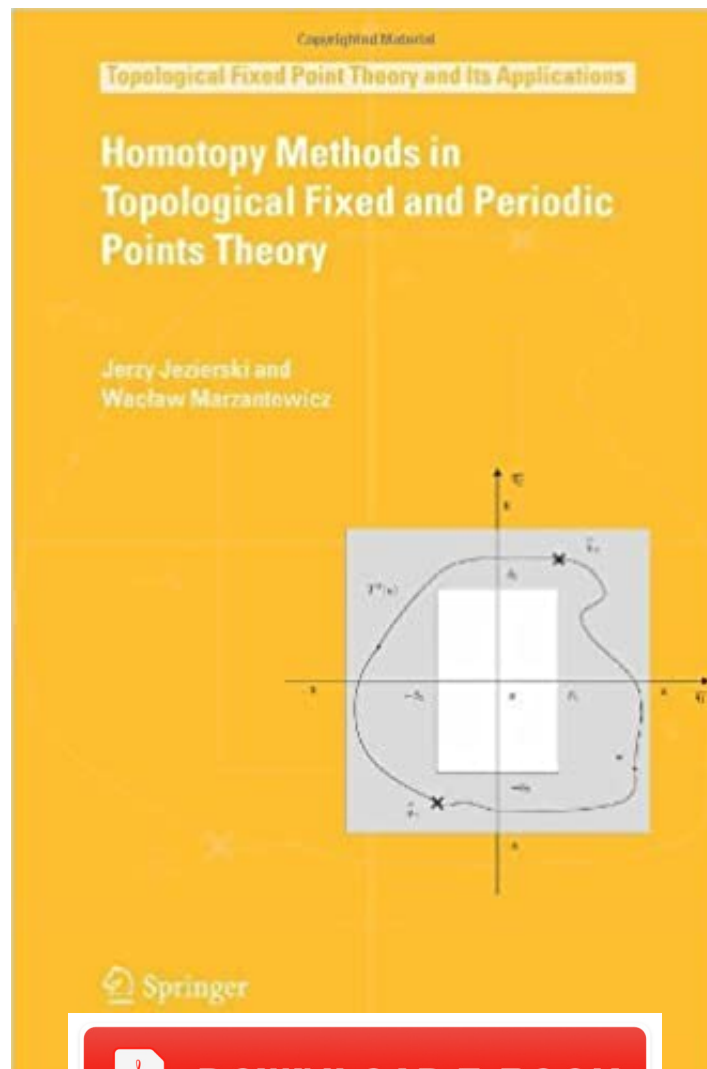


Homotopy Methods in Topological Fixed and Periodic Points Theory (Topological Fixed Point Theory and Its Applications Book 3)

by

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Synopsis

The notion of a fixed point plays a crucial role in numerous branches of mathematics and its applications. Information about the existence of such points is often the crucial argument in solving a problem. In particular, topological methods of fixed point theory have been an increasing focus of interest over the last century. These topological methods of fixed point theory are divided, roughly speaking, into two types. The first type includes such as the Banach Contraction Principle where the assumptions on the space can be very mild but a small change of the map can remove the fixed point. The second type, on the other hand, such as the Brouwer and Lefschetz Fixed Point Theorems, give the existence of a fixed point not only for a given map but also for any its deformations. This book is an exposition of a part of the topological fixed and periodic point theory, of this second type, based on the notions of Lefschetz and Nielsen numbers. Since both notions are homotopy invariants, the deformation is used as an essential method, and the assertions of theorems typically state the existence of fixed or periodic points for every map of the whole homotopy class, we refer to them as homotopy methods of the topological fixed and periodic point theory.

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