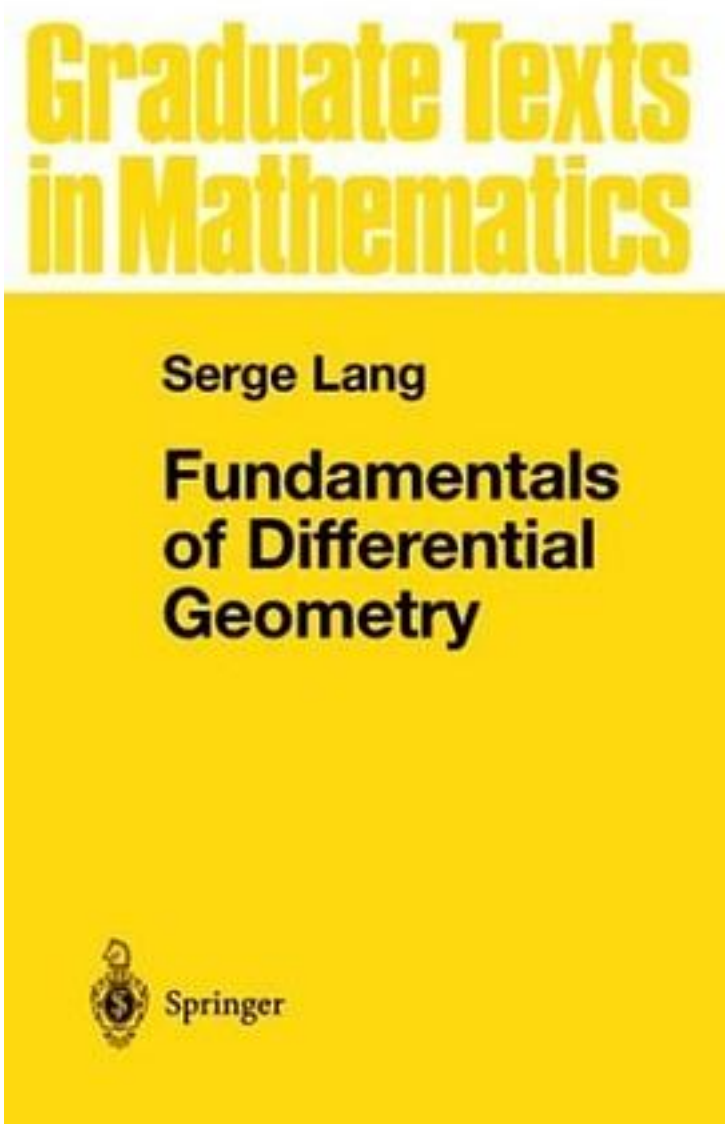
Fundamentals of Differential Geometry (Graduate Texts in Mathematics)



Fundamentals of Differential Geometry (Graduate Texts in Mathematics)_下载链接1_

著者:Serge Lang

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This text provides an introduction to basic concepts in differential topology, differential geometry, and differential equations, and some of the main basic theorems in all three areas: for instance, the existence, uniqueness, and smoothness theorems for differential equations and the flow of a vector field; the basic theory of vector bundles including the existence of tubular neighborhoods for a submanifold; the calculus of differential forms; basic notions of symplectic manifolds, including the canonical 2-form; sprays and covariant derivatives for Riemannian and pseudo-Riemannian manifolds; applications to the exponential map, including the Cartan-Hadamard theorem and the first basic theorem of calculus of variations. Although the book grew out of the author's earlier book "Differential and Riemannian Manifolds", the focus has now changed from the general theory of manifolds to general differential geometry, and includes new chapters on Jacobi lifts, tensorial splitting of the double tangent bundle, curvature and the variation formula, a generalization of the Cartan-Hadamard theorem, the semiparallelogram law of Bruhat-Tits and its equivalence with seminegative curvature and the exponential map distance increasing property, a major example of seminegative curvature (the space of positive definite symmetric real matrices), automorphisms and symmetries, and immersions and submersions. These are all covered for infinite-dimensional manifolds, modeled on Banach and Hilbert Spaces, at no cost in complications, and some gain in the elegance of the proofs. In the finite-dimensional case, differential forms of top degree are discussed, leading to Stokes' theorem (even for manifolds with singular boundary), and several of its applications to the differential or Riemannian case. Basic formulas concerning the Laplacian are given, exhibiting several of its features in immersions and submersions.

作者介绍:

Serge Lang (May 19, 1927 – September 12, 2005) was a French-born American mathematician. He is known for his work in number theory and for his mathematics textbooks, including the influential Algebra. He was a member of the Bourbaki group.

Lang was born in Paris in 1927, and moved with his family to California as a teenager, where he graduated in 1943 from Beverly Hills High School. He subsequently graduated from the California Institute of Technology in 1946, and received a doctorate from Princeton University in 1951. He held faculty positions at the University of Chicago and Columbia University (from 1955, leaving in 1971 in a dispute). At the time of his death he was professor emeritus of mathematics at Yale University.

目录:

标签

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评论

科大学子亲切地称Serge Lang为“色狼”（笑），不过书还是蛮好的啦

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build up your concepts

本书包含了《微分流形和黎曼流形》的全部内容，是那本书的“再版”。

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