## THE JOURNAL OF SYMBOLIC LOGIC

EDITED BY

George Boolos John P. Burgess Stephen A. Cook Herbert B. Enderton Akihiro Kanamori Alexander Kechris Julia Knight Michael Makkai Andre Scedrov Richard A. Shore A. S. Troelstra Johan van Benthem Bas van Fraassen

Consulting Editors:

James Baumgartner Jiří Bečvář Gregory L. Cherlin M. J. Cresswell MATTHEW FOREMAN Sy D. Friedman Saul A. Kripke Gregory Mints J. DONALD MONK Gabriel Sabbagh Scott Soames Alasdair Urquhart

VOLUME 54 · NUMBER 2 · JUNE 1989 ISSN 0022-4812

PUBLISHED QUARTERLY BY THE ASSOCIATION FOR SYMBOLIC LOGIC, INC. WITH SUPPORT FROM ICSU AND FROM INSTITUTIONAL AND CORPORATE MEMBERS

Copyright © 1989 by the Association for Symbolic Logic, Inc. All rights reserved. Reproduction by photostat, photo-print, microfilm, or like process by permission only.

## TABLE OF CONTENTS

On the strength of the interpretation method. By YURI GUREVICH and	
SAHARON SHELAH	305
A jump class of noncappable degrees. By S. B. COOPER	324
Equational logic of partial functions under Kleene equality: a complete and an	Kirt
incomplete set of rules. By ANTHONY ROBINSON	354
The structure of algebraically and existentially closed Stone and double Stone	1.2
algebras. By DAVID M. CLARK	363
A limit on relative genericity in the recursively enumerable sets. By STEFFEN	
LEMPP and THEODORE A. SLAMAN	376
Partially ordered sets and the independence property. By JAMES H. SCHMERL	396
The undecidability of the D <sub>A</sub> -unification problem. By J. SIEKMANN and P.	et (
SZABÓ	402
Undecidable complexity statements in $E_{\mathbf{S}}^{\alpha}$ -arithmetic. By RON SIGAL	415
Definability via enumerations. By IVAN N. SOSKOV	428
Uniformization principles. By ALAN H. MEKLER and SAHARON SHELAH .	441
Random models and the Maslov class. By WARREN GOLDFARB	460
An ideal characterization of Mahlo cardinals. By QI FENG	467
Higher order reflection principles. By M. VICTORIA MARSHALL R	474
Sacks forcing sometimes needs help to produce a minimal upper bound. By	
ROBERT S. LUBARSKY	490
Inclusions et produits de groupes abéliens ordonnés étudiés au premier ordre.	
By FRANÇOISE DELON and FRANÇOIS LUCAS	499
An expansion of $\tilde{F}_p$ . By ZOÉ CHATZIDAKIS	512
Two recursion theoretic characterizations of proof speed-ups. By JAMES S.	S. Ca
ROYER	522
The strong anticupping property for recursively enumerable degrees. By S. B.	mi
COOPER	527
Regressive partitions and Borel diagonalization. By AKIHIRO KANAMORI	540
Recursively enumerable <i>m</i> - and tt-degrees. I: The quantity of <i>m</i> -degrees. By	
R. G. DOWNEY	553
On ideals and stationary reflection. By C. A. JOHNSON	568
On recursion theory in $I\Sigma_1$ . By PETR HAJEK and ANTONIN KUCERA	576
On adding $(\xi)$ to weak equality in combinatory logic. By MARTIN W.	-
BUNDER, J. ROGER HINDLEY, and JONATHAN P. SELDIN	590
Slow growing versus fast growing. By S. S. WAINER	608
Reviews	619
European Summer Meeting of the Association for Symbolic Logic (Logic Collo-	047
quium '87), Granada, Spain, 1987	047
The third Asian conference in mathematical logic, Beijing, 1987	013
Meeting of the Association for Symbolic Logic, East Lansing, Michigan, 1988	679
1988 annual meeting of the Australasian Association for Logic, Ferth, 1988	696
Algebraic logic conference, Budapest, 1988	697
Notices	001

THE JOURNAL OF SYMBOLIC LOGIC is published quarterly, in the months of March, June, September, and December, by the Association for Symbolic Logic, Inc., at 1981 East Locust Street, Pasadena, CA 91107. Second class postage is paid at Pasadena, CA and additional offices. The 1989 annual subscription price is \$120. Postmaster: Send address changes to The Journal of Symbolic Logic, Association for Symbolic Logic, P.O. Box 70557, Pasadena, CA 91117. Business correspondence should be sent to the Secretary-Treasurer of the Association, C. Ward Henson (address below).

Continued on inside back cover