

<<热核与狄拉克算子>>

图书基本信息

书名：<<热核与狄拉克算子>>

13位ISBN编号：9787506292139

10位ISBN编号：7506292130

出版时间：1970-1

出版时间：世界图书出版公司

作者：波林

页数：363

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>

<<热核与狄拉克算子>>

前言

This book, which began as a seminar in 1985 at MIT, contains complete proofs of the local index theorem for Dirac operators using the heat kernel approach, together with its generalizations to equivariant Dirac operators and families of Dirac operators, as well as background material on superconnections and equivariant differential forms. Since the publication of the first edition, the subjects treated here have continued to find new applications. Equivariant cohomology plays an important role in the study of symplectic reduction, and Bismut superconnections and the local index theorem for families have had many applications, through the construction of higher analytic torsion forms and currents. (For a survey of some of these developments, we recommend reading Bismut's talk at the Berlin International Congress of Mathematicians, reference Although this book lacks some of the usual attributes of a textbook (such as exercises), it has been widely used in advanced courses in differential geometry; for many of the topics discussed here, there are no other treatments available in monograph form. Because of the continuing demand from students for the book, we were very pleased when our editor Catriona Byrne at Springer Verlag proposed reissuing it in the series "Grundlehren Text Editions." The proofs in this book remain among the simplest available, and we have decided to retain them without any change in the new edition. We have not attempted to give a definitive bibliography of this very large subject, but have only tried to draw attention to the articles that have influenced us. We would like to take the opportunity to thank the other participants in the MIT seminar, especially Martin Andler and Varghese Mathai, for their spirited participation. Discussions with many other people have been important to us, among whom we would like to single out Jean-Michel Bismut, Dan Freed and Dan Quillen. Finally, we are pleased to be able to thank all of those people who read all or part of the book as it developed and who made many comments which were crucial in improving the book, both mathematically and stylistically, especially Jean-François Burnol, Michel Duflo, Sylvie Paycha, Christophe Soule, and Shlomo Sternberg. We also thank them for suggestions which have improved the exposition.

<<热核与狄拉克算子>>

内容概要

This book , which began as a seminar in 1985 at MIT , contains complete proofs of the local index theorem for Dirac operators using the heat kernel approach , together with its generalizations to equivariant Dirac operators and families of Dirac operators , as well as background material on superconnections and equivariant differential forms. Since the publication of the first edition , the subjects treated here have continued to find new applications. Equivariant cohomology plays an important role in the study of symplectic reduction , and Bismut superconnections and the local index theorem for families have had many applications , through the construction of higher analytic torsion forms and currents. (For a survey of some of these developments , we recommend reading Bismut's talk at the Berlin International Congress of Mathematicians , reference

Although this book lacks some of the usual attributes of a textbook (such as exercises) , it has been widely used in advanced courses in differential geometry; for many of the topics discussed here , there are no other treatments available in monograph form. Because of the continuing demand from students for the book , we were very

<<热核与狄拉克算子>>

作者简介

作者：(法国)波林

<<热核与狄拉克算子>>

书籍目录

Introduction
 1 Background on Differential Geometry
 1.1 Fibre Bundles and Connections
 1.2 Riemannian Manifolds
 1.3 Superspaces
 1.4 Superconnections
 1.5 Characteristic Classes
 1.6 The Euler and Thorn Classes
 2 Asymptotic Expansion of the Heat Kernel
 2.1 Differential Operators
 2.2 The Heat Kernel on Euclidean Space
 2.3 Heat Kernels
 2.4 Construction of the Heat Kernel
 2.5 The Formal Solution
 2.6 The Trace of the Heat Kernel
 2.7 Heat Kernels Depending on a Parameter
 3 Clifford Modules and Dirac Operators
 3.1 The Clifford Algebra
 3.2 Spinors
 3.3 Dirac Operators
 3.4 Index of Dirac Operators
 3.5 The Lichnerowicz Formula
 3.6 Some Examples of Clifford Modules
 4 Index Density of Dirac Operators
 4.1 The Local Index Theorem
 4.2 Mehler's Formula
 4.3 Calculation of the Index Density
 5 The Exponential Map and the Index Density
 5.1 Jacobian of the Exponential Map on Principal Bundles
 5.2 The Heat Kernel of a Principal Bundle
 5.3 Calculus with Grassmann and Clifford Variables
 5.4 The Index of Dirac Operators
 6 The Equivariant Index Theorem
 6.1 The Equivariant Index of Dirac Operators
 6.2 The Atiyah-Bott Fixed Point Formula
 6.3 Asymptotic Expansion of the Equivariant Heat Kernel
 6.4 The Local Equivariant Index Theorem
 6.5 Geodesic Distance on a Principal Bundle
 6.6 The heat kernel of an equivariant vector bundle
 6.7 Proof of Proposition 6.1
 7 Equivariant Differential Forms
 7.1 Equivariant Characteristic Classes
 7.2 The Localization Formula
 7.3 Bott's Formulas for Characteristic Numbers
 7.4 Exact Stationary Phase Approximation
 8 The Fourier Transform of Coadjoint Orbits
 8.1 The Kirillov Formula
 8.2 The Weyl and Kirillov Character Formulas
 8.3 The Heat Kernel Proof of the Kirillov Formula
 9 The Index Bundle
 9.1 The Index Bundle in Finite Dimensions
 9.2 The Index Bundle of a Family of Dirac Operators
 9.3 The Chern Character of the Index Bundle
 9.4 The Equivariant Index and the Index Bundle
 9.5 The Case of Varying Dimension
 9.6 The Zeta-Function of a Laplacian
 9.7 The Determinant Line Bundle
 10 The Family Index Theorem
 10.1 Riemannian Fibre Bundles
 10.2 Clifford Modules on Fibre Bundles
 10.3 The Bismut Superconnection
 10.4 The Family Index Density
 10.5 The Transgression Formula
 10.6 The Curvature of the Determinant Line Bundle
 10.7 The Kirillov Formula and Bismut's Index Theorem

<<热核与狄拉克算子>>

章节摘录

插图：

<<热核与狄拉克算子>>

编辑推荐

《热核与狄拉克算子(英文版)》是由世界图书出版公司出版的。

<<热核与狄拉克算子>>

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>