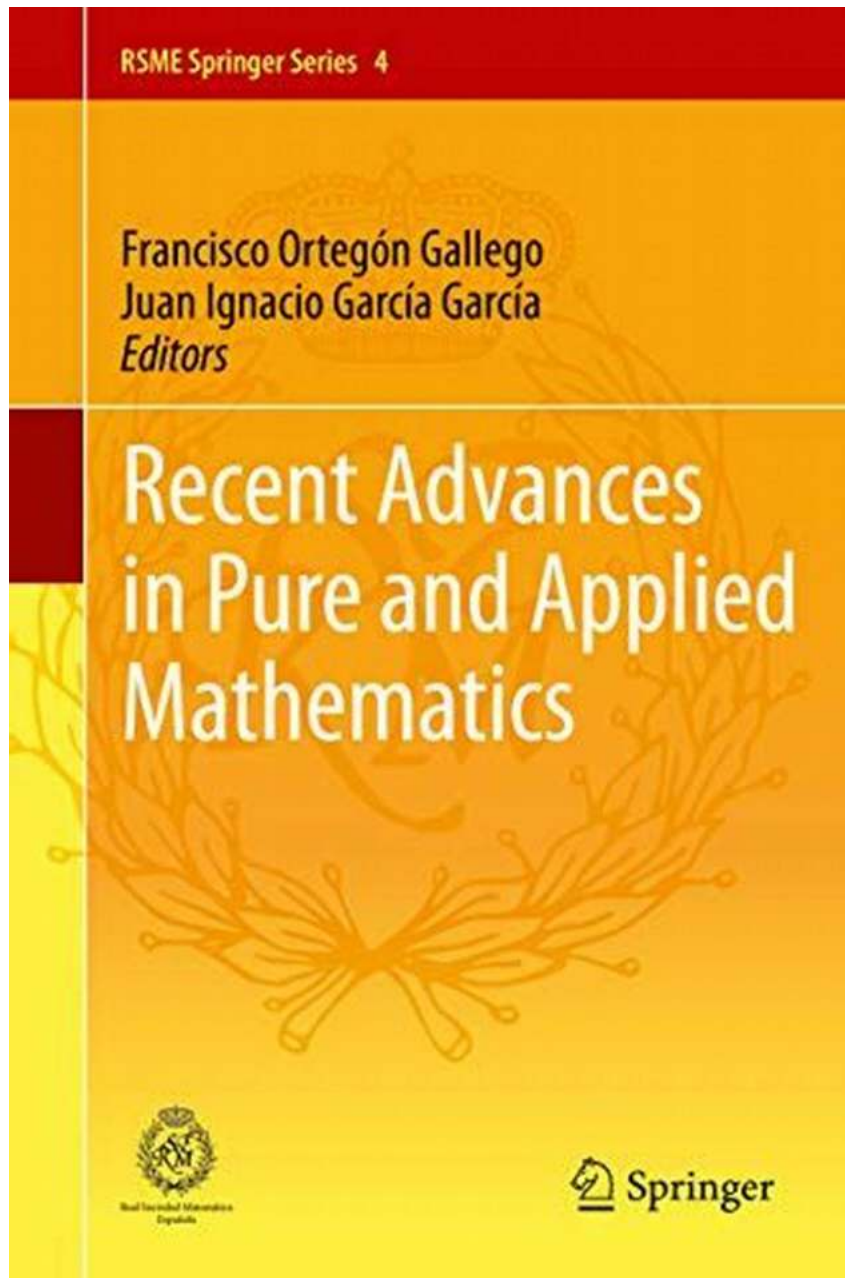


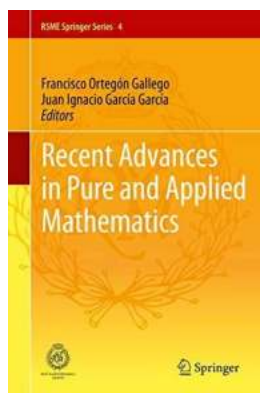
Unveiling the Groundbreaking Discoveries: Recent Advances in Pure and Applied Mathematics Rsme Springer



About RSME

The Real Sociedad Matemática Española (RSME) or the Spanish Mathematical Society, is a prominent organization dedicated to advancing the field of mathematics and promoting its applications. Through its research, publications, conferences, and collaborations, RSME has been at the forefront of groundbreaking discoveries.

Mathematics, often regarded as the language of the universe, is an ever-evolving field. Continuous research and breakthroughs in pure and applied mathematics have paved the way for new insights, solutions, and applications in various domains of science, technology, and everyday life.



Recent Advances in Pure and Applied Mathematics (RSME Springer Series Book 4)

by Massimo Mugnai (1st ed. 2020 Edition, Kindle Edition)

★★★★☆ 4.7 out of 5

Language : English

File size : 5913 KB

Print length : 193 pages

Screen Reader : Supported



Pure Mathematics: Unraveling the Intricacies

Pure mathematics involves exploring abstract concepts and structures, devoid of immediate real-life applications. However, over time, these theoretical frameworks often find practical implications. Recent advancements in pure mathematics have brought forth extraordinary revelations:

Fermat's Last Theorem

In 1994, after centuries of speculation, Andrew Wiles finally proved Fermat's Last Theorem, one of the most famous and long-standing problems in number theory. This theorem stated that no three positive integers a , b , and c can satisfy the equation $a^n + b^n = c^n$ when n is an integer greater than 2. Wiles' proof was an outstanding achievement that demonstrated the power of mathematical reasoning.

Perelman's Proof of the Poincaré Conjecture

In 2003, Grigori Perelman shocked the mathematical community when he presented his proof for the Poincaré Conjecture. This conjecture concerned the 3-dimensional sphere and its distinguishing characteristic, which differentiates it from all other shapes. Perelman's groundbreaking work not only solved the Poincaré Conjecture but also revolutionized our understanding of topology.

Riemann Hypothesis

The Riemann Hypothesis, proposed by Bernhard Riemann in 1859, relates to the distribution of prime numbers. Although it remains unsolved to this day, mathematicians have made significant progress in recent years. Advancements in the field of number theory, algebraic analysis, and complex analysis continue to contribute to our understanding of this enigmatic hypothesis.

Applied Mathematics: Bridging the Gap between Theory and Reality

Applied mathematics focuses on the practical applications of mathematical principles to solve real-world problems. Recent advances in this field have propelled humanity forward in several areas:

Deep Learning and Artificial Intelligence

The rise of deep learning and artificial intelligence has revolutionized the way we interact with technology. Mathematics, especially applied mathematics, plays a

crucial role in developing algorithms, optimization techniques, and statistical models that power these advanced systems. Recent breakthroughs in machine learning, computer vision, and natural language processing owe their foundation to the advancements in applied mathematics.

Cryptocurrency and Blockchain Technology

The advent of cryptocurrencies, led by Bitcoin, has disrupted traditional financial systems. Blockchain technology, the backbone of cryptocurrencies, relies on complex mathematical algorithms to secure transactions and decentralized networks. Cryptography, combinatorics, and game theory have become integral parts of this burgeoning field, ensuring security, decentralization, and efficiency.

Climate Modeling and Predictions

With the growing concerns about climate change, accurate prediction and modeling of weather patterns have become essential. Advanced mathematical models and algorithms enable scientists to analyze climate data, simulate scenarios, and make informed decisions. Recent advances in applied mathematics have significantly improved climate models, aiding in climate change research and policy-making.

The recent advances in pure and applied mathematics, as driven by organizations like RSME, have transformed the way we perceive the world. From solving age-old mathematical problems to revolutionizing diverse fields such as artificial intelligence, cryptocurrency, and climate modeling, mathematics continues to shape our future.

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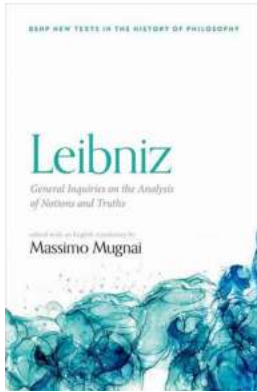
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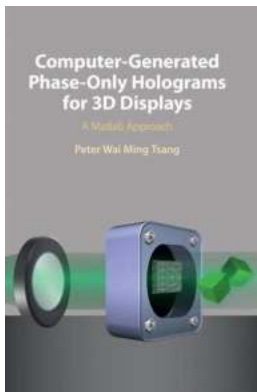


This volume comprises high-quality works in pure and applied mathematics from the mathematical communities in Spain and Brazil. A wide range of subjects are covered, ranging from abstract algebra, including Lie algebras, commutative semigroups, and differential geometry, to optimization and control in real world problems such as fluid mechanics, the numerical simulation of cancer PDE models, and the stability of certain dynamical systems. The book is based on contributions presented at the Second Joint Meeting Spain-Brazil in Mathematics, held in Cádiz in December 2018, which brought together more than 330 delegates from around the world. All works were subjected to a blind peer review process. The book offers an excellent summary of the recent activity of Spanish and Brazilian research groups and will be of interest to researchers, PhD students, and graduate scholars seeking up-to-date knowledge on these pure and applied mathematics subjects.



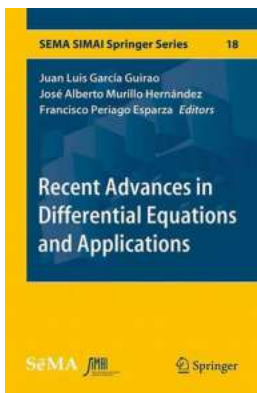
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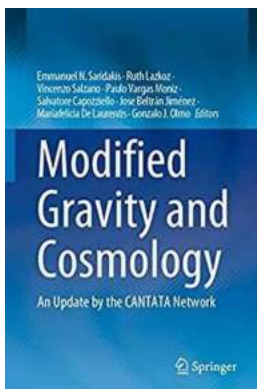
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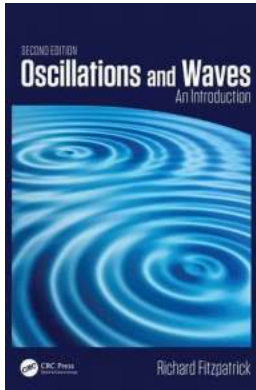
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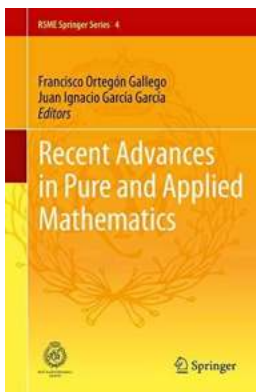
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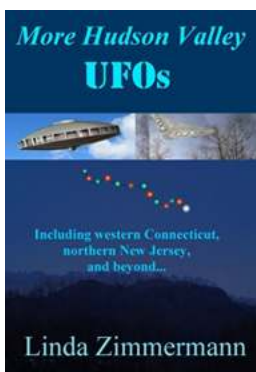
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