



THEORY An Approach Based on Alexander-Spanier Cochains Introduction to  
Cohomology (Hatcher 3.1 and 3.A) A Gentle Approach to Crystalline Cohomology -  
Jacob Lurie Study with me:Massey.HOMOLOGY AND COHOMOLOGY THEORY An  
Approach Based on Alexander-Spanier Cochains Study with me:Massey.HOMOLOGY  
AND COHOMOLOGY THEORY An Approach Based on Alexander-Spanier Cochains  
Study with me:Massey.HOMOLOGY AND COHOMOLOGY THEORY An Approach Based  
on Alexander-Spanier Cochains Homology and Cohomology Study with  
me:Massey.HOMOLOGY AND COHOMOLOGY THEORY An Approach Based on  
Alexander-Spanier Cochains  
Cohomology Theories  
Cohomology Groups and Genera of Higher-Dimensional Fields  
Equivariant Homotopy and Cohomology Theory  
Cohomological Methods in Transformation Groups  
Generalized Etale Cohomology Theories  
Cohomology Theories  
Algebraic Geometry II  
Remarks on the Cohomology Theory of Groups  
Generalized Cohomology  
Continuous Cohomology of Spaces with Two Topologies  
Equivariant Cohomology Theories

Asymptotic Cyclic Cohomology  
General Cohomology Theory and K-Theory  
Cohomology Theories for Compact Abelian Groups  
Equivariant Homotopy and Cohomology Theory  
Generalized Tate Cohomology  
Homology and Cohomology Theory  
Cohomology Theory of Topological Transformation Groups  
Coarse Cohomology and Index Theory on Complete Riemannian Manifolds  
Intersection Cohomology  
Cohomology Theory and Algebraic Correspondences  
Mixed Motives and their Realization in Derived Categories  
Generalized Etale Cohomology Theories

*Cohomology Theory*

*OMB No.*  
*9085480695172 edited*  
*by*

---

**AVERY HARRELL**

---

## **COHOMOLOGY THEORIES**

World Scientific

Aims to give an exposition of generalized (co)homology theories that can be read by a group of mathematicians who are not experts in algebraic topology. This

title starts with basic notions of homotopy theory, and introduces the axioms of generalized (co)homology theory. It also discusses various types of generalized cohomology theories.

*Cohomology Groups and Genera of Higher-Dimensional Fields* Springer

This volume introduces equivariant homotopy, homology, and cohomology theory, along with various related topics in modern algebraic topology. It explains the main ideas behind some of the most striking recent advances in the subject. The book begins with a development of the equivariant algebraic topology of spaces culminating in a discussion of the Sullivan conjecture that emphasizes its relationship with classical Smith theory. It then introduces equivariant stable homotopy theory, the equivariant stable

homotopy category, and the most important examples of equivariant cohomology theories. T.

*Equivariant Homotopy and Cohomology Theory* Springer

A generalized étale cohomology theory is a theory which is represented by a presheaf of spectra on an étale site for an algebraic variety, in analogy with the way an ordinary spectrum represents a cohomology theory for spaces. Examples include étale cohomology and étale K-theory. This book gives new and complete proofs of both Thomason's descent theorem for Bott periodic K-theory and the Nisnevich descent theorem. In doing so, it exposes most of the major ideas of the homotopy theory of presheaves of spectra, and generalized étale homology theories in

particular. The treatment includes, for the purpose of adequately dealing with cup product structures, a development of stable homotopy theory for  $n$ -fold spectra, which is then promoted to the level of presheaves of  $n$ -fold spectra. This book should be of interest to all researchers working in fields related to algebraic K-theory. The techniques presented here are essentially combinatorial, and hence algebraic. An extensive background in traditional stable homotopy theory is not assumed. ----- Reviews (...) in developing the techniques of the subject, introduces the reader to the stable homotopy category of simplicial presheaves. (...) This book provides the user with the first complete account which is sensitive enough to be compatible with the sort of closed model

category necessary in K-theory applications (...). As an application of the techniques the author gives proofs of the descent theorems of R. W. Thomason and Y. A. Nisnevich. (...) The book concludes with a discussion of the Lichtenbaum-Quillen conjecture (an approximation to Thomason's theorem without Bott periodicity). The recent proof of this conjecture, by V. Voevodsky, (...) makes this volume compulsory reading for all who want to be au fait with current trends in algebraic K-theory! - Zentralblatt MATH The presentation of these topics is highly original. The book will be very useful for any researcher interested in subjects related to algebraic K-theory. - Matematica  
*Cohomological Methods in*

*Transformation Groups* American Mathematical Soc.

Of all topological algebraic structures compact topological groups have perhaps the richest theory since 80 many different fields contribute to their study: Analysis enters through the representation theory and harmonic analysis; differential geometry, the theory of real analytic functions and the theory of differential equations come into the play via Lie group theory; point set topology is used in describing the local geometric structure of compact groups via limit spaces; global topology and the theory of manifolds again play a role through Lie group theory; and, of course, algebra enters through the cohomology and homology theory. A particularly well understood subclass of

compact groups is the class of compact abelian groups. An added element of elegance is the duality theory, which states that the category of compact abelian groups is completely equivalent to the category of (discrete) abelian groups with all arrows reversed. This allows for a virtually complete algebraisation of any question concerning compact abelian groups. The subclass of compact abelian groups is not so special within the category of compact groups as it may seem at first glance. As is very well known, the local geometric structure of a compact group may be extremely complicated, but all local complication happens to be "abelian". Indeed, via the duality theory, the complication in compact connected groups is faithfully reflected in the

theory of torsion free discrete abelian groups whose notorious complexity has resisted all efforts of complete classification in ranks greater than two.

### **GENERALIZED ETALE COHOMOLOGY THEORIES**

Springer Science & Business Media  
This book contains a collection of articles summarizing the state of knowledge in a large portion of modern homotopy theory. A call for articles was made on the occasion of an emphasis semester organized by the Centre de Recerca Matemàtica in Bellaterra (Barcelona) in 1998. The main topics treated in the book include abstract features of stable and unstable homotopy, homotopical localizations,  $p$ -compact groups,  $H$ -spaces, classifying spaces for proper

actions, cohomology of discrete groups,  $K$ -theory and other generalized cohomology theories, configuration spaces, and Lusternik-Schnirelmann category. The book is addressed to all mathematicians interested in homotopy theory and in geometric aspects of group theory. New research directions in topology are highlighted. Moreover, this informative and educational book serves as a welcome reference for many new results and recent methods.

### **COHOMOLOGY THEORIES**

Springer Science & Business Media  
Aimed at second year graduate students, this text introduces them to cohomology theory (involving a rich interplay between algebra and topology) with a minimum of prerequisites. No

homological algebra is assumed beyond what is normally learned in a first course in algebraic topology, and the basics of the subject, as well as exercises, are given prior to discussion of more specialized topics.

## ALGEBRAIC GEOMETRY II

American Mathematical Soc.

A generalized étale cohomology theory is a theory which is represented by a presheaf of spectra on an étale site for an algebraic variety, in analogy with the way an ordinary spectrum represents a cohomology theory for spaces. Examples include étale cohomology and étale K-theory. This book gives new and complete proofs of both Thomason's descent theorem for Bott periodic K-theory and the Nisnevich descent

theorem. In doing so, it exposes most of the major ideas of the homotopy theory of presheaves of spectra, and generalized étale homology theories in particular. The treatment includes, for the purpose of adequately dealing with cup product structures, a development of stable homotopy theory for  $n$ -fold spectra, which is then promoted to the level of presheaves of  $n$ -fold spectra. This book should be of interest to all researchers working in fields related to algebraic K-theory. The techniques presented here are essentially combinatorial, and hence algebraic. An extensive background in traditional stable homotopy theory is not assumed. ----- Reviews (...) in developing the techniques of the subject, introduces the reader to the stable homotopy category



of simplicial presheaves. (...) This book provides the user with the first complete account which is sensitive enough to be compatible with the sort of closed model category necessary in K-theory applications (...). As an application of the techniques the author gives proofs of the descent theorems of R. W. Thomason and Y. A. Nisnevich. (...) The book concludes with a discussion of the Lichtenbaum-Quillen conjecture (an approximation to Thomason's theorem without Bott periodicity). The recent proof of this conjecture, by V. Voevodsky, (...) makes this volume compulsory reading for all who want to be au fait with current trends in algebraic K-theory! - Zentralblatt MATH  
The presentation of these topics is highly original. The book will be very useful for

any researcher interested in subjects related to algebraic K-theory. -

Matematica

*Remarks on the Cohomology Theory of Groups* World Scientific

Etale cohomology is an important branch in arithmetic geometry. This book covers the main materials in SGA 1, SGA 4, SGA 4 1/2 and SGA 5 on etale cohomology theory, which includes decent theory, etale fundamental groups, Galois cohomology, etale cohomology, derived categories, base change theorems, duality, and  $l$ -adic cohomology. The prerequisites for reading this book are basic algebraic geometry and advanced commutative algebra.

American Mathematical Soc.

These notes constitute a faithful record of a short course of lectures given in São

Paulo, Brazil, in the summer of 1968. The audience was assumed to be familiar with the basic material of homology and homotopy theory, and the object of the course was to explain the methodology of general cohomology theory and to give applications of K-theory to familiar problems such as that of the existence of real division algebras. The audience was not assumed to be sophisticated in homological algebra, so one chapter is devoted to an elementary exposition of exact couples and spectral sequences.

### **GENERALIZED COHOMOLOGY**

Springer

This volume introduces equivariant homotopy, homology, and cohomology theory, along with various related topics in modern algebraic topology. It explains

the main ideas behind some of the most striking recent advances in the subject. The work begins with a development of the equivariant algebraic topology of spaces culminating in a discussion of the Sullivan conjecture that emphasizes its relationship with classical Smith theory. The book then introduces equivariant stable homotopy theory, the equivariant stable homotopy category, and the most important examples of equivariant cohomology theories. The basic machinery that is needed to make serious use of equivariant stable homotopy theory is presented next, along with discussions of the Segal conjecture and generalized Tate cohomology. Finally, the book gives an introduction to "brave new algebra", the study of point-set level algebraic

structures on spectra and its equivariant applications. Emphasis is placed on equivariant complex cobordism, and related results on that topic are presented in detail.

### **CONTINUOUS COHOMOLOGY OF SPACES WITH TWO TOPOLOGIES**

Springer Science & Business Media

This two-part volume contains numerous examples and insights on various topics. The authors have taken pains to present the material rigorously and coherently. This book will be immensely useful to mathematicians and graduate students working in algebraic geometry, arithmetic algebraic geometry, complex analysis and related fields.

### **Equivariant Cohomology Theories**

Springer Science & Business Media

Elliptic cohomology is an extremely beautiful theory with both geometric and arithmetic aspects. The former is explained by the fact that the theory is a quotient of oriented cobordism localised away from 2, the latter by the fact that the coefficients coincide with a ring of modular forms. The aim of the book is to construct this cohomology theory, and evaluate it on classifying spaces  $BG$  of finite groups  $G$ . This class of spaces is important, since (using ideas borrowed from 'Monstrous Moonshine') it is possible to give a bundle-theoretic definition of  $EU$ -( $BG$ ). Concluding chapters also discuss variants, generalisations and potential applications.

## ASYMPTOTIC CYCLIC COHOMOLOGY

Academic Press

This monograph developed out of the Abendseminar of 1958-1959 at the University of Zürich. The purpose of this monograph is to develop the de Rham cohomology theory, and to apply it to obtain topological invariants of smooth manifolds and fibre bundles. It also addresses the purely algebraic theory of the operation of a Lie algebra in a graded differential algebra.

*General Cohomology Theory and K-Theory* Birkhäuser

"Coarse geometry" is the study of metric spaces from the asymptotic point of view: two metric spaces (such as the integers and the real numbers) which "look the same from a great distance"

are considered to be equivalent. This book develops a cohomology theory appropriate to coarse geometry. The theory is then used to construct "higher indices" for elliptic operators on noncompact complete Riemannian manifolds. Such an elliptic operator has an index in the  $K$ -theory of a certain operator algebra naturally associated to the coarse structure, and this  $K$ -theory then pairs with the coarse cohomology. The higher indices can be calculated in topological terms thanks to the work of Connes and Moscovici. They can also be interpreted in terms of the  $K$ -homology of an ideal boundary naturally associated to the coarse structure. Applications to geometry are given, and the book concludes with a discussion of the coarse analog of the Novikov

conjecture.

*Cohomology Theories for Compact Abelian Groups* Springer

The theory of infinite loop spaces has been the center of much recent activity in algebraic topology. Frank Adams surveys this extensive work for researchers and students. Among the major topics covered are generalized cohomology theories and spectra; infinite-loop space machines in the sense of Boardman-Vogt, May, and Segal; localization and group completion; the transfer; the Adams conjecture and several proofs of it; and the recent theories of Adams and Priddy and of Madsen, Snaith, and Tornehave.

## **EQUIVARIANT HOMOTOPY AND**

## **COHOMOLOGY THEORY**

Cambridge University Press

The aim of cyclic cohomology theories is the approximation of K-theory by cohomology theories defined by natural chain complexes. The basic example is the approximation of topological K-theory by de Rham cohomology via the classical Chern character. A cyclic cohomology theory for operator algebras is developed in the book, based on Connes' work on noncommutative geometry. Asymptotic cyclic cohomology faithfully reflects the basic properties and features of operator K-theory. It thus becomes a natural target for a Chern character. The central result of the book is a general Grothendieck-Riemann-Roch theorem in noncommutative geometry

with values in asymptotic cyclic homology. Besides this, the book contains numerous examples and calculations of asymptotic cyclic cohomology groups.

### GENERALIZED TATE COHOMOLOGY

Princeton University Press

Based on several recent courses given to mathematical physics students, this volume is an introduction to bundle theory. It aims to provide newcomers to the field with solid foundations in topological K-theory. A fundamental theme, emphasized in the book, centers around the gluing of local bundle data related to bundles into a global object. One renewed motivation for studying this subject, comes from quantum field theory, where topological invariants play

an important role.

*Homology and Cohomology Theory*  
Springer Science & Business Media

This is an account of the theory of certain types of compact transformation groups, namely those that are susceptible to study using ordinary cohomology theory and rational homotopy theory, which in practice means the torus groups and elementary abelian  $p$ -groups. The efforts of many mathematicians have combined to bring a depth of understanding to this area. However to make it reasonably accessible to a wide audience, the authors have streamlined the presentation, referring the reader to the literature for purely technical results and working in a simplified setting where possible. In this way the reader with a

relatively modest background in algebraic topology and homology theory can penetrate rather deeply into the subject, whilst the book at the same time makes a useful reference for the more specialised reader.

### **COHOMOLOGY THEORY OF TOPOLOGICAL TRANSFORMATION GROUPS**

American Mathematical Soc.  
This book explains techniques that are essential in almost all branches of

modern geometry such as algebraic geometry, complex geometry, or non-archimedean geometry. It uses the most accessible case, real and complex manifolds, as a model. The author especially emphasizes the difference between local and global questions. Cohomology theory of sheaves is introduced and its usage is illustrated by many examples.

[Coarse Cohomology and Index Theory on Complete Riemannian Manifolds](#)

American Mathematical Soc.

a

Related with Cohomology Theory:

© [Cohomology Theory Grapes In Japanese Language](#)

© [Cohomology Theory Grand Island Ne History](#)

© [Cohomology Theory Graphing Linear Inequalities Worksheet Pdf](#)