THE JOURNAL OF SYMBOLIC LOGIC

Edited by

Enrique Casanovas, *Coordinating Editor* Matthias Aschenbrenner Steve Awodey Veronica Becher Lev Beklemishev Michael Benedikt Damir Dzhafarov Stephen Jackson Hiroshi Sakai Anton Setzer

VOLUME 86 • NUMBER 4 • DECEMBER 2021 • ISSN 0022-4812

Copyright © 2022 by the Association for Symbolic Logic. All rights reserved. Reproduction by photostat, photo-print, microfilm, or like process by permission only.

DL 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

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

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

Steve Awodey Department of Philosophy, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, USA (awodey@cmu.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);

Lev Beklemishev Steklov Mathematical Institute of RAS, Gubkina str. 8, 119991 Moscow, Russia (lbekl@yandex.ru);

Michael Benedikt Department of Computer Science, Oxford University, Wolfson Building, Parks Road, Oxford, OX1 3QD, UK (michael.benedikt@cs.ox.ac.uk);

Damir Dzhafarov Department of Mathematics, University of Connecticut, 341 Mansfield Road U1009, Storrs, CT 06269-1009, USA (damir@math.uconn.edu);

Stephen Jackson Department of Mathematics, University of North Texas, General Academics Building 435, 1155 Union Circle #311430, Denton, TX 76203-5017, USA (stephen.jackson@unt.edu);

Hiroshi Sakai Graduate School of System Informatics, Kobe University, 1-1 Rokkodai-cho, Nada-ku, Kobe, 657-8501, Japan (hsakai@people.kobe-u.ac.jp);

Anton Setzer Department of Computer Science, Swansea University Bay Campus, Fabian Way, Swansea, SA1 8EN, UK (a.g.setzer@swansea.ac.uk).

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

Homotopy model theory	
BRICE HALIMI	.1301
The additive groups of \mathbb{Z} and \mathbb{Q} with predicates for being square-free	
NEER BHARDWAJ and CHIEU-MINH TRAN	. 1324
Reflection ranks and ordinal analysis	
Fedor Pakhomov and James Walsh	. 1350
Generic coding with help and amalgamation failure	
Sy-David Friedman and Dan Hathaway	. 1385
Classifying spaces and the Lascar group	
TIM CAMPION, GREG COUSINS, and JINHE YE	.1396
Maltsev conditions for general congruence meet-semidistributive algebras	
Miroslav Olšák	. 1432
A comparison of various analytic choice principles	
PAUL-ELLIOT ANGLÈS d'AURIAC, and TAKAYUKI KIHARA	.1452
Strongly minimal Steiner systems I: existence	
John Baldwin and Gianluca Paolini	.1486
On the automorphism group of the universal homogeneous meet-tree	
ITAY KAPLAN, TOMASZ RZEPECKI, and DAOUD SINIORA	.1508
Shortening clopen games	
JUAN P. AGUILERA	.1541
The order of reflection	
JUAN P. AGUILERA	.1555
Initial self-embeddings of models of set theory	
Ali Enayat and Zachiri Mckenzie	.1584
Some questions of uniformity in algorithmic randomness	
LAURENT BIENVENU, BARBARA F. CSIMA, and	
Matthew Harrison-Trainor	.1612
$[0, n] \cup \{\omega\}$ is a spectrum of a non-disintegrated flat strongly minimal	
model complete theory in a language with finite signature	
Uri Andrews and Omer Mermelstein	.1632
The reverse mathematics of theorems of Jordan and Lebesgue	
ANDRÉ NIES, MARCUS A. TRIPLETT, and KEITA YOKOYAMA	.1657
$G_{\delta\sigma}$ games and induction on reals	
J. P. Aguilera and P. D. Welch	.1676
The Rudin–Keisler ordering of P-points under $\mathfrak{b} = \mathfrak{c}$	
Andrzej Starosolski	.1691
Scott complexity of countable structures	
RACHAEL ALVIR, NOAM GREENBERG, MATTHEW HARRISON-TRAINOR,	
and Dan Turetsky	.1706
Higher Miller forcing may collapse cardinals	
Heike Mildenberger and Saharon Shelah	.1721