

## Description

The Ricci flow is currently a hot topic at the forefront of mathematics research. The recent developments of Grisha Perelman on Richard Hamilton's program for Ricci flow are exciting. The collection is intended to make readily available, in one book, to a wider audience the work of Hamilton and others on Ricci flow.

In the past two decades the Ricci flow, and in particular Richard Hamilton's work in it, has received attention as both having a profound influence on geometric evolution equations and as a possible approach to studying Thurston's Geometrization Conjecture.

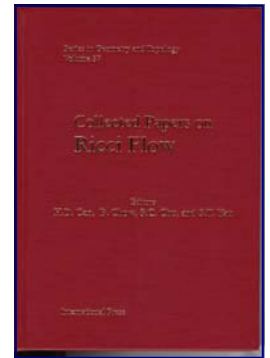
This selection of papers on the Riemannian Ricci flow is intended for a variety of purposes. The graduate student or researcher unfamiliar with the Ricci flow may use it as an introduction to the Ricci flow quickly leading to current research topics and open problems. Geometers already familiar with the Ricci flow may use it as a handy reference which contains almost all of Richard Hamilton's papers on the subject to date.

## Collected Papers on Ricci Flow

## Table of Contents

1. The formation of singularities in the Ricci flow, R. Hamilton
2. Three-manifolds with positive Ricci curvature, R. Hamilton
3. Deforming metrics in the direction of their Ricci tensors, D. DeTurck
4. Ricci deformation of the metric on a Riemannian manifold, G. Huisken
5. Four-manifolds with positive curvature operator, R. Hamilton
6. The Ricci flow on surfaces, R. Hamilton
7. The Ricci flow on the 2-sphere, B. Chow
8. On the entropy estimate for the Ricci flow on compact 2-orbifolds, B. Chow
9. An isoperimetric estimate for the Ricci flow on surfaces, R. Hamilton
10. The Harnack estimate for the Ricci flow, R. Hamilton
11. Eternal solutions to the Ricci flow, R. Hamilton
12. A geometric interpretation of Hamilton's Harnack inequality for the Ricci flow, B. Chow and S.C. Chu
13. A compactness property for solutions of the Ricci flow, R. Hamilton
14. Non-singular solutions of the Ricci flow on three-manifolds, R. Hamilton
15. Four-manifolds with positive isotropic curvature, R. Hamilton
16. The Harnack estimate for the Ricci flow on a surface-Revisited, R. Hamilton and S.T. Yau
17. On the parabolic kernel of the Schrodinger operator, P. Li and S.T. Yau
18. Existence of incompressible minimal surfaces and the topology of three-dimensional manifolds with non-negative scalar curvature, R. Schoen and S.T. Yau
19. Embedded minimal surfaces, exotic spheres, and manifolds with positive Ricci curvature, W. Meeks, L. Simon and S.T. Yau
20. Complete Riemannian manifolds with pointwise pinched curvature, B.L. Chen and X. P. Zhu
21. Three-Orbifolds with positive Ricci curvature, R. Hamilton
22. The Ricci flow on complete noncompact Kahler Manifolds, X.P. Zhu

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## Description

These are the proceedings of the joint seminar by M.I.T. and Harvard on the current Developments in mathematics for the year 2002.

The organizing committee for the seminar consisted of distinguished mathematicians from the mathematics departments of both institutions: B. Mazur, W. Schmid, and S.T. Yau from Harvard, and D. Jerison, T. Mrowka, and R. Stanley from M.I.T.. This year, the seminar was dedicated to Prof. Wilfried Schmid and Prof. George Lusztig.

The 2002 speakers included Albert Bressan, Mark Haiman, Richard Hain, Stephen Kudla, Yair Minsky, John Morgan, Leslie Saper, Kari Vilonen, and David Vogan.

Current Developments in Mathematics  
2002: in Honor of Wilfried Schmid and George Lusztig

## Table of Contents

1. One Dimensional Hyperbolic Systems of Conservation Laws - Alberto Bressan
2. Combinatorics, symmetric functions and Hilbert schemes - Mark Haiman
3. Periods of Limit Mixed Hodge Structures - Richard Hain
4. Modular forms and arithmetic geometry - Stephen S. Kudla
5. End Invariants and the Classification of Hyperbolic 3-Manifolds - Yair N. Minsky
6. On the Cohomology of Locally Symmetric Spaces and of their Compactifications - Leslie Saper

Editors: D. Jerison, G. Lusztig, B. Mazur, T. Mrowka, W. Schmid, R. Stanley & S.T. Yau

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