

Review of
**ROBERT GOLDBLATT, *MATHEMATICS OF
MODALITY***

Stanford: CSLI Publications, 1993

CSLI Lecture Notes No. 43

273 pp. ISBN 1-881526-24-0 (cloth) or ISBN 1-881526-23-2 (paper)

WIM RUITENBURG

The author collects a total of 11 of his papers on modal logic into the 11 chapters of this publication. Of these, 8 essentially are mildly edited conversions into L^AT_EX of previously published papers. Of the other three papers, chapter 8 is a significant extension of a previous paper on the “Henkin method”. Chapter 9 on infinitary rules of inference is new; and so is chapter 11, which covers certain relationships between modal logic and first-order logic. First let us have a quick overview of the chapters.

Chapter 1, entitled *Metamathematics of Modal Logic*, originally appeared in two parts as [5, 6]. For their Mathematical Reviews, see 58 #27331a and b. It is a slightly expanded version of the author’s PhD thesis. This well-written paper still is a significantly up-to-date introduction to propositional modal logic and Kripke model theory.

Chapters 2 and 3, entitled *Semantic Analysis of Orthologic* and *Orthomodularity is Not Elementary* respectively, originally appeared as [4, 11]. Their Mathematical Reviews numbers are 55 #5398 and 85e:03154.

Chapter 4, entitled *Arithmetical Necessity, Provability and Intuitionistic Logic*, originally appeared as [7]. Its Mathematical Reviews number is 80h:03026.

Chapter 5, entitled *Diodorean Modality in Minkowski Spacetime*, originally appeared as [8], and its Mathematical Reviews number is 82a:03018.

Chapter 6, entitled *Grothendieck Topology as Geometric Modality*, originally appeared as [9]. Its Mathematical Reviews number is 83d:03069.

Chapter 7, entitled *The Semantics of Hoare’s Iteration Rule*, originally appeared as [10]. Its Mathematical Reviews number is 85i:03086.