<<层论>>

图书基本信息

书名：<<层论>>

13位ISBN编号：9787510004698

10位ISBN编号：7510004691

出版时间：2010-1

出版时间：世界图书出版公司

作者：布里登

页数：502

前言

This book is primarily concerned with the study of cohomology theories ofgeneral topological spaces with “ general coefficient systems. ’ ’ Sheaves playseveral roles in this study.For example.they provide a suitable notion of “ general coefl~cient systems. ” Moreover.they furnish US with a commonmethod of defining various cohomology theories and of comparison betweendifferent cohomology theories. The parts of the theory of sheaves covered here are those areas impor.tant to algebraic topology.Sheaf theory is also important in other fields ofmathematics, notably algebraic geometry, but that iS outside the scope ofthe present book.Thus a more descriptive title for this book might havebeen Algebraic Topology b-om the Point View ol Sheaf Theory.

Several innovations will be found in this book. Notably, the con.cept of the “ gautness ’ ’ of a subspace ran adaptation of an analogous no.tion of Spanier to sheaf-theoretic cohomologyl iS introduced and exploitedthroughout the book.The fact that sheaf-theoretic cohomology satisfiesthe homotopy property is proved for general topological spaces.1 Also, relative cohomology iS introduced into sheaf theory.Concerning relativecohomology, it should be noted that sheaf-theoretic cohomology iS usuallyconsidered as a “ single space ” theory.This is not without reason.sincecohomology relative to a closed subspace can be obtained by taking coef.ficients in a certain type of sheaf, while that relative to an open subspace（or, more generally, to a taut subspace）can be obtained by taking coho-mology with respect to a special family of supports.However, even in thesecases.it iS sometimes of notational advantage to have a relative cohomologytheory.For example, in our treatment of characteristic classes in ChapterIV the use of relative cohomology enables US to develop the theory in fullgenerality and with relatively simple notation.Our definition of relativecohomology in sheaf theory is the first fully satisfactory one to be given.It is of interest to note that.unlike absolute cohomology, the relative CO-homology groups are not the derived functors of the relative cohomologygroup in degree zero（but they usually are SO in most cases of interest）.

内容概要

本书主要讲述具有一般系数体系拓扑空间的上同调理论。
层论包括对代数拓扑很重要的领域。
书中有好多创新点，引进不少新概念，全书内容贯穿一致。
证实了广义同调空间中层理论上同调满足同调基本特性的事实。
将相对上同调引入层理论中。
　　读者有一定的基本同调代数和代数拓扑知识就可以理解本书。
每章末都附有练习，这些可以帮助学生更好的理解书中的知识体系。
附录给出了部分习题的解答。
第二版中在内容上做了较大的改动，增加了80多例子和大量更深层次的内容，如，Cech上同调、Oliver变换、插值理论、广义流形、局部齐性空间、同调纤维和p进变换群。
目次：层和准层；层上同调；与其他上同调定理的比较；谱序列的应用；Borel-Moore同调；上层和ech同调。
　　读者对象：数学专业的高年级本科生、研究生和相关专业的学者。

书籍目录

章节摘录

In this chapter we shall define the sheaf-theoretic cohomology theory andshall develop many of its basic properties. The cohomology groups of a space with coefficients in a sheaf are definedin Section 2 using the canonical resolution of a sheaf due to Godement.In Section 3 it is shown that the category of sheaves contains "enoughinjectives," and it follows from the results of Sections 4 and 5 that thesheaf cohomology groups are just the right derived functors of the leftexact functor F that assigns to a sheaf its group of sections. A sheaf is is said to be acyclic if the higher cohomology groups withcoefficients in d are zero. Such sheaves provide a means of "computing"cohomology in particular situations. In Sections 5 and 9 some importantclasses of acyclic sheaves are defined and investigated. In Section 6 we prove a theorem concerning the existence and uniquenessof extensions of a natural transformation of functors （of several variables） to natural transformations of "connected systems" of functors. This resultis applied in Section 7 to define, and to give axioms for, the cup productin sheaf cohomology theory. These sections are central to our treatment ofmany of the fundamental consequences of sheaf theory. The cohomology homomorphism induced by a map is defined in Section8. The relationship between the cohomology of a subspace and that of itsneighborhoods is investigated in Section 10, and the important notion of"tautness" of a subspace is introduced there. In Section 11 we prove the Vietoris mapping theorem and use it toprove that sheaf-theoretic cohomology, with constant coefficients, satisfiesthe invariance under homotopy property for general topological spaces. Relative cohomology theory is introduced into sheaf theory in Section12, and its properties, such as invariance under excision, are developed. InSection 13 we derive some exact sequences of the Mayer-Vietoris type.