Record Nr. UNINA9910574857703321

Autore Idrissi Najib

Titolo Real Homotopy of Configuration Spaces : Peccot Lecture, Collège de

France, March & May 2020 / / by Najib Idrissi

Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,,

2022

ISBN 9783031044281

9783031044274

Edizione [1st ed. 2022.]

Descrizione fisica 1 online resource (201 pages)

Collana Lecture Notes in Mathematics, , 1617-9692 ; ; 2303

Disciplina 514.2

Soggetti Algebraic topology

Algebra, Homological Manifolds (Mathematics) Algebraic Topology

Category Theory, Homological Algebra

Manifolds and Cell Complexes

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Note generali Description based upon print version of record.

Sommario/riassunto This volume provides a unified and accessible account of recent

developments regarding the real homotopy type of configuration spaces of manifolds. Configuration spaces consist of collections of pairwise distinct points in a given manifold, the study of which is a classical topic in algebraic topology. One of this theory's most important questions concerns homotopy invariance: if a manifold can be continuously deformed into another one, then can the configuration spaces of the first manifold be continuously deformed into the configuration spaces of the second? This conjecture remains open for simply connected closed manifolds. Here, it is proved in characteristic zero (i.e. restricted to algebrotopological invariants with real coefficients), using ideas from the theory of operads. A generalization to manifolds with boundary is then considered. Based on the work of

Campos, Ducoulombier, Lambrechts, Willwacher, and the author, the book covers a vast array of topics, including rational homotopy theory,

compactifications, PA forms, propagators, Kontsevich integrals, and graph complexes, and will be of interest to a wide audience.