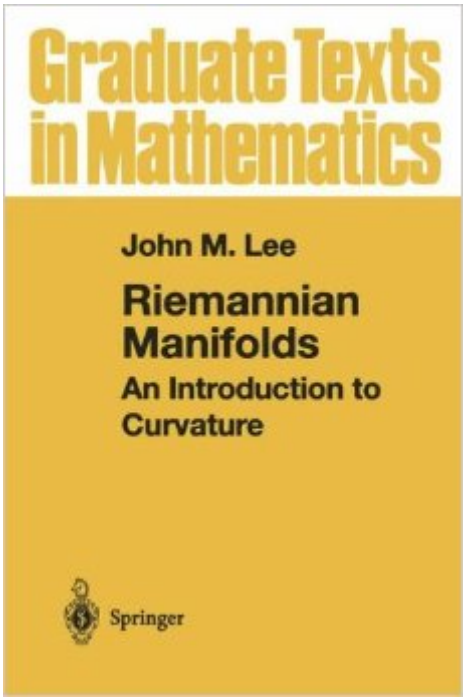
Riemannian Manifolds: An Introduction To Curvature (Graduate Texts In Mathematics)



Synopsis

This text focuses on developing an intimate acquaintance with the geometric meaning of curvature and thereby introduces and demonstrates all the main technical tools needed for a more advanced course on Riemannian manifolds. It covers proving the four most fundamental theorems relating curvature and topology: the Gauss-Bonnet Theorem, the Cartan-Hadamard Theorem, Bonnetâ ™s Theorem, and a special case of the Cartan-Ambrose-Hicks Theorem.

Book Information

Series: Graduate Texts in Mathematics (Book 176)

Hardcover: 226 pages

Publisher: Springer; 1997 edition (September 5, 1997)

Language: English

ISBN-10: 038798271X

ISBN-13: 978-0387982717

Product Dimensions: 6.1 x 0.7 x 9.2 inches

Shipping Weight: 1.2 pounds (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 starsÂ Â See all reviewsÂ (9 customer reviews)

Best Sellers Rank: #723,802 in Books (See Top 100 in Books) #94 inÂ Books > Science & Math > Mathematics > Geometry & Topology > Differential Geometry #99 inÂ Books > Science & Math > Mathematics > Geometry & Topology > Analytic Geometry #411 inÂ Books > Textbooks > Science & Mathematics > Mathematics > Geometry

Customer Reviews

By all accounts, this and Dr. Lee’s other two books on manifolds are exceptionally well-written. But my copies arrived from this week, and, unfortunately, and Springer have decided to replace the crisp offset-printing of earlier printings by lower quality digitally-printed versions, probably as a cost-cutting measure.If you care about how books look, I’d suggest trying marketplace or small retailers elsewhere to increase your odds of getting a superior copy from an earlier printing.

I’ve taught an introductory differential geometry course from Lee’s book, and in retrospect Do Carmo’s "Riemannian Geometry" would have been a better choice. To be fair Lee does masterful job introducing basic concepts from curvature to Jacobi fields, but here are a few things I disliked. The book assumes working knowledge of smooth manifolds and Lie brackets, while many students need review of the former, and know nothing of the latter. Lee doesn’t give enough examples

beyond constant curvature spaces: there is virtually no mention of warped products, Riemannian submersions, Lie groups, or homogeneous spaces. Exercises are few, unmotivated, and their difficulty is in stark contrast with the easiness of the main text. I feel Do Carmo's book is superior in all respects, and last time I checked it was not much more expensive.

I used this book to teach about half a year of a graduate Riemannian manifolds course. It is a very good introductory text. I wish it has a bit more background on curves and surfaces, but otherwise it was excellent. It doesn't get into a lot of more advanced topics, but the treatment of Jacobi fields and so forth is really good.

Prof. Lee sets the norm of mathematical exposition. I would give it 5 stars if it were more comprehensive. There is so much to say about Riemannian manifolds and it would be a pleasure to see them under the light the author sheds on such subtle concepts. One very nice feature of the book that underlies its structure is that it uses four theorems - pillars of Riemannian geometry as a guide of what should be included. This approach, besides improving considerably the organization of the book as compared to other books on the subject, it also motivates the reader who now has a target in his mind, namely the proofs of these important theorems. It is really nontrivial to introduce people to mathematical areas as broad as Riemannian geometry. Also, useful suggestions are given in the preface for further reading.

I just got this fella, and I'm really just through the first four chaptors but so far I'm very pleased. He really tries to tie the definitions and theorems to something you can think about. He gives three "model spaces", the n-sphere, R^n, and hyperbolic space and keeps coming beck to them as he does new things. I like that after he defines connections he shows some in R^n. You know, things like that. Anyway, I'm not a specialist but this seems to me as good an introduction to Reimannian curvature as you could ask for. At least as good in my opinion as Del Carmo's book.So thanks again Dr. Lee. You keep writing them and we'll keep reading them.

(Graduate Texts in Mathematics) Curvature in Mathematics and Physics (Dover Books on Mathematics) An Introduction to Knot Theory (Graduate Texts in Mathematics) Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) An Introduction to Banach Space Theory (Graduate Texts in Mathematics) Graph Theory (Graduate Texts in Mathematics) Functions of One Complex Variable II (Graduate Texts in Mathematics, Vol. 159) Algebraic Geometry (Graduate Texts in Mathematics) Categories for the Working Mathematician (Graduate Texts in Mathematics) Commutative Algebra: with a View Toward Algebraic Geometry (Graduate Texts in Mathematics) A First Course in Modular Forms (Graduate Texts in Mathematics) Rational Homotopy Theory (Graduate Texts in Mathematics) The Geometry of Schemes (Graduate Texts in Mathematics) The Arithmetic of Elliptic Curves (Graduate Texts in Mathematics) Algebraic Geometry: A First Course (Graduate Texts in Mathematics) (v. 133) Differential Geometry: Cartan's Generalization of Klein's Erlangen Program (Graduate Texts in Mathematics, Vol. 166)