



VOLUME 34, NUMBER 4 FALL 1993

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NOTRE DAME, NOTRE DAME, INDIANA

## NOTRE DAME JOURNAL OF FORMAL LOGIC

**EDITORS:** Michael Detlefsen Anand Pillay BUSINESS MANAGER: Jan Houseman

## VOLUME 34, NUMBER 4, FALL 1993

## CONTENTS

The fibrational formulation of intuitionistic predicate logic I: Completeness according to Gödel, Kripke, and Läuchli, Part 2. By <i>M. Makkai</i>	471
Minimal doxastic logic: Probabilistic and other completeness theorems. By Peter Milne	499
Multimorphisms Over Enumerated Sets. By Andrzej Orlicki	527
Zermelo, reductionism, and the philosophy of mathematics. By R. Gregory Taylor	539
Cut-free modal sequents for normal modal logics. By Claudio Cerrato	564
The Gupta-Belnap systems S <sup>#</sup> and S <sup>*</sup> are not axiomatisable. By <i>Philip Kremer</i>	583
A parity-based Frege proof for the symmetric pigionhole principle. By Steve Firebaugh	597
BREAKUP: A preprocessing algorithm for satisfiability testing of CNF formulas. By <i>Robert Cowen</i> and <i>Katherine Wyatt</i>	602
Argument deletion without events. By Paul R. Graves	607
Consequential implication: A correction. By Claudio Pizzi	621
Volume 34 contents	627

Notre Dame Journal of Formal Logic is published quarterly by the University of Notre Dame in the Winter, Spring, Summer, and Fall of each year. The Journal is composed by Beljan, Ltd., Dexter, Michigan and printed by Cushing-Malloy, Inc., Ann Arbor, Michigan. Second-class postage paid at Notre Dame, Indiana 46556.

Subscriptions are \$45.00 per year for institutions and \$25.00 for individuals. Back volumes are \$20.00 each for Volumes 1–10, \$40.00 each for Volumes 11–30, and \$45.00 each for Volumes 31–34. Orders for subscriptions and back volumes (accompanied by payment) and changes of address should be sent to the *Business Manager, P.O. Box 5, Notre Dame, Indiana 46556, U.S.A.* 

Copyright  $\textcircled{\sc c}$  1993 by the University of Notre Dame. All rights reserved. Coden: NDJFAM.

Notre Dame Journal of Formal Logic ...... (ISSN 0029-4527)