

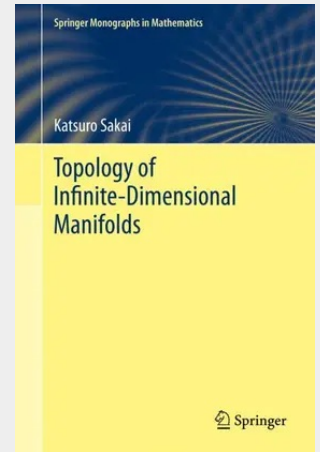
Topology of Infinite-Dimensional Manifolds

An infinite-dimensional manifold is a topological manifold modeled on some infinite-dimensional homogeneous space called a model space. In this book, the following spaces are considered model spaces: Hilbert space (or non-separable Hilbert spaces), the Hilbert cube, dense subspaces of Hilbert spaces being universal spaces for absolute Borel spaces, the direct limit of Euclidean spaces, and the direct limit of Hilbert cubes (which is homeomorphic to the dual of a separable infinite-dimensional Banach space with bounded weak-star topology).

This book is designed for graduate students to acquire knowledge of fundamental results on infinite-dimensional manifolds and their characterizations. To read and understand this book, some background is required even for senior graduate students in topology, but that background knowledge is minimized and is listed in the first chapter so that references can easily be found. Almost all necessary background information is found in *Geometric Aspects of General Topology*, the author's first book.

Many kinds of hyperspaces and function spaces are investigated in various branches of mathematics, which are mostly infinite-dimensional. Among them, many examples of infinite-dimensional manifolds have been found. For researchers studying such objects, this book will be very helpful. As outstanding applications of Hilbert cube manifolds, the book contains proofs of the topological invariance of Whitehead torsion and Borsuk's conjecture on the homotopy type of compact ANRs. This is also the first book that presents combinatorial 8-manifolds, the infinite-dimensional version of combinatorial n -manifolds, and proofs of two remarkable results, that is, any triangulation of each manifold modeled on the direct limit of Euclidean spaces is a combinatorial 8-manifold and the *Hauptvermutung* for them is true.

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160,49 €

149,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9789811575747

Medium: Buch

ISBN: 978-981-15-7574-7

Verlag: Springer

Erscheinungstermin: 22.11.2020

Sprache(n): Englisch

Auflage: 1. Auflage 2020

Serie: Springer Monographs in Mathematics

Produktform: Gebunden

Gewicht: 1109 g

Seiten: 619

Format (B x H): 160 x 241 mm

