Guingona	154
The Turing degrees below generics and randoms, by RICHARD A. SHORE	171
Generic stability and stability, by Hans Adler, Enrique Casanovas,	
and Anand Pillay	179
Decidable models of ω -stable theories, by URI ANDREWS	186
The strong tree property at successors of singular cardinals, by	
Laura Fontanella.	193
The neat embedding problem for algebras other than cylindric algebras	
and for infinite dimensions, by Robin Hirsch and Tarek Sayed Ahmed	208
Families of ultrafilters, and homomorphisms on infinite direct product	
algebras, by George M. Bergman	223
A lightface analysis of the differentiability rank, by	
Linda Brown Westrick	240
On ω ₁ -strongly compact cardinals, by Joan Bagaria and Menachem Magidor	266
From A ₁ to D ₅ : Towards a forcing-related classification of relational	200
structures, by Miloš S. Kurilić	279
Decidability of modules over a Bézout domain $D + XQ[X]$ with D a principal ideal domain and Q its field of fractions, by Gena Puninski and Carlo Toffalori	296
A new computation of the Σ -ordinal of $KP\omega$, by Fernando Ferreira	306