第一图书网, tushu007.com

<<哈密顿Ricci流>>

图书基本信息

- 书名:<<哈密顿Ricci流>>
- 13位ISBN编号:9787030177995
- 10位ISBN编号:7030177991
- 出版时间:2006-1
- 出版时间:科学
- 作者:Bennett Chow,Peng Lu,Lei Ni
- 页数:608
- 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

<<哈密顿Ricci流>>

内容概要

During the last twenty years, Chinese mathematics has experienced very impressive developments. with significant increases in international academic communications. Different levels of modern mathematical 1ecture series and summer schools (for example, the Special Mathematics Lecture Series in Beijing University since 1998) were held in many universities and research institutes. Prominent native and overseas mathematicians gave lectures on basic knowledge and recent developments in different areas of mathematics. This has provided very good opportunities for Chinese mathematics researchers and graduate students to get in touch with basic knowledge as well as ongoing research projects in mathematics. In particular, this has substantially promoted the development of young mathematicians in China. The formulation of the Lecture in Contemporary Mathematics is based on these activities and series lectures. It serves as high level, specialized textbooks for senior undergraduates, graduate students, and young mathematics researchers in mathematics and applied sciences. By publishing lecture notes of top quality, notes from elite courses in summer schools, and other forms of

notes . we wish that students and young researchers Can harvest a deep understanding of new developments , and grasp basic knowledge and important ongoing projects in different areas of mathematics in a short period of time .

<<哈密顿Ricci流>>

书籍目录

PrefaceAcknowledgmentsA Detailed Guide for the ReaderNotation and SymbolsChapter 1. Riemannian Geometry § 1. Introduction § 2. Metrics, connections, curvatures and covariant differentiation § 3. Basic formulas and identities in Riemannian geometry § 4. Exterior differential calculus and Bochner formulas § 5. Integration and Hodge theory § 6. Curvature decomposition and locally conformally flat manifolds § 7. Moving frames and the Gauss—Bonnet formula § 8. Variation of arc length, energy and area § 9. Geodesics and the exponential map § 10. Second fundamental forms of geodesic spheres § 11. Laplacian, volume and Hessian comparison theorems § 12. Proof of the comparison theorems § 13. Manifolds with nonnegative curvature § 14. Lie groups and left —invariant metrics § 15.Notes and commentaryChapter 2.Fundamentals of the Ricci Flow Equation § 1.Geometric flows and geometrization § 2.Ricci flow and the evolution of scalar curvature § 3.The maximum principle for heat—type equations § 4. The Einstein—Hilbert functional § 5. Evolution of geometric quantities § 6.DeTurck 'S trick and short time existence § 7.Reaction—diffusion equation for the curvature tensor § 8. Notes and commentaryChapter 3. Closed 3—manifolds with Positive Ricci Curvature § 1. Hamilton 'S 3-manifolds with positive Ricci curvature theorem § 2. The maximum principle for tensors § 3. Curvature pinching estimates § 4. Gradient bounds for the scalar curvature § 5. Curvature tends to constant § 6. Exponential convergence of the normafized flow § 7. Notes and commentary Chapter 4. Ricci Solitons and Special Solutions § 1.Gradient Ricci solitons § 2.Ganssian and cylinder solitons § 3.Cigar steady soliton § 4.Rosenau solution § 5. An expanding soliton § 6. Bryant soliton § 7. Homogeneous solutions § 8. The isometry group § 9. Notes and commentaryChapter 5. Isoperimetric Estimates and No Local Collapsing § 1. Sobo~v and logarithmic Sobolev inequalities § 2. Evolution of the length of a geodesic § 3. Isoperimetric estimate for surfaces § 4. Perelman 'S no local collapsing theorem § 5. Geometric applications of no local collapsing § 6.3-manifolds with positive Ricci curvature revisited § 7. Isoperimetric estimate for 3-dimensional Type I solutions § 8. Notes and commentaryChapter 6. Preparation for Singularity Analysis § 1. Derivative estimates and long time existence § 2. Proof of Shi 'S local first and second derivative estimates § 3. Cheeger—Gromov—type compactness theorem for Ricci flow § 4.Long time existence of solutions with bounded Ricci curvature § 5.The Hamilton-Ivey curvature estimate § 6.Strong maximum principles and metric splitting § 7.Rigidity of 3-manifolds with nonnegative curvature § 8. Notes and commentary Chapter 7. High-dimensional and Noncompact Ricci Flow § 1. Spherical space form theorem of Huisken-Margerin—Nishikawa § 2.4-manifolds with pos~ive curvature operator § 3. Manifolds with nonnegative curvature operator § 4. The maximum principle on noncompact manifolds § 5. Complete solutions of the Ricci flow on noncompact manifolds § 6. Notes and commentary Chapter 8. Singularity Analysis § 1. SingulariW dilations and Wpes § 2. Point picking and types of singularity models § 3.Geometric invaxiants of ancient solutions § 4.Dimension reduction § 5.Notes and commentaryChapter 9. Ancient Solutions § 1. Classification of ancient solutions on surfaces § 2. Properties of ancient solutions that relate to their type § 3. Geometry at infinity of gradient Ricci solitons § 4. Injectivity radius of steady gradient Ricci solitons § 5. Towards a classification of 3-dimensional ancient solutions § 6. Classification of 3-dimensional shrinking Ricci solitons § 7. Summary and open problems Chapter 10. Differential Harnack Estimates § 1. Harnack estimates for the heat and Laplace equations § 2. Harnack estimate on surfaces with x>0 § 3. Linear trace and interpolated Harnack estimates on surfaces § 4. Hamilton 'S matrix Harnack estimate for the Ricci flow § 5. Proof of the matrix Harnack estimate § 6. Harnack and pinching estimates for linearized Ricci flow § 7. Notes and commentaryChapter 11.Space-time Geometry § 1.Space-time solution to the Pdcci flow for degenerate metrics § 2.Space-time curvature is the matrix Harnack quadratic § 3.Potentially infinite metrics and potentially infinite dimensions § 4. Renormalizing the space-time length yields the g-length § 5. Space-time DeTurck 'S trick and fixing the measure § 6. Notes and commentary Appendix A. Geometric Analysis Related to Ricci Flow § 1.Compendium of inequalities § 2.Comparison theory for the heat kernel § 3.Green 'S function § 4.The Liouville theorem revisited § 5. Eigenvalues and eigenfunctions of the Laplacian § 6. The determinant of the Laplacian § 7. Parametrix for the heat equation § 8. Monotonicity for harmonic functions and maps § 9. Bieberbach

第一图书网, tushu007.com



theorem § 10.Notes and commentaryAppendix B.Analytic Techniques for Geometric Flows § 1.Riemannian surfaces § 2.Kazdan-Warner—type identities and solitons § 3.Andrews ' Poincare-type inequality § 4.The Yamabe flow and Aleksandrov reflection § 5.The cross curvature flow § 6.Time derivative of the sup function § 7.Notes and commentaryAppendix S.Solutions to Selected ExercisesBibliographyIndex



编辑推荐

The formulation of the Lecture in Contemporary Mathematics is based on these activities and series lectures . It serves as high level , specialized textbooks for senior undergraduates , graduate students , and young mathematics researchers in mathematics and applied sciences . By publishing lecture notes of top quality , notes from elite courses in summer schools , and other forms of notes . we wish that students and young researchers Can harvest a deep understanding of new developments , and grasp basic knowledge and important ongoing projects in different areas of mathematics in a short period of time .

第一图书网, tushu007.com



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