

# Fine Structure And Class Forcing De Gruyter Serie

Right here, we have countless books **Fine Structure And Class Forcing De Gruyter Serie** and collections to check out. We additionally provide variant types and in addition to type of the books to browse. The enjoyable book, fiction, history, novel, scientific research, as without difficulty as various additional sorts of books are readily clear here.

As this Fine Structure And Class Forcing De Gruyter Serie, it ends occurring innate one of the favored ebook Fine Structure And Class Forcing De Gruyter Serie collections that we have. This is why you remain in the best website to see the unbelievable book to have.

*Fine Structure And Class Forcing De Gruyter Serie*

2021-04-28

## SELINA OCONNELL

*Models, Algebras, and Proofs* American Mathematical Soc. Numbers imitate space, which is of such a different nature —Blaise Pascal It is fair to date the study of the foundation of mathematics back to the ancient Greeks. The urge to understand and systematize the mathematics of the time led Euclid to postulate axioms in an early attempt to put geometry on a firm footing. With roots in the Elements, the distinctive methodology of mathematics has become proof. Inevitably two questions arise: What are proofs? and What assumptions are proofs based on? The first question, traditionally an internal question of the field of logic, was also wrestled with in antiquity. Aristotle gave his famous syllogistic systems, and the Stoics had a nascent propositional logic. This study continued with its starts, through Boethius, the Arabs and the medieval logicians in Paris and London. The early germs of logic emerged in the context of philosophy and theology. The development of analytic geometry, as exemplified by Descartes, illustrated the inherent in founding mathematics. It is classically phrased as the question of how one reconciles the arithmetic with the geometric. Are numbers one type of thing and geometric objects another? What are the relationships between these two types of objects? How can they interact? Discovery of new types of mathematical objects, such as imaginary numbers and, much later, formal objects such as free groups and formal power series make the problem of finding a common playing field for all of mathematics important. Several pressures made foundational issues urgent in the 19th century.

**Centenary of the Borel Conjecture** American Mathematical Soc.

The series is devoted to the publication of high-level monographs on all areas of mathematical logic and its applications. It is addressed to advanced students and research mathematicians, and may also serve as a guide for lectures and for seminars at the graduate level.

*Outer Model Theory and the Definability of Forcing* American Mathematical Soc.

First of two volumes providing a comprehensive guide to mathematical logic.

**Temporal Disorder in Human Oscillatory Systems** World Scientific

This volume covers a wide range of topics in the most recent debates in the philosophy of mathematics, and is dedicated to how semantic, epistemological, ontological and logical issues interact in the attempt to give a satisfactory picture of mathematical knowledge. The essays collected here explore the semantic and epistemic problems raised by different kinds of mathematical objects, by their characterization in terms of axiomatic theories, and by the objectivity of both pure and applied mathematics. They investigate controversial aspects of contemporary theories such as neo-logicist abstractionism, structuralism, or multiversism about sets, by discussing different conceptions of mathematical realism and rival relativistic views on the mathematical universe. They consider fundamental philosophical notions such as set, cardinal number, truth, ground, finiteness and infinity, examining how their informal conceptions can best be captured in formal theories. The philosophy of mathematics is an extremely lively field of inquiry, with extensive reaches in disciplines such as logic and philosophy of logic, semantics, ontology, epistemology, cognitive sciences, as well as history and philosophy of mathematics and science. By bringing together well-known scholars and younger researchers, the essays in this collection – prompted by the meetings of the Italian Network for the Philosophy of Mathematics (FilMat) – show how much valuable research is currently being pursued in this area, and how many roads ahead are still open for promising solutions to long-standing philosophical concerns. Promoted by the Italian Network for the Philosophy of Mathematics – FilMat  
*Mathematical Reviews* CRC Press

This collection documents the work of the Hyperuniverse Project which is a new approach to set-theoretic truth based on justifiable principles and which leads to the resolution of many questions independent from ZFC. The contributions give an overview of the program, illustrate its mathematical content and implications, and also discuss its philosophical assumptions. It will thus be of wide appeal among mathematicians and philosophers with an interest in the foundations of set theory. The Hyperuniverse Project was supported by the John Templeton Foundation from January 2013 until September 2015

*Logic Colloquium '98* Walter de Gruyter GmbH & Co KG

The handbook is divided into four parts: model theory, set theory, recursion theory and proof theory. Each of the four parts begins with a short guide to the chapters that follow. Each chapter is written for non-specialists in the field in question. Mathematicians will find that this book provides them with a unique opportunity to apprise themselves of developments in areas other than their own.

**Trends in Set Theory** American Mathematical Soc.

The papers collected in this volume represent the main body of research arising from the International Munich Centenary Conference in 2001, which commemorated the discovery of the famous Russell Paradox a hundred years ago. The 31 contributions and the introductory essay by the editor were (with two exceptions) all originally written for the volume. The volume serves a twofold purpose, historical and systematic. One focus is on Bertrand Russell's logic and logical philosophy, taking into account the rich sources of the Russell Archives, many of which have become available only recently. The second equally important aim is to present original research in the broad range of foundational studies that draws on both current conceptions and recent technical advances in the above-mentioned fields. The volume contributes therefore, to the well-established body of mathematical philosophy initiated to a large extent by Russell's work.

**Magneto-hydrodynamics of the Sun** Walter de Gruyter

Contains a balanced account of recent advances in set theory, model theory, algebraic logic, and proof theory, originally presented at the Tenth Latin American Symposium on Mathematical Logic held in Bogota, Columbia. Traces new interactions among logic, mathematics, and computer science. Features original research from over 30 well-known experts.  
*Book Review Index* Princeton University Press

This advanced textbook reviews the complex interaction between the Sun's plasma atmosphere and its magnetic field.

*Set Theory* Walter de Gruyter

Max Tegmark leads us on an astonishing journey through past, present and future, and through the physics, astronomy and mathematics that are the foundation of his work, most particularly his hypothesis that our physical reality is a mathematical structure and his theory of the ultimate multiverse. In a dazzling combination of both popular and groundbreaking science, he not only helps us grasp his often mind-boggling theories, but he also shares with us some of the often surprising triumphs and disappointments that have shaped his life as a scientist. Fascinating from first to last—this is a book that has already prompted the attention and admiration of some of the most prominent scientists and mathematicians.

**Ordinal Computability** Walter de Gruyter GmbH & Co KG

Borel's Conjecture entered the mathematics arena in 1919 as an innocuous remark about sets of real numbers in the context of a new covering property introduced by Émile Borel. In the 100 years since, this conjecture has led to a remarkably rich adventure of discovery in mathematics, producing independent results and the discovery of countable support iterated forcing, developments in infinitary game theory, deep connections with infinitary Ramsey Theory, and significant impact on the study of topological groups and topological covering properties. The papers in this volume present a broad introduction to the frontiers of research that has been spurred on by Borel's 1919 conjecture and identify fundamental unanswered research problems in the field. Philosophers of science and historians of mathematics can glean from this collection some of the typical trends in the discovery, innovation, and development of mathematical theories.  
*Simply Definable Well-orderings of the Reals* Springer  
Axiomatic set theory is the concern of this book. More particularly, the authors prove results about the coding of models  $M$ , of Zermelo-Fraenkel set theory together with the Generalized Continuum Hypothesis by using a class 'forcing' construction. By this method they extend  $M$  to another model  $L[a]$  with the same properties.  $L[a]$  is Gödel's universe of 'constructible' sets  $L$ , together with a set of integers  $a$  which code all the cardinality and cofinality structure of  $M$ . Some applications are also considered. Graduate students and research workers in set theory and logic will be especially interested by this account.

**Geometric Set Theory** Springer Science & Business Media

This book introduces a new research direction in set theory: the study of models of set theory with respect to their extensional overlap or disagreement. In Part I, the method is applied to isolate new distinctions between Borel equivalence relations. Part II contains applications to independence results in Zermelo-Fraenkel set theory without Axiom of Choice. The method makes it possible to classify in great detail various paradoxical objects obtained using the Axiom of Choice; the

classifying criterion is a ZF-provable implication between the existence of such objects. The book considers a broad spectrum of objects from analysis, algebra, and combinatorics: ultrafilters, Hamel bases, transcendence bases, colorings of Borel graphs, discontinuous homomorphisms between Polish groups, and many more. The topic is nearly inexhaustible in its variety, and many directions invite further investigation.

**Computability and Complexity** Birkhäuser

This monograph presents recursion theory from a generalized point of view centered on the computational aspects of definability. A major theme is the study of the structures of degrees arising from two key notions of reducibility, the Turing degrees and the hyperdegrees, using techniques and ideas from recursion theory, hyperarithmetic theory, and descriptive set theory. The emphasis is on the interplay between recursion theory and set theory, anchored on the notion of definability. The monograph covers a number of fundamental results in hyperarithmetic theory as well as some recent results on the structure theory of Turing and hyperdegrees. It also features a chapter on the applications of these investigations to higher randomness.

**Abstracts of Papers Presented to the American Mathematical Society** Springer

This Festschrift is published in honor of Rodney G. Downey, eminent logician and computer scientist, surfer and Scottish country dancer, on the occasion of his 60th birthday. The Festschrift contains papers and laudations that showcase the broad and important scientific, leadership and mentoring contributions made by Rod during his distinguished career. The volume contains 42 papers presenting original unpublished research, or expository and survey results in Turing degrees, computably enumerable sets, computable algebra, computable model theory, algorithmic randomness, reverse mathematics, and parameterized complexity, all areas in which Rod Downey has had significant interests and influence. The volume contains several surveys that make the various areas accessible to non-specialists while also including some proofs that illustrate the flavor of the fields.

*The Journal of Symbolic Logic* American Mathematical Society

The book is about strong axioms of infinity (also known as large cardinal axioms) in set theory, and the ongoing search for natural models of these axioms. Assuming the Ultrapower Axiom, we solve various classical problems in set theory (e.g., the Generalized Continuum Hypothesis) and develop a theory of large cardinals that is much clearer than the theory that can be developed using only the standard axioms.

*On War* Cambridge University Press

Explores sets and relations, the natural number sequence and its generalization, extension of natural numbers to real numbers, logic, informal axiomatic mathematics, Boolean algebras, informal axiomatic set theory, several algebraic theories, and 1st-order theories.

*Selected Logic Papers* Cambridge University Press

The Annual European Meeting of the Association for Symbolic Logic, also known as the Logic Colloquium, is among the most prestigious annual meetings in the field. The current volume, Logic Colloquium 2007, with contributions from plenary speakers and selected special session speakers, contains both expository and research papers by some of the best logicians in the world. This volume covers many areas of contemporary logic: model theory, proof theory, set theory, and computer science, as well as philosophical logic, including tutorials on cardinal arithmetic, on Pillay's conjecture, and on automatic structures. This volume will be invaluable for experts as well as those interested in an overview of central contemporary themes in mathematical logic.

**The Hyperuniverse Project and Maximality** Cambridge University Press

The authors prove that it is consistent (relative to a Mahlo cardinal) that all projective sets of reals are Lebesgue measurable, but there is a  $\Delta^1_3$  set without the Baire property. The complexity of the set which provides a counterexample to the Baire property is optimal.

**One Hundred Years of Russell's Paradox** CRC Press

The contents in this volume are based on the program Sets and Computations that was held at the Institute for Mathematical Sciences, National University of Singapore from 30 March until 30 April 2015. This special collection reports on important and recent interactions between the fields of Set Theory and Computation Theory. This includes the new research areas of computational complexity in set theory, randomness beyond the hyperarithmetic, powerful extensions of Goodstein's theorem and the capturing of large fragments of set theory via elementary-recursive structures. Further chapters are concerned with central

topics within Set Theory, including cardinal characteristics, Fraïssé limits, the set-generic multiverse and the study of ideals.

Also Computation Theory, which includes computable group theory and measure-theoretic aspects of Hilbert's Tenth Problem.

A volume of this broad scope will appeal to a wide spectrum of researchers in mathematical logic.