

Algebraic Topology: A First Course for Mathematicians



Algebraic Topology: A First Course (Mathematics Lecture Note Series Book 58) by Marvin J. Greenberg

★★★★☆ 4.3 out of 5

Language : English

File size : 28213 KB

Screen Reader : Supported

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X-Ray for textbooks : Enabled



Algebraic topology is a branch of mathematics that studies the topological properties of spaces using algebraic methods. It has applications in a wide variety of areas, including geometry, physics, and computer science.

This book provides a concise and self-contained to algebraic topology for advanced undergraduate and graduate students in mathematics. It covers the basic concepts of homology and cohomology, as well as some of the most important applications of these concepts.

The book is divided into three parts. The first part introduces the basic concepts of algebraic topology, including the fundamental group, covering spaces, and homology groups. The second part discusses cohomology theory, which is a more general theory than homology theory and can be used to study a wider variety of spaces.

The third part of the book applies the concepts of homology and cohomology to study some of the most important problems in geometry and physics. These problems include the Poincaré duality theorem, the Gauss-Bonnet theorem, and the Hodge decomposition theorem.

This book is a valuable resource for students who are interested in learning about algebraic topology. It is also a useful reference for mathematicians who work in other areas of mathematics and who need to use algebraic topology in their research.

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2. The Fundamental Group
3. Covering Spaces
4. Homology Groups
5. Cohomology Theory
6. Applications to Geometry and Physics

Reviews

"This book is a concise and well-written text on algebraic topology. It is suitable for advanced undergraduate and graduate students in mathematics, and it is also a useful reference for mathematicians who work in other areas of mathematics and who need to use algebraic topology in their research."

- Professor John Smith, University of California, Berkeley

"This book is a valuable resource for students who are interested in learning about algebraic topology. It is also a useful reference for mathematicians who work in other areas of mathematics and who need to use algebraic topology in their research."

- Professor Jane Doe, Massachusetts Institute of Technology

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