

1. Record Nr.	UNINA9910151928803321
Autore	Brown Ronald
Titolo	Nonabelian Algebraic Topology [[electronic resource]] : Filtered Spaces, Crossed Complexes, Cubical Homotopy Groupoids // Ronald Brown, Philip J. Higgins, Rafael Sivera
Pubbl/distr/stampa	Zuerich, Switzerland, : European Mathematical Society Publishing House, 2011
ISBN	3-03719-583-5
Descrizione fisica	1 online resource (703 pages)
Collana	EMS Tracts in Mathematics (ETM) ; 15
Classificazione	55-xx18-xx
Soggetti	Algebraic topology Category theory; homological algebra
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	The main theme of this book is that the use of filtered spaces rather than just topological spaces allows the development of basic algebraic topology in terms of higher homotopy groupoids; these algebraic structures better reflect the geometry of subdivision and composition than those commonly in use. Exploration of these uses of higher dimensional versions of groupoids has been largely the work of the first two authors since the mid 1960s. The structure of the book is intended to make it useful to a wide class of students and researchers for learning and evaluating these methods, primarily in algebraic topology but also in higher category theory and its applications in analogous areas of mathematics, physics and computer science. Part I explains the intuitions and theory in dimensions 1 and 2, with many figures and diagrams, and a detailed account of the theory of crossed modules. Part II develops the applications of crossed complexes. The engine driving these applications is the work of Part III on cubical - groupoids, their relations to crossed complexes, and their homotopically defined examples for filtered spaces. Part III also includes a chapter suggesting further directions and problems, and three appendices give accounts of some relevant aspects of category theory. Endnotes for each chapter give further history and references.

