第一图书网, tushu007.com

<<代数拓扑中微分形式>>

图书基本信息

书名：<<代数拓扑中微分形式>>

13位ISBN编号：9787506291903

10位ISBN编号：7506291908

出版时间：2009-3

出版时间：世界图书出版公司北京分公司

作者：Raoul Bott,Loring W. Tu

页数：331

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：http://www.tushu007.com

第一图书网, tushu007.com

<<代数拓扑中微分形式>>

前言

The guiding principle in this book is to use differential forms as an aid inexploring some of the less digestible aspects of algebraic topology. Accord-ingly, we move primarily in the realm of smooth manifolds and use thede Rham theory as a prototype of all of cohomology. For applications tohomotopy theory we also discuss by way of analogy cohomoiogy witharbitrary coefficients. Although we have in mind an audience with prior exposure to algebraicor differential topology, for the most part a good knowledge of linearalgebra, advanced calculus, and point-set topology should suffice. Someacquaintance with manifolds, simplicial complexes, singular homology andcohomology, and homotopy groups is helpful, but not really necessary.Within the text itself we have stated with care the more advanced resultsthat are needed, so that a mathematically mature reader who accepts thesebackground materials on faith should be able to read the entire book withthe minimal prerequisites.There are more materials here than can be reasonably covered in aone-semester course. Certain sections may be omitted at first reading with-out loss of continuity. We have indicated these in the schematic diagramthat follows. This book is not intended to be foundational; rather, it is only meant toopen some of the doors to the formidable edifice of modern algebraictopology. We offer it in the hope that such an informal account of thesubject at a semi-introductory level fills a gap in the literature. It would be impossible to mention all the friends, colleagues, andstudents whose ideas have contributed to this book. But the seniorauthor would like on this occasion to express his deep gratitude, firstof all to his primary topology teachers E. Specker, N.

第一图书网, tushu007.com

<<代数拓扑中微分形式>>

内容概要

The guiding principle in this book is to use differential forms as an aid inexploring some of the less digestible aspects of algebraic topology. Accord-ingly, we move primarily in the realm of smooth manifolds and use thede Rham theory as a prototype of all of cohomology. For applications tohomotopy theory we also discuss by way of analogy cohomoiogy witharbitrary coefficients. Although we have in mind an audience with prior exposure to algebraicor differential topology, for the most part a good knowledge of linearalgebra, advanced calculus, and point-set topology should suffice. Someacquaintance with manifolds, simplicial complexes, singular homology andcohomology, and homotopy groups is helpful, but not really necessary.Within the text itself we have stated with care the more advanced resultsthat are needed, so that a mathematically mature reader who accepts thesebackground materials on faith should be able to read the entire book withthe minimal prerequisites.

第一图书网, tushu007.com

<<代数拓扑中微分形式>>

作者简介

作者：(美国)Raoul Bott (美国)Loring W.Tu

第一图书网, tushu007.com

<<代数拓扑中微分形式>>

书籍目录

IntroductionCHAPTER Ⅰ De Rham Theory § 1 The de Rham Complex on RThe de Rham complexCompact supports § 2 The Mayer-Vietoris SequenceThefunctorQThe Mayer-Vietoris sequenceThe functor and the Mayer—Vietoris sequence for compact supports § 3 Orientation and IntegrationOrientation and the integral of a differential formStokes’theorem § 4 Poincar6 LemmasThe Poincare lemmafordeRham~ohomoiogyThe Poincare lemma for compactly supported cohomologyThe degree of a propermap § 5 The Mayer-Vietoris ArgumentExistence of a good coverFinite dimensionality of de Rham cohomologyPoincar6 duality on an orientable manifoldThe Kiinneth formula and the Leray-Hirsch theoremThe Poincar6 dual of a closed oriented submanifold § 6 The Thorn IsomorphismVector bundles and the reduction of structure groupsOperations on vector bundlesCompact cohomology of a vector bundleCompact vertical cohomology and integration along the fiberPoincar6 duality and the Thorn classThe global angular form，the Euler class，and the Thorn classRelative de Rham theory § 7 The Nonorientable CaseThe twisted de Rham COD rplexIntegration of densities，Poincard duality，and the Thom isomorphismCHAPTER Ⅱ The Cech——de Rham Complex § 8 The Generalized Mayer-Vietoris PrincipleReformulation of the Mayer-Vietoris sequenceGeneralization to countably many open sets and applications § 9 More Examples and Applications of the Mayer—Vietoris PrincipleExamples：computing the de Rham cohomology from thecombinatorics of a good coverExplicit isomorphisms between the double complex and de Rham and eachThe tic—tac-toe proof of the Kfinneth formula § 10 Presheaves and Cech CohomologyPresheavesCech cohomology § 11 Sphere BundlesOrientabilityThe Euler class of an oriented sphere bundleThe global angular formEuler number and the isolated singularities of a sectionEuler characteristic and the Hopf index theorem § 12 The Thorn Isomorphism and Poincar6 Duality RevisitedThe Thorn isomorphismEuler class and the zcr0 locus of a sectionA tic—tac-toe lemmaPoincar6 duality § 13 MonodromyWhen is a locally constant presheaf constant?Examples of monodromyCHAPTER ⅢSpectral Sequences and Applications § 14 The Spectral Sequence of a Filtered ComplexExact CouplesThe spectral sequence of a filtered complexThe spectral sequence of a double complexThe spectral sequence of a fiber bundleSome applicationsPfodUct structuresThe Gysin sequenceLeray’S construction § 15 Cohomology with Integer CoefficientsSingular homologyThe cone constructionThe Mayer-Vietoris sequence for singular chainsSingular cohomologyThe homology spectral sequence § 16 The Path FibrationThe pathfibrationThe cohomology of the loop space of a sphere § 17 Review of Homotopy TheoryHomotopy groupsThe relative homotopy sequenceSome homotopy groups of the spheresAttaching cellsDigression on Morse theoryThe relation between homotopy and homology π3(S2)and the Hopf invariant § 18 Applications to Homotopy TheoryEilenberg-MacLane spacesThe telescoping constructionThe cohomology of K(Z，3)ThetransgressionBasic tricks of the tradePostnikov approximationComputation of π4(S3)The Whitehead towerComputation of π5(S3) § 19 Rational Homotopy TheoryMinimal moddsExamples of Minimal ModelsThe main theorem and applicationsCHAPTER ⅣCharacteristic Classes § 20 Chern Classes of a Complex Vector BundleThe first Chern class of a complex line bundleThe projectivization of a vector bundleMain properties of the Chern classes § 21 The Splitting Principle and Flag ManifoldsThe splitting principleProof of the Whitney product formula and the equalityof the top Chern class and the Euler classComputation of some Chern classesFlag manifolds § 22 Pontrjagin ClassesConjugate bundlRealization and complexificationThe Pontrjagin classes of a real vector bundleApplication to the embedding of a manifold in aEuclidean space § 23 The Search for the Universal BundThe GrassmannianDigression on the Poincar6 series of a graded algebraThe classification of vector bundlesThe infinite GrassmannianConcluding remarksReferencesList of NotationsIndex

第一图书网, tushu007.com

章节摘录

插图：

第一图书网, tushu007.com

<<代数拓扑中微分形式>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:http://www.tushu007.com