

THE JOURNAL OF SYMBOLIC LOGIC

Edited by

Philip Welch, *Coordinating Editor*

Matthias Aschenbrenner

Veronica Becher

Michael Benedikt

Enrique Casanovas

Stephen Jackson

Bakhadyr Khoussainov

Jan Krajíček

Colin McLarty

Thomas Strahm

VOLUME 84 • NUMBER 1 • MARCH 2019 • ISSN 0022-4812

Copyright © 2019 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);

Michael Benedikt

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

Enrique Casanovas

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

Bakhadyr Khoussainov

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);

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, Neubrückestrasse 10, CH-3012 Bern, Switzerland
(strahm@iam.unibe.ch).

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

An analysis of the models $L[T_{2n}]$ RACHID ATMAI.....	1
Derived models of mice below the least fixpoint of the Solovay sequence DOMINIK ADOLF and GRIGOR SARGSYAN	27
Rank logic is dead, long live rank logic! ERICH GRÄDEL and WIED PAKUSA	54
Amalgamable diagram shapes RUIYUAN CHEN.....	88
Unsound inferences make proofs shorter JUAN P. AGUILERA and MATTHIAS BAAZ	102
Iterating symmetric extensions ASAF KARAGILA.....	123
The Ziegler spectrum of the ring of entire complex valued functions SONIA L'INNOCENTE, FRANÇOISE POINT, GENA PUNINSKI, and CARLO TOFFALORI.....	160
Normal measures on a tall cardinal ARTHUR W. APTER and JAMES CUMMINGS	178
On the inevitability of the consistency operator ANTONIO MONTALBÁN and JAMES WALSH	205
A note on predicative ordinal analysis I: Iterated comprehension and transfinite induction SATO KENTARO	226
Definable minimal collapse functions at arbitrary projective levels VLADIMIR KANOVEI and VASSILY LYUBETSKY	266
Components and minimal normal subgroups of finite and pseudofinite groups JOHN S. WILSON.....	290
Woodin for strong compactness cardinals STAMATIS DIMOPOULOS.....	301
On singular stationarity II (tight stationarity and extenders-based methods) OMER BEN-NERIA	320
On a question of Krajewski's FEDOR PAKHOMOV and ALBERT VISSER	343
Bases and Borel selectors for tall families JAN GREBÍK and CARLOS UZCÁTEGUI	359
Basis theorems for Σ_2^1 -sets CHI TAT CHONG, LIUZHEN WU, and LIANG YU.....	376
A note on NSOP ₁ in one variable NICHOLAS RAMSEY	388
On the interplay between effective notions of randomness and genericity LAURENT BIENVENU and CHRISTOPHER P. PORTER.....	393
Games and Ramsey-like cardinals DAN SAATTRUP NIELSEN and PHILIP WELCH.....	408