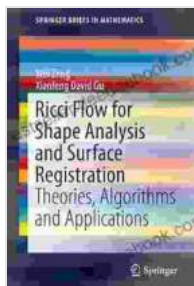


Theories, Algorithms and Applications: SpringerBriefs in Mathematics



Ricci Flow for Shape Analysis and Surface Registration: Theories, Algorithms and Applications (SpringerBriefs in Mathematics) by Teodolinda Barolini

★★★★☆ 4.7 out of 5

Language : English
File size : 9136 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Print length : 246 pages



This book gathers concise introductory chapters on the core concepts, methodologies, and applications of several key areas of mathematics. Written by a team of highly accomplished mathematicians, the chapters cover a broad range of topics, including: algebraic geometry, topology, differential geometry, number theory, representation theory, algebraic combinatorics, and algebraic K-theory. The book is organized into topical sections, each of which provides an overview of the main themes and open problems in a given area, as well as a collection of short surveys on recent progress and applications. This format allows readers to quickly get up to speed on a particular topic and provides a handy reference for researchers working in related areas.

Algebraic Geometry

Algebraic geometry is a branch of mathematics that deals with the study of algebraic varieties, which are sets of solutions to polynomial equations. Algebraic varieties can be of any dimension, and they can be used to model a wide variety of objects, including curves, surfaces, and manifolds. Some of the most important topics in algebraic geometry include the theory of schemes, the theory of moduli spaces, and the theory of intersection theory.

Topology

Topology is a branch of mathematics that deals with the study of topological spaces, which are sets that are equipped with a notion of closeness. Topological spaces can be used to model a wide variety of objects, including surfaces, manifolds, and knots. Some of the most important topics in topology include the theory of homology, the theory of cohomology, and the theory of knot theory.

Differential Geometry

Differential geometry is a branch of mathematics that deals with the study of smooth manifolds, which are spaces that are locally Euclidean. Smooth manifolds can be used to model a wide variety of objects, including surfaces, curves, and manifolds. Some of the most important topics in differential geometry include the theory of Riemannian geometry, the theory of symplectic geometry, and the theory of gauge theory.

Number Theory

Number theory is a branch of mathematics that deals with the study of the properties of integers. Some of the most important topics in number theory

include the theory of prime numbers, the theory of algebraic numbers, and the theory of Diophantine equations.

Representation Theory

Representation theory is a branch of mathematics that deals with the study of representations of groups and algebras. Representations of groups and algebras can be used to model a wide variety of objects, including Lie groups, algebraic groups, and quantum groups. Some of the most important topics in representation theory include the theory of characters, the theory of modules, and the theory of Lie algebras.

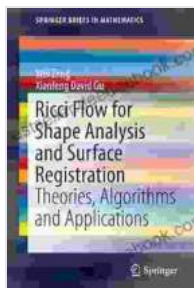
Algebraic Combinatorics

Algebraic combinatorics is a branch of mathematics that deals with the study of combinatorial objects, such as graphs, matrices, and polytopes. Algebraic combinatorics has applications in a wide variety of areas, including computer science, physics, and biology. Some of the most important topics in algebraic combinatorics include the theory of graphs, the theory of matroids, and the theory of polytopes.

Algebraic K-Theory

Algebraic K-theory is a branch of mathematics that deals with the study of the K-theory of rings and algebras. K-theory is a powerful tool for studying the algebraic structure of rings and algebras, and it has applications in a wide variety of areas, including number theory, algebraic geometry, and topology. Some of the most important topics in algebraic K-theory include the theory of the Adams spectral sequence, the theory of motivic cohomology, and the theory of topological K-theory.

This book provides a comprehensive overview of the core concepts, methodologies, and applications of several key areas of mathematics. The chapters are written by leading experts in their respective fields, and they provide a valuable resource for students and researchers alike. The book is also an excellent source of inspiration for new research ideas.



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