数理逻辑



数理逻辑 下载链接1

著者:艾宾浩斯 (Ebbinghaus H.D.)

出版者:世界图书出版公司

出版时间:2008-5

装帧:平装

isbn:9787506292276

《数理逻辑(第2版)》主要内容: What is a mathematical proof? How can proofs be justified? Are there limitations to provability? To what extent can machines carry out mathematical proofs? Only in this century has there been success in obtaining substantial and satisfactory answers. The present book contains a systematic discussion of these results. The investigations are centered around first-order logic. Our first goal is' Godel's completeness theorem,which shows that the consequence relation coincides with formal provability: By means of a calculus consisting of simple formal inference rules,one can obtain all consequences of a given axiom system (and in particular,imitate all mathematical proofs)

作者介绍:

目录: Preface PART A I Introduction 1.An Example from Group Theory 2.An Example from the Theory of Equivalence Relations

3.A Preliminary Analysis

4.Preview

II Syntax of First-Order Languages

1.Alphabets

2.The Alphabet of a First-Order Language

3.Terms and Formulas in First-Order Languages

4.Induction in the Calculus of Terms and in the Calculus of Formulas

5.Free Variables and Sentences

III Semantics of First-Order Languages

1.Structures and Interpretations

2.Standardization of Connectives

3.The Satisfaction Relation

4.The Consequence Relation

5.Two Lemmas on the Satisfaction Relation

6. Some simple formalizations

7.Some remarks on Formalizability

8. Substitution

IV A Sequent Calculus

Sequent Rules
Structural Rules and Connective Rules

3. Derivable Connective Rules

4. Quantifier and Equality Rules 5. Further Derivable Rules and Sequents

6. Summary and Example 7. Consistency

V The Completeness Theorem

1. Henkin' S Theorem.

2. Satisfiability of Consistent Sets of Formulas (the Countable Casel

Satisfiability of Consistent Sets of Formulas (the General Case)
The Completeness Theorem

VI The LSwenheim-Skolem and the Compactness Theorem

1. The L6wenheim-Skolem Theorem. 2. The Compactness Theorem

3. Elementary Classes

4. <u>Elementarily Equivalent Structures</u>

VII The Scope of First-Order Logic

1. The Notion of Formal Proof

2. Mathematics Within the Framework of Fimt—Order Logic

3. The Zermelo-Fraenkel Axioms for Set Theory.

4. Set Theory as a Basis for Mathematics

VIII Syntactic Interpretations and Normal Forms

1. Term-Reduce'd Formulas and Relational Symbol Sets

2. Syntactic Interpretations

3. Extensions by Definitions

4. Normal Forms

PART B

IX Extensions of First-order logic

X Limitations of the Formal Method

XI Free Models and Logic Programming

XII An Algebraic Characterization of Elementary Equivalence

X III Lindstrom's Theorems

References

Symbol Index

Subject Index •••••(收起)
数理逻辑_下载链接1_
标签
数理逻辑
数学
逻辑学
逻辑
逻辑-哲学
思维
哲学
计算机软件和理论
评论
非常好的数理逻辑入门,本科数学系大二适用(最好学完抽代)
复习的时候重读才发现真是没有一句废话而且很多很小的细节都照顾得很好。偏数学,不适合单独学习。

对于这本书我只能无奈而又悻悻地说一句:我擦。
 艰难读到Sequent calculus。自勉,要看完

书评

北大以此作为研究生的数理逻辑教材。 邢滔滔老师的《数理逻辑》也脱胎于此。书中详略得当,对于基础一点而过,适合有些逻辑基础的人来学习。

书中的推演系统是矢列演算,这也是我在国内教材中从未见到过的。通过学习以及与公理系统和自然推演系统的对比,可以更有助于整体的...